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Prosodically determined coordinator placement in Yorùbá

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In this paper, we look at the properties of the clausal coordinator *sì* in Yorùbá. We will show that despite its unusual surface position in the middle field of the second conjunct, the element should still be treated as a proper coordinator and not, as sometimes claimed, as an adverb. We then go on to fully describe the distribution of *sì* in simple clauses as well as in complex constructions involving focus movement, adverbial or relative clauses. Based on these configurations, we argue that a search for a uniform syntactic position of *sì* is bound to be unsuccessful. Rather, we claim that the uniform underlying factor in all of these constructions is that *sì* always right-attaches to the first phonological phrase of the second conjunct clause irrespective of syntactic constituents or islands. We provide evidence for this claim from various phonological processes such as (i) phonological fusion, (ii) the association of floating tones, (iii) assimilation, (iv) tonal OCP-effects, and (v) allomorphy. The present study thus not only solves a curious language-specific puzzle in Yorùbá but also provides a convincing case of prosodically driven clitic displacement to a position after the first phonological/prosodic phrase. In doing so, it falls nicely into emerging typologies of clitic placement patterns in the world's languages.

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1 Introduction

Coordinators, i.e. functional elements used to coordinate clauses or other constituents, usually do not exhibit a large amount of variation when it comes to their morphosyntactic placement. In the vast majority of the cases, coordinators like English *and* in ‘*Simon and Garfunkel*’ are placed in between the two constituents they conjoin. Cases of coordinators appearing in different positions than that are extremely rare crosslinguistically. However, there are exceptions to this very strong tendency and from a typological perspective, exceptions to such strong tendencies can provide us with particularly interesting case studies. In some cases, such rare exceptions can be attributed to a particular combination of an unusual combination of language-specific factors but occasionally, such case studies can also inform us about the bigger picture of how logical structures are mapped onto linear strings of words and sounds.

In this paper, we address one of these exceptions to the general placement rule of coordinators. The clausal coordinator *sì* in the Niger-Congo language Yorùbá does not appear in between the two clauses it conjoins but rather in a specific position deeply embedded inside the second conjunct. This has led some researchers to question the status of *sì* as a coordinator and some came to the conclusion that *sì* should be analyzed as an adverb instead. We evaluate these claims and come to the conclusion that *sì* should indeed be analyzed as a proper coordinator which only displays a very unusual distribution. We go on to investigate this distribution and propose that the phenomenon instantiates a straightforward case study that illustrates the necessity for late, postsyntactic clitic displacement rule. The coordinator acts as a regular coordinator for syntactic and semantic reasons but then, once the syntactic structure is prosodified, it is displaced to a position after the first phonological phrase of its second conjunct. We go on to show that our assumed prosodic structure for Yorùbá is supported by various phonological processes and further that the unusual placement of *sì* is less surprising from the perspective of crosslinguistic placement of cliticizing coordinators.

We proceed as follows: In Section 2, we give a short background on some properties of the Yorùbá which will play a role throughout the discussion as well as on how the language expresses coordination. This section will also include a short discussion of the placement of *sì* in basic clauses. Section 3 then moves on to discuss the placement of *sì* in more complex constructions. Section 4 provides an interim summary, briefly laying out why a purely syntactic treatment of the placement of *sì* must be unsuccessful. Section 5 provides our own analysis in terms of prosodic clitic displacement. Section 6 goes through a number of phonological processes spanning several elements in a clause and thereby provides an argument that the prosodic phrasing in Yorùbá is such that it supports our analysis of *sì* placement. Section 7 provides a brief crosslinguistic overview of cliticizing coordinators and shows that the pattern of Yorùbá *sì* is not unexpected. Section 8 concludes.

2 Background on Yorùbá

In this section, we will give a short introduction to the Yorùbá language and some properties that will become relevant in the course of this paper. We will begin with some general background on

the language introducing some of the main syntactic and a few phonological properties. We will then go on to look more closely at coordination structures in the language.

2.1 Introduction to Yorùbá

The Yorùbá language belongs to the Niger-Congo language family and together with the language groups of Igálà and Itsẹ̀kiri, it forms the Yoruboid branch of the Volta-Niger group. It is spoken mainly in Nigeria, Benin and Togo and has, according to ethnologue.com, about 50 million native speakers.

The phonology of Yorùbá is comparably well-studied and has been discussed in much detail in works by Akinlabi (1985); Pulleyblank (1986); Archangeli & Pulleyblank (1989); Akinlabi & Liberman (2001). Yorùbá has seven vowels which differ in [\pm ATR].

- (1) a. [+ATR]: /i,e,o,u/
b. [-ATR]: /ẹ,ọ,a/.

Words in Yorùbá including compounds show intricate harmony effects with respect to [ATR].

The tonal system of Yorùbá is discussed in Akinlabi (1985); Pulleyblank (1986); Akinlabi & Liberman (2001). According to these descriptions, Yorùbá has three tones:

- (2) a. High: rá ('to disappear')
b. Mid: ra ('to rub')
c. Low: rà ('to buy') Akinlabi & Liberman (2001: 33)

Akinlabi (1985) and Pulleyblank (1986) provide a number of arguments that mid-tones are underlyingly toneless. In some configurations, tones are subject to an OCP-like dissimilation process that, in some configurations, extends beyond words and which will be used as a diagnostic in Section 6.

As for the syntactic properties of the language, we note that Yorùbá is an SVO-language with relatively rigid, head-initial order in most domains. Tense, negation and aspect appear in between the subject and the verb. In line with its head-initial status, the language makes use of prepositions and clause-initial complementizers (see e.g. Awobuluyi 1977; Ilori 2010). The examples below illustrate some of these features.

- (3) a. Adé rí wa kí á tóó lọ.
Adé see us COMP we.HTS before go
'Adé saw us before we went' Ilori (2010: 162)¹
- b. Ayò-ó ti jẹun.
Ayo-HTS PERF eat
'Ayo has eaten.'
Ilori (2010: 230), gloss adapted

¹ All data in this paper are, unless otherwise noted, due to the judgments of the first author, who is a native speaker of Yorùbá. In cases where judgments seemed less clear-cut we consulted with other native speakers about the relevant examples.

One feature that will play a role in the discussion below is that pronominal arguments as well as many of the grammatical particles such as negation, tense, mood and aspect interact with each other in a way that their surface form is conditioned by the other particles in the relevant configuration. Awobuluyi (1977) lists five different surface forms for the first person singular subject pronoun depending on whether it precedes certain tense, negation or mood markers.

Another feature that we briefly want to mention for now is the so-called high-tone syllable, glossed as HTS in example (3b). The HTS is an element following the subject in some configurations. If the subject ends in a low tone, the HTS copies the final vowel of the subject and projects its high tone as in (3b). If the subject ends in a mid-vowel, this mid-vowel is simply overwritten (4a), which is one of the arguments why Akinlabi (1985) and Pulleyblank (1986) argue that mid-tones are underlyingly toneless. If the subject ends in a high vowel, the HTS does not surface (4c). There is a fair amount of literature on the precise function of this element (see e.g. Awobuluyi (1977); Bisang & Sonaiya (1999)) but, as far as we can tell, the standard account is that it expresses some features relating the subject to the predicate (see Dechaine (1993)) in a way that is often attributed to subject agreement and that it is restricted non-future tense (see Ilori (2010) for discussion) as it is incompatible with the future marker *yóò* (4b):

- (4) a. Akín ra ilé.
Akin.HTS buy house
'Akin bought a house'
- b. Akin yóò ra ilé.
Akin FUT buy house
'Akin will buy a house' Ilori (2010: 148)
- b. Adé lọ
Adé go
'Adé went' Akinlabi & Liberman (2001: 36)

As with the dissimilations of tone, we will briefly come back to the HTS in Section 6. For now, we will move to taking a closer look at the syntax of coordination in Yorùbá. We will see more intricacies of Yorùbá syntax as we go along.

2.2 Coordination in Yorùbá

The grammatical markers used to indicate coordination in Yorùbá distinguish between the clausal and the non-clausal domain. In the non-clausal domain, the markers *àti* and *pẹ̀lú* are all used to coordinate nouns but according to Awobuluyi (1977: 104f) only *àti* is used to coordinate other elements such as PPs (6a).²

² Throughout this work, we will give the respective coordinators in bold and the respective conjuncts in brackets.

- (5) [Olá] **àti/pèlú** [Adé] wá ilé lánàá.
Olá AND/AND Adé come house yesterday
'Olá and Adé came home yesterday.'
Abimbola (2017: 60)
- (6) a. ní [ayé] **àti** [òrun].
in heaven AND earth
'in heaven and earth'
- b. [ní ayé] **àti** [ní òrun].
in heaven AND in earth
'in heaven and on earth'
Awobuluyi (1977: 105)

In the clausal domain however, these markers cannot be employed. Two straightforward coordinators used for clausal coordination are *àmó* and *şùgbón*, both of which express an adversative relation between the two conjuncts that is usually translated with the English coordinator *but*:

- (7) [Mo gbó], **àmó** [mi ò gbà].
I hear BUT I NEG accept
'I have heard but I am not accepting the offer.'
Ilori (2010: 170)
- (8) [Mo jẹun], **şùgbón** [mi ò yó].
I eat BUT I NEG be.full
'I ate but I am not satisfied.'
Ilori (2010: 170)

Simple, non-adversative coordination of clauses usually makes use of the element *sì*. Curiously, however, *sì* does not occur in the same position as the above-mentioned elements *àmó* and *şùgbón*. Rather it appears in a position somewhere between the subject and the verb of the second conjunct.

- (9) [Ó mu ọtí], [ó **sì** yó kánrin].
He drink wine he AND brim excess
'He drank wine and he was drunk a lot.'
Abimbola (2017: 63)
- (10) [Èmi óò dide], [èmi óò **sì** tọ baba mi lọ], [èmi óò **sì** wí fún un pé]
I will arise, I will AND to father my go, I will AND say to him that
'I will arise, go to my father and will say that...'
Ilori (2010: 176), gloss adapted

Given examples as in (9) and (10), the literature is divided as to whether *sì* should be treated as a regular coordinator or not. Awobuluyi (1977) and Ilori (2010) both reject the notion of *sì* as a coordinator and call it a consecutive adverb. Accordingly Ilori (2010) glosses *sì* as 'in-addition' and Awobuluyi (1977) sometimes translates it to English '*then*'. Yusuf (1980), Abimbola (2017) and Givón (2018) on the other hand take *sì* to be a coordinator.

In what follows, we will present three initial arguments that defend the claim of Yusuf (1980); Abimbola (2017); Givón (2018) that *sì* is a proper coordinator. The first argument is that *sì* is by no means restricted to cases of consecutive actions. This is shown in the following example taken from Abimbola (2017). Here, the two conjuncts are not in a consecutive relation; rather they express two states that both hold simultaneously. A consecutive adverb like English *then* is arguably not felicitous in such contexts.

- (11) [Ó pupa] [ó sì lẹwà]
 he fair he AND beautiful
 ‘He is fair and he is beautiful’ Abimbola (2017), gloss adapted

What we take this to mean is that Yorùbá *sì* can be used in all contexts in which English *and* can be used. Consecutive readings of coordination are simply pragmatically inferred in some cases. A simple notion of *sì* being a consecutive adverb can thus quite easily be shown to be untenable.

The second argument that *sì* is a proper coordination is based on the fact that *sì* is also in complementary distribution with the more regular conjunctions *ṣùgbón* and *àmọ* that we saw above. Examples like (12) and (13) are perceived as extremely marginal or are flat-out rejected by the speakers we consulted.

- (12) [Adé ra àpò] ṣùgbón [Olú kò (*?sì) mọ].
 Ade buy bag but Olu NEG AND know
 ‘Ade bought a bag but Olu did not know.’
- (13) [Adé ra àpò] àmọ [Olú kò (*?sì) mọ].
 Ade buy bag but Olu NEG AND know
 ‘Ade bought a bag but Olu did not know.’

Such behavior would be completely unexpected if *sì* were really an adverb because we do not expect a vP/VP-adverb to depend on the presence or absence of a clausal coordinator. In English for example, a consecutive adverb can easily cooccur with an adversative conjunction (*John went to bed early but then he still woke up too late*). In fact, we would like to submit that this piece of data strongly suggests not only that *sì* is not an adverb but rather that *sì* should be treated as a proper conjunction.

The third argument that *sì* is a proper coordinator is that it licenses coordination-specific processes; a diagnostic developed in detail by Weisser (2022). One such process is VP-ellipsis. In (14a), we see that VP-ellipsis is licensed by the regular adversative coordinator *ṣùgbón*. The example in (14b) shows that it is also licensed by *sì*. Crucially, as shown in (14c), one of the coordinators has to be present; VP-ellipsis is not possible in cases where there is no coordinator at all. Again, this shows quite clearly that, for syntactic purposes, *sì* counts as a proper coordinator.³

³ A similar argument for a clause-internal element indeed being a proper coordinator is brought forward by Kandybowicz (2005) for the neighboring language Nupe. Kandybowicz (2005) argues that this element behaves like a proper clausal coordinator in that it licenses the application of Right-Node-Raising:

- (14) a. [Níyì sọ pé òjò ní rọ̀], **ṣúgbọ̀n** [Adé kò sọ béè].
 Niyi say that rain PROG fall but Ade NEG say so
 ‘Niyi said it is raining but Ade didn’t.’
- b. [Níyì sọ pé òjò ní rọ̀], [Adé kò **sì** sọ béè].
 Niyi say that rain PROG fall Ade NEG AND say so
 ‘Niyi said it is raining and Ade didn’t.’ J.F. Ilori via I. Driemel (p.c.)
- c. *[Níyì sọ pé òjò ní rọ̀], [Adé kò sọ béè].
 Niyi say that rain PROG fall Ade NEG say so
 ‘Niyi said it is raining and Ade didn’t.’

Against the background of all of these arguments, we would like to put forward that configurations involving *sì* should be treated like instances of proper coordination and that *sì* is a proper clausal coordinator with a somewhat unusual distribution.

In the course of the next sections, we will see some more arguments that *sì* differs from adverbs in that it has a fundamentally different distribution as well as a fundamentally different behavior regarding scope. This serves as additional arguments that the notion of *sì* as an adverb is empirically not adequate. In the next subsection, we will turn to discussing the distribution of *sì* in simple clauses.

2.3 The distribution of *sì*

In this section, we will describe the general distribution of *sì*. As noted above, *sì* is, in simple clauses, located somewhere between the subject and the verb. Accordingly, we find two statements about the actual position of the element in question. Awobuluyi (1977: 69) calls *sì* a preverbal modifier whereas Givón (2018: 187) calls the position a “post-subject position”. And while these statements are clearly not wrong, we can refine them and be more precise if we employ *sì* in slightly more complex configurations. For example, we can see that *sì* not only follows the subject but rather also follows a number of modal and temporal elements (15) as well as negation (16):⁴

- (15) a. ... Ọlá yòò **sì** lọ.
 ... Ola will AND go
 ‘...and Ola will go.’

(i) [Musa à ba] [Gàná **ma** à gi nakàn].

Musa FUT cut Gana CONJ FUT eat meat

‘Musa will cut and Gana will eat the meat.’

Kandybowicz (2005: 60)

⁴ An anonymous reviewer asks if there is any variability in *sì*-placement in these examples. To the best of our knowledge, there is no variation at all. In all of the examples in this section, *sì* occupies a fixed position within the array of functional morphemes that can occur in the Yorùbá clause. In Section 2.4, we will encounter some examples where there is minimal variation in the sense that two positions seem to be possible but even then, one of them is judged only as marginally possible whereas the other is clearly preferred. We will discuss all instances of variable placement patterns that we know of in detail.

- b. ... Ọlá ò bá sị lọ.
 ... Ola should have AND go
 ‘...and Ola should have gone.’
- c. ... Ọlá á sị lọ.
 ... Ola would AND go
 ‘...and Ola would go.’

Abimbola (2017)

- (16) ... Ọlá ò sị lọ.
 ... Ola not AND go
 ‘...and Ola does not go.’

Abimbola (2017)

On the other hand, we see that *sị* also does not appear to be immediately preverbal. Preverbal adverbs can intervene between *sị* and the verb. Similarly, Yorùbá allows for two kinds of preverbal PPs both of which intervene between *sị* and the verb.

- (17) a. ... Ọlá sị tun lọ.
 ... Ola AND again go
 ‘...and Ola goes again.’
- b. ... Ọlá sị jàjà lọ.
 ... Ola AND finally go
 ‘...and Ola finally goes.’
- c. ... Ọlá sị mà lọ.
 ... Ola AND in.fact go
 ‘...and Ola in fact goes.’

Abimbola (2017)

In (18), the benefactive PP *bá mi* (‘for me’), must appear in between *sị* and the verb.

- (18) ... ó sị bá mi ra bàtà bọ.
 ... he AND for me buy shoe
 ‘...and he bought a pair of shoes for me.’

Finally, we also note that the aspectual marker indicating perfect appears after *sị* and before the verb.

- (19) ... ó sị ti ra bàtà.
 ... he AND PERF buy shoe
 ‘...and he has bought a pair of shoes.’

For now, we can thus summarize the position of *sị* within the second conjunct of clausal coordination schematically as follows:

(20) [Comp < Subj < Neg/Tense/Modal] < *sì* < [Perf < Adv/PP-Adjuncts < Verb < Obj]

We should note that there is very little flexibility in this ordering with respect to *sì*. *sì* can never precede the subject or tense, negation or modal elements even if there is other preverbal element it could right attach to. In (21), we see the coordination of two conditional clauses and again, the position of *sì* is fixed to the position to the right of the modal element *bá* glossed as *may*. It cannot appear before the subject (21b) even though there is a clause-initial complementizer *tí* it could potentially lean on. It also cannot occur between the subject and the modal. It must appear in its designated position below the modal and the verb.

- (21) a. [*Tí òrùn bá ran*] [*tí òjò bá sì rọ*]
 if sun may shine and if rain may AND fall
 ‘If the sun shines and if rain falls.’
 b. *[*Tí òrùn bá ran*] [*tí (*sì) òjò (*sì) bá rọ*]
 if sun may shine and if AND rain AND may fall
 ‘If the sun shines and if rain falls.’

Similarly, we note that the position of *sì* with respect to the adverbs is fixed. None of the above-mentioned adverbs *tun* or *jàjà* can precede *sì*.

- (22) a. ... *ọlá (*tun/jàjà) sì ọ*.
 ... Ola again/finally AND go
 ‘...and Ola goes again/finally/in.fact.’

And, finally, in (23) we see that the benefactive PP *bá mi* (‘for me’) cannot precede *sì* either.

- (23) ... *ó sì bá mi (*sì) ra bàtà ọ*.
 ... he AND for me AND buy shoe
 ‘...and he bought a pair of shoes for me.’

So, given that *sì* has a fixed position in the clausal spine of the Yorùbá clause (see schema in (20)), we could hypothesize that there is a fixed clausal projection that must host *sì*. And, as we will see in Section 4, this actually has been suggested by Ilori (2010), who assumes that *sì* obligatorily adjoins to VP/vP. And even though such an account would certainly need some additional assumptions to capture the entire picture (e.g. we would need to explain the fixed order of *sì* and other vP/VP-adverbs as well as the perfect marker *tí*), such an account according to which *sì* occupies a fixed, yet to be defined position in the clause, certainly seems promising at this point. However, as we will see, the data points in the next section do not fit particularly well with this picture.

3 The placement of *sì* in complex configurations

In this section, we will take a closer look at some more complex constructions in Yorùbá and see that, when embedded in a clausal coordination configuration, they yield some unexpected results with respect to the placement of *sì*. We start by looking at clausal coordination of clauses containing clause-initial adverbial clauses and then move on to constructions involving relative clauses and clauses involving focus movement.

3.1 Adverbial clause constructions

In the preceding section, we have seen that the alleged coordinator *sì* in Yorùbá seems to occupy a somewhat unusual but ultimately well-defined position in the second one of its conjuncts: It seems to occupy a certain middle-field position somewhere below the higher verbal categories such as tense, negation and modals but above perfect aspect and vP/VP-adjuncts. In this brief subsection, we will coordinate somewhat more complex constructions involving clauses containing a clause-initial adverbial clause. Abstractly, the pattern is as in (24). We conjoin two clauses C1 and C2, both of which contain a clause-initial adverbial clause but which otherwise follow the standard syntax of Yorùbá.

(24) $[_{C1} [_{AdvCl} \dots] S V O] \& [_{C2} [_{AdvCl} \dots] S V O]$

All things being equal, we would expect that the conjunction *sì* should appear in between the subject and the verb of the second conjunct (C2). This, however, is not what we find. Consider (25), which illustrates an actual example of the abstract structure in (24). The two clauses conjoined translate to *If the sun shines, Ade will go to Lagos.* (C1) and *If it rains, Olú will go to Ibàdàn.* (C2).

(25) [[Tí òrùn ba ran], Ade yóò lọ sí Èkó] [[tí òjò ba sì rọ],
 COMP sun may shine, Ade will go to Lagos COMP rain may AND fall
 Olú yóò lọ sí Ìbàdàn].
 Olú will go to Ibàdàn
 ‘If the sun is shining, Ade will go to Lagos and if it rains, Olú will go to Ìbàdàn.’

What we would have expected is to find *sì* after the phrase *Olú yóò* (‘Olú will’) and before the phrase *lọ sí Ìbàdàn* (‘go to Ìbàdàn’) as this is the vP/VP-edge of the second conjunct. What we find instead is that *sì* is found inside the embedded clause-initial conditional clause. Attempting to place *sì* in the expected position results in a significantly degraded sentence:

(26) ?? [[Tí òrùn ba ran], Ade yóò lọ sí Èkó] [[tí òjò ba rọ],
 COMP sun may shine, Ade will go to Lagos COMP rain may fall
 Olú yóò sì lọ sí Ìbàdàn].
 Olú will AND go to Ibàdàn
 ‘If the sun is shining, Ade will go to Lagos and if it rains, Olú will go to Ìbàdàn.’

This is a puzzling fact from a syntactic point of view because the presence or absence of a clause-initial adverbial clause should not make a difference for the purposes of *sì*-placement if *sì* simply were a grammatical particle that is restricted to a given syntactic position in the second conjunct. Even more striking perhaps, the adjunct clause should not be transparent for *sì*-placement itself because it is generally taken to be an island that is opaque to syntactic processes altogether.⁵

We will provide a full explanation for this curious placement pattern in Section 5. For now, we want to restrict ourselves to two comments about what these examples show us. First, we interpret these facts such that approaches which seem to explain the placement of *sì* inside the second conjunct by purely syntactic means are either doomed to fail or they at least must make some very unusual assumptions about the syntactic structure of adverbial clauses and their syntactic status as islands. The second comment concerns the placement of *sì* inside the adverbial clause. Just taking the position inside the adverbial clause, we find that *sì* appears again at what could be described as a VP/vP-edge position. This seems to indicate that *sì* seems to pick out the leftmost VP/vP-edge of the second conjunct regardless of syntactic embedding or constituency. Intuitively, we take this to mean that even though *sì* can never appear in the position in between the two conjuncts, it still has some abstract connection to that position and does not want to be pronounced “too far away” from that position. This intuition will reappear in the discussion about relative clauses and focus constructions below.

3.2 Relative clause constructions

In Section 2 we have seen that, in standard clauses, *sì* appears at a specific position inside the second conjunct. Ilori (2010) described this position as the VP/vP-edge and, for simple cases, this description was indeed sufficiently accurate. In the preceding subsection about configurations involving adverbial clauses, we saw however, that the placement of *sì* seems to be somewhat oblivious to syntactic constituency and islandhood in that it seems to pick the leftmost VP/vP-edge in the linear order irrespective of whether that edge belongs to the matrix clause or an adjunct. In this short subsection, we look at configurations where the subject of the second conjunct is modified by a relative clause.

Relative clauses in Yorùbá appear in postnominal position and are introduced by the multifunctional complementizer *tí*, which we already saw heading conditional clauses in the previous section. The relative clause itself contains a gap in the position where the head noun is interpreted unless that position is located inside a syntactic island; in which case, speakers use a

⁵ For discussion of island effects in Yorùbá and the status of adverbial clauses as islands, see Stahlke (1974); Aremu (2021).

resumptive pronoun inside the relative clause. In (27a), we see relativization from a direct object position, which results in a gap (here indicated with a *t*). In (27b), we see relativization from a possessor of a direct object, which requires the use of the resumptive pronoun *rẹ́*.

- (27) a. ọ̀bẹ̀_i [tí [mo sẹ̀ t_i]] é pọ̀.
 soup COMP 1SG cook HTS plenty
 ‘The soup which I made is plenty.’
- b. Akin_i [tí [wọ̀n jẹ ọ̀bẹ̀ rẹ̀_i]]
 Akin COMP 3PL.HTS eat soup 3SG.GEN
 ‘Akin, whose soup they ate gloss adapted, Ilori (2010: 251f)

Given the discussion in the previous sections, the question that arises is of course, what happens if the subject of the second conjunct is modified by a relative clause. Again, we can abstractly schematize the structure we want to test as in (28):

- (28) [_{C1} S V O] & [_{C2} S [_{relCl} ...] V O]

Against the background of the previous sections, we can ask ourselves whether *sì* attaches at the vP/VP-edge of the matrix clause or of the relative clause. The answer is, in this case, that *sì* has two options. Both positions are acceptable.

- (29) a. [Olú ti rà aṣọ], [obìnrin [tí Adé *sì* ri ní anà] ti
 Olu PERF bought clothes woman that Ade AND saw at yesterday PERF
 ra bàtà]
 buy shoes
 ‘Olu has bought clothes and the woman who Adé saw yesterday has bought shoes’
- b. [Olú ti rà aṣọ], [obìnrin [tí Adé ri ní anà] *sì* ti
 Olu PERF bought clothes woman that Ade saw at yesterday AND PERF
 ra bàtà.]
 buy shoes
 ‘Olu has bought clothes and the woman who Adé saw yesterday has bought shoes’

In (29a), *sì* is located in between the subject and the verb of the relative clause modifying the subject of the second conjunct (‘*who Adé saw yesterday*’). In (29b), *sì* is located in between the complex subject (i.e. after the postnominal relative clause) and the perfect marker *ti*.

Again, we can briefly highlight that the availability of (29a) seems problematic for an account which seeks to explain the placement of the coordinator simply by means of syntactic

constituency. Syntacto-semantically, the coordinator should take scope over the entire second conjunct and therefore, it should not be able to appear inside the relative clause. The availability of (29b), which is, from a syntactic (i.e. Ilori 2010's) point of view, presumably the expected position of *sì* sets relative clauses apart from conditional clauses.⁶

3.3 Focus constructions

The last of the more complex configurations we want to discuss concerns the so-called focus construction. Focus in Yorùbá is expressed by having the focussed item in a sentence-initial position followed by the element *ni*. With object focus, the object position is simply a gap:

- (30) a. *mo ra aṣọ*
I buy clothes
'I bought clothes'
- b. *aṣọ ni mo rà*
clothes FOC I buy
'I bought CLOTHES'
- Bisang & Sonaiya (2000: 180)

Subject focus on the other hand in Yorùbá involves the use of a resumptive pronoun in subject position:

- (31) a. *Olú wá lánàá.*
Olú come at.yesterday
'Olú came yesterday.'
- b. *Olú ni ó wá lánàá.*
Olú FOC 3SG come at.yesterday
'OLÚ came yesterday.'
- cf. Bisang & Sonaiya (2000: 182)

⁶ Before we proceed, we want to note an interesting asymmetry between subject and object relative clauses we came across. If the subject of the second conjunct is modified by an object relative clause as in the examples in (29), two positions are available. If the subject of the second conjunct is however modified by a subject relative clause, then *sì* only has a position in the matrix clause available.

- (i) [*Olú ti ra aṣọ*], [*obìnrin [tí ó (*sì) rí Adé ní anà*] (*sì*) ti ra
Olu PERF bought clothes woman that 3SG AND saw Adé at yesterday AND PERF buy
bàtà.]
shoes
'Olu bought clothes and the woman who saw Adé yesterday has bought shoes'

At this point we cannot offer a concrete explanation for that asymmetry but merely want to note that subject relative clauses also, like island configurations in (27b), leave a resumptive pronoun behind indicating that there might be a structural and/or prosodic difference between subject and object relative clauses to be uncovered. We leave the issue aside for now hoping that more detailed work about relative clauses in Yorùbá might unearth a solution.

As in the other cases, we can now conjoin two clauses involving focus fronting as abstractly schematized for object focus in (32).

(32) [_{C1} O *ni* S V] & [_{C2} O *ni* S V]

Somewhat surprisingly, the coordinator *sì* will then surface between the focussed XP and the focus marker *ni*:

(33) [*aşo ni mo rà*], [*bàtà sì ni Olá rà*].
 clothes FOC I buy shoes AND FOC Ola buy
 ‘I bought CLOTHES and Ola bought SHOES.’

Having *sì* in the standard position between the subject and the verb of the second conjunct is very much dispreferred:

(34) [*aşo ni mo rà*], [*bàtà ni Olá (?*sì) rà*].
 clothes FOC I buy shoes FOC Ola AND buy
 ‘I bought CLOTHES and Ola bought SHOES.’

Again, this presents a straightforward argument against *sì* begin a simple VP-adverb. Regular VP-adverbs like the ones we have seen above, are not licensed in such a position:⁷

(35) **aşo tìtì/jàjà ni mo rà*
 clothes quickly/finally FOC I buy
 ‘I bought CLOTHES quickly/finally’

The fact that *sì* surfaces in between the focussed XP and the focus marker *ni* clearly sets it apart from adverbs and other elements in Yorùbá. But in order to fully evaluate the consequences for the analysis at hand, we need to take a small detour to discuss the syntactic properties of Yorùbá focus constructions.

Focus constructions across Niger-Congo and West African languages in general are the subject of a long-standing debate. One of the core questions about these constructions are

⁷ The only exception we know of is the focus-sensitive particle *nìkan* (‘only’), which can also appear in the same position:

(i) *Adé nìkan ni ó jẹ işu náà.*
 Adé only FOC 3SG eat yam DET
 ‘Only ADÉ ate the yam.’

Aremu (2021: 23)

whether they involve biclausal, cleft-like structures or whether they are monoclausal. For Yorùbá, as far as we know, the existing analyses Awobuluyi (2008); Ilori (2010); Aremu (2021) uniformly point to monoclausal structures where *ni* realizes a specific functional projection in the left periphery.

Bisang & Sonaiya (2000) have argued that the focus particle *ni* is identical with one of the copulas in Yorùbá, which might be interpreted to pointing towards a biclausal cleft-like structure. The example in (36) illustrates the similarity between copula-like uses of *ni* and its use in the focus construction above:

- (36) kìnìun ni ọ̀ba ẹ̀ranko.
 lion BE king animal
 ‘The lion is the king of animals.’ Bisang & Sonaiya (2000: 172)

However, despite this superficial similarity, several facts point to the conclusion that what we are dealing with is in fact not a cleft-structure but indeed a monoclausal structure.

The first argument is that biclausal cleft-like structures like ‘*It was clothes that I bought*’ usually employ relative clause constructions and the case in (36) does not. As we have seen in Section 3.2, relative clauses in Yorùbá are introduced by the complementizer *tí*, which is absent in examples like (36).

The second argument comes from the fact that if *ni* in examples like (36) were a real copula, then we would expect it to behave like a regular verb in that it could be modified with adverbs. This however, is not possible. Example (37) (repeated from (35), above) below shows that it is not possible to modify the alleged copula with adverbs.

- (37) *aṣọ tun/jàjà/mà ni mo rà
 clothes again/finally/in.fact FOC I buy
 ‘I bought CLOTHES again/finally/in.fact’

The third argument is that it is not possible to have *ni* supplemented with future tense or perfect aspect morphology, which we would expect if *ni* were a real copula (38a,b).

- (38) a. *aṣọ yòdò ni mo rà
 clothes FUT FOC I buy
 Intended: ‘I will buy CLOTHES.’
 b. *aṣọ tí ni mo rà
 clothes PERF FOC I buy
 Intended: ‘I have bought CLOTHES.’

Finally, we note that there is a proper copula *jé* in Yorùbá, which retains the canonical SVO word order of the language, as shown in (39a). This contrasts with the alleged copula *ni* (39b) that always require the fronting of the object.⁸

- (39) a. Adé *jé* ọ̀rẹ̀ è mi.
 Adé COP friend POSS 1.SG.POSS
 ‘Adé is my friend.’
- b. ọ̀rẹ̀ è mi ni Adé.
 friend POSS 1.SG.POSS FOC Adé
 ‘Adé is MY FRIEND.’

Unlike *ni*, *jé* can occur with these future tense or perfect aspect morpheme indicating that it is actually a regular verb. As the examples in (40) show, it also patterns like other verbs with respect to its placement relative to these markers as well as adverbs.

- (40) a. Adé yòò *jé* olùkó.
 Adé FUT COP teacher
 ‘Adé will be a teacher.’
- b. Adé ti *jé* olùkó.
 Adé PFV COP teacher
 ‘Adé has been a teacher.’
- c. Adé jàjà *jé* olùkó.
 Adé finally COP teacher
 ‘Adé finally is teacher.’

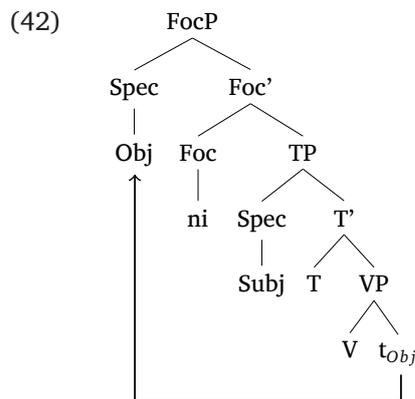
Note also, that examples like (39b) optionally allow for *jé* to appear in its expected position indicating that alleged cases of predication with the particle *ni* are merely instances of focus out of a predicative clause with a covert copula.

- (41) ọ̀rẹ̀ è mi ni Adé (*jé*).
 friend POSS 1.SG.POSS FOC Adé COP
 ‘Adé is MY FRIEND.’

⁸ What we glossed as POSS (possessive) here is usually glossed as MTS (mid tone syllable) in the Yorùbá literature. It is glossed as such because the syllable only takes the form of the preceding vowel in a possessive construction. Thus, it is argued to be underspecified with only a floating mid tone. However, there can be tonal interactions which causes a tonal change on the syllable. Another point to note is that there are linguists like Awobuluyi (2004) who believe that the syllable is just a *hesitation marker*. However, Ajiboye (2005) argues that the syllable is indeed a possessive morpheme (see also Akinlabi & Liberman (2001)). In what follows, we will assume this to be a possessive marker as well.

For all of these reasons, we concur with existing analyses in Awobuluyi (2008); Ilori (2010); Aremu (2021) that the focus particle *ni* is the realization of a functional projection in the left periphery.

What this means for our purposes here is that if *sì* precedes the focus marker and the focus marker is a functional head in the left periphery, then it is not hard to see why an analysis of *sì* as a vP/VP-adverb is hard to maintain. Consider the following tree depicting an object focus derivation taken from Ilori (2010):



If a tree like (42) is intended to cover the second conjunct of (33), repeated below for simplicity, then it is clear that *sì* cannot be a VP-adverb as Ilori (2010) claims it to be. If it were a VP-adverb, we would incorrectly expect it to appear in the position between the subject and the verb (43b).

- (43) a. ... [*bàtà sì ni Olá rà*].
 shoes AND FOC Ola buy
 ‘... and Ola bought SHOES.’
- b. ... * [*bàtà ni Olá sì rà*].
 shoes FOC Ola AND buy
 ‘... and Ola bought SHOES.’

In fact, we would like to submit that what these examples suggest is that not only is an analysis in terms of *sì* being a VP-adverb empirically inadequate but also that it is not straightforwardly possible to define a uniform syntactic position of *sì* altogether. *sì* sometimes appears in the left periphery and sometimes it appears as low as a VP-adverb. Any attempt to describe the placement of *sì* in such cases would either make some adhoc construction-specific assumptions where *sì* goes in focus and non-focus constructions or it would need to stipulate several different elements with the same form and the same function, which only differ in their placement properties. We will discuss this observation in more detail below.

4 Interim Summary and the need for a non-syntactic approach

In the two previous sections, we gave a more or less exhaustive picture of the placement patterns of *sì* in simple clauses (Section 2) and more complex constructions of various kinds (Section 3). In simple clauses, we saw that *sì* appears in a specific middle field position of its second conjunct following the subject, tense, negation and modals but preceding the perfect marker, adverbs and PP-adjuncts as well as the verb and the object. We schematized this above as (20) (repeated in (44))

(44) Simple Clauses:

[Comp < Subj < Neg/Tense/Modal] < *sì* < [Perf < Adv/PP-Adjuncts < Verb < Obj]

In more complex constructions we found that *sì* behaves slightly differently. We began by looking at constructions involving clause-initial adverbial clauses where *sì* appeared in the same structural position but inside the adverbial clause:

(45) Clause-Initial Adverbial Clauses:

... [_{C2} [_{AdvCl} S < T/Neg/Mod < *sì* < V < O] < S < T/Neg/Mod < V < O]

With relative clauses modifying the subject, we saw a similar picture. In these cases, *sì* could, at least as one option, appear inside the relative clause modifying the subject. The schema in (46) illustrates the crucial configuration:

(46) Object relative clause modifying the subject:

... [_{C2} S [_{RelCl} S < T/Neg/Mod < *sì* < V] < V < O]

Finally, we looked at constructions involving ex-situ focus of a constituent. In Yorùbá, this constituent is fronted and followed by the focus particle *ni*. If we embed this configuration as the second conjunct of a coordination, we find that *sì* appears in between the focussed constituent and the focus particle. The following schema illustrates this for a transitive clause with the direct object focussed:

(47) Focus Constructions:

... [_{C2} O < *sì* < *ni* < S < V]

Based on these observations, we would like to put forward the idea that it is not possible to describe the placement pattern of the Yorùbá coordinator *sì* simply in terms of syntactic constituency. In simple clauses, *sì* attached somewhere around the vP/VP-edge of its second conjunct, which led Ilori (2010) to assume that *sì* is some sort of a vP/VP-adjunct. This view however could not be maintained in the light of the data involving adverbial and relative clauses

as well as data involving focus constructions.⁹ In some cases, *sì* attached inside an adverbial or a relative clause that is merely adjoined to the second conjunct or the the subject of the second conjunct. In all of these configurations, *sì* ended up being linearized inside of a strong syntactic island in which it, syntactically and semantically did not really belong. In a sense, it really seems like *sì* completely ignores syntactic constituency and clause boundaries. This, we think, strongly indicates that syntax is not the right choice when it comes to describing the placement pattern of *sì*. We have a well-defined set of syntactic tools and they are useful to describe the placement patterns of virtually all elements but they obey certain restrictions and syntactic islands are crucially one of them.

Crucially, that does not mean that the placement of *sì* is not governed by systematic rules. We saw that even when *sì* ended up inside one of these islands, it nonetheless seemed to head for a vP/VP-edge like position. If we were only to look at the adverbial clause or the relative clauses in question, the position of *sì* again is very regular. It always follows the subject and negation/tense/modals and precedes the perfect marker, the verb and the object.

We thus need to derive the fact that the placement pattern of *sì* in Yorùbá seems perfectly systematic and coherent, it is just not governed by the syntax. We thus opt for an analysis according to which the placement of *sì* is governed by prosodic phrasing. Prosodic phrasing is highly systematic and it is influenced by syntactic factors but it is not always isomorphic to syntactic constituency. And, as we will see in the next section, making reference to prosody will allow us to describe the seemingly complex placement pattern of *sì* with one simple rule.

5 An analysis in terms of prosodic phrasing

In the previous section, we have provided several argument to support the claim that *sì* is not an adverb of some sort but rather a proper coordinator with an unusual placement pattern. What we lack at this point is a simple rule that would allow us to describe this placement pattern in its entirety. This is what we will set out for in this section. Section 5.1 introduces the rule that we believe is underlying the placement pattern of *sì* and goes through some of the crucial

⁹ The same holds for an attempt to transfer Kandybowicz' (2005) analysis of Nupe to Yorùbá. According to Kandybowicz (2005), the coordinator in Nupe has an EPP feature attracting the closest DP to its specifier, the coordinator thereby ending up in second position. However, this analysis does not transfer to Yorùbá because, we have seen in Sections 2 and 3, it is not just the subject that precedes the coordinator. Some functional elements like complementizers or tense markers as well as negation do as well. As they arguably do not form a constituent with the subject, they would need to move across the coordinator independently, which strikes us as unmotivated and problematic for a number of reasons. Further, a syntactic movement analysis would need to posit movement out of strong syntactic islands in order to derive the cases discussed in Section 3 where the coordinator ends up linearly in an adverbial or a relative clause.

derivations to show that the rule is empirically adequate. Section 5.2 then discusses some of the more technical details and how we want to derive the application of the rule.

5.1 Describing the pattern

One of the underlying intuitions that popped up throughout the discussion in Section 3 about the clause-initial adverbial clauses and the relative clauses was that *sì* seems to attach to what looks like the first vP/VP-edge it can find from left to right. In simple clauses, this inevitably will be the vP/VP-edge of the matrix clause but in more complex constructions where there is an embedded clause to the left of the matrix vP/VP-edge, then the vP/VP-edge of the embedded clause will be chosen. This intuitive analysis raises two questions: (i) What is so special about the position of the vP/VP-edge? and (ii) What about the position in Section 3.3 between the focussed element and the focus marker? As it turns out, the answer to both questions is the same one. We would like to defend that the following distributional statement about *sì* holds:

- (48) The distribution of *sì*:
sì right-adjoins to what is linearly the first prosodic phrase of its second conjunct.

In the rest of this subsection, we will go through the crucial derivations to show that the rule is empirically adequate. We can begin with some simple clauses and for now we simply submit that Yorùbá simple clauses consist of two prosodic domains that coincide with the domains we saw were relevant for the placement of *sì* in Section 2:¹⁰

- (49) { Comp < Subj < Neg/Tense/Modal }_φ < *sì* < { Perf < Adv/PP-Adjuncts < Verb < Obj }_φ

Of particular importance is the fact that the first domain contains complementizers the subject and the higher verbal projections.¹¹ At this point, this assumption is admittedly not well supported as there is, unfortunately, not a lot of work on Yorùbá prosody that we can build on. We will look at a number of phonological and morphophonological processes in Section 6 and we will argue that their patterns of application and under-application indeed suggest that the prosodic domains are such that they fit with our assumption above. In addition, we want to note that we think that this sort of prosodic bipartition is not completely adhoc. Prosodic literature on better studied languages has often noted that a prosodic bipartition along the VP/vP-edge (or more specifically some XP-edge including aspect but excluding higher verbal projection such as tense) seems to be a frequently attested pattern crosslinguistically (see e.g. Kahnemuyipour 2009).

¹⁰ In what follows, we will represent prosodic constituents in curly brackets and the φ -symbol represents prosodic phrases.

¹¹ It is not necessarily that important for our model to work as to whether the second prosodic domain must always be one domain. It might be that preverbal PP-adjuncts receive their own prosodic domain.

So, if we take this assumption at face value, virtually all of the patterns fall out without further ado. The following examples indicate some of the second conjuncts of examples above with the prosodic phrasing we assume.

- (50) ... { Ọlá ò bá }_φ s̀ì { lọ }_φ
 ... Ola should have AND go
 ‘...and Ola should have gone.’
- (51) ... { Ọlá }_φ s̀ì { bá mi ra bàtà bọ }_φ
 ... ọ́lá AND for me buy shoe
 ‘...and ọ́lá bought a pair of shoes for me.’
- (52) ... { Ọlá }_φ s̀ì { jàjà lọ }_φ
 ... Ola AND finally go
 ‘...and Ola finally goes.’

Similarly, the more complex constructions discussed in Section 3, can receive a similar representation. As for clause-initial conditional clauses, we will assume that they are prosodically integrated and their prosodic phrasing is therefore accessible for s̀ì-placement. Again the pattern is the same, s̀ì will simply attach right after the first prosodic phrase.

- (53) { tí òjò ba }_φ s̀ì { rọ }_φ { Olú yóò }_φ { lọ sí Ìbàdàn }_φ
 COMP rain may AND fall Olú will go to Ibàdàn
 ‘...and if it rains, Olú will go to Ibàdàn.’

With relative clauses, we saw actually two patterns in Section 3. In one of the patterns, we do see a similar effect as with the adverbial clauses in that the linear order simply trumps the syntactic embedding and again, the coordinator will attach after the first prosodic phrase.

- (54) ... { obìnrin tí Adé }_φ s̀ì { ri ní anà }_φ { ti ra bàtà }_φ
 woman that Ade AND saw at yesterday PERF buy shoes
 ‘...and the woman who Adé saw yesterday has bought shoes’

The second placement pattern with relative clauses on the other hand did have s̀ì in its expected position at the vP/VP-edge of the matrix clause. We believe that this kind of optionality is actually due to optionality in prosodic phrasing. It has been known for languages like German that relative clauses can be prosodically integrated or unintegrated (see e.g. Holler 2005; Truckenbrodt 2005; Kaland & van Heuven. 2010; Féry 2017) and while this difference often coincides with the status of the relative clause as restrictive or non-restrictive, it does not necessarily have to all the time (see Kaland & van Heuven. 2010; Weisser 2022). We will thus hypothesize that the pattern in which the coordinator s̀ì appears in the matrix clause is due to a non-integrated relative clause modifying the subject. By assumption, non-integrated relative clauses indicated by angled brackets are not accessible for s̀ì-placement.

- (55) ... { obìnrin < tí Adé ri ní anà > }_φ s̀ì { ti ra bàtà }_φ
 woman that Ade saw at yesterday AND PERF buy shoes
 ‘...and the woman who Adé saw yesterday has bought shoes’

The final pattern that we need to take a look at are the so-called focus constructions. We saw that with focus, the coordinator does not appear in its expected position in the clausal middle field but rather in between the focussed XP and the focus marker. We believe that this is due to the fact that focussed XPs are prosodically prominent because they receive their own prosodic phrase. This explains why they serve as a host for the coordinator *s̀ì*:

- (56) ... { bàtà }_φ s̀ì { ni Olá }_φ { rà }_φ
 shoes AND FOC Ola buy
 ‘...and Ola bought SHOES.’

Again, we want to refer the reader to Section 6 for an argument that the prosodic phrasing in (56) is indeed correct. In particular, we will show that the focus marker is indeed prosodified with the following subject.

This concludes the discussion of the individual patterns. We hope to have shown that a plausible prosodic phrasing pattern can describe the placement of *s̀ì* in all cases. Admittedly, for now, the prosodic phrasing we assumed to derive the pattern, while plausible from a crosslinguistic perspective, lacks concrete evidence from a language-internal perspective. As noted above, we will provide evidence for the prosodic phrasing in Section 6 below. Before we do that, we want to briefly discuss some technical assumptions of the model we entertain to derive the placement generalization about *s̀ì* attaching to the first prosodic phrase of the second conjunct.

5.2 The displacement rule

In the previous section, we have shown that a plausible prosodic phrasing pattern for Yorùbá actually allows us to maintain the following placement generalization about the distribution of *s̀ì* (repeated from (48) above):

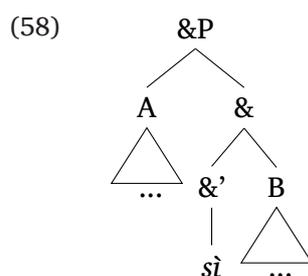
- (57) The distribution of *s̀ì*:
s̀ì right-adjoins to what is linearly the first prosodic phrase of its second conjunct.

In this section, we will discuss how we think this pattern should be derived. In order to do this we will briefly refer to similar cases of morpheme placement being sensitive to prosodic phrasing that have been noted in the literature but for a more comprehensive picture of crosslinguistic evidence, the reader is referred to Section 7.

In general, the fact that small grammatical elements are placed in what can be described as a second position of some sort is crosslinguistically speaking not surprising. Second-position clitics have been reported in countless languages from all continents. Following literature such

as Marantz (1988); Bošković (2001); Embick & Noyer (2001); Anderson (2005), researchers have started looking at how to define this second position and as it turns out, the term second-position is not a coherent, uniform notion crosslinguistically. In some cases, the second position clitic attaches to one syntactic constituent and in other cases, second position means that the second position clitic attaches to the first prosodic word. More recently, people also found a number of cases which look more like the case at hand, namely where the second-position clitic attaches to an entire prosodic phrase (see e.g. Inkelas & Zec 1990; Chung 2003; Herd 2003; Legate 2008; Dawson 2017; Weisser 2022; Belkind 2023) rather than to a prosodic word or a syntactic phrase.

The placement of such clitics, whose position is defined with respect to phonological or prosodic constituents, is typically derived by means of some dislocation mechanism that displaces the element in question one position to the right from the perspective of its syntactic position (see amongst many others Halpern (1995); Embick & Noyer (2001); Chung (2003); Legate (2008) and many others. Applied to the case study at hand, this gives us a straightforward way to derive why the Yorùbá coordinator *sì* shows up in the place that it does. Maintaining the assumption that it is a proper coordinator for all syntactic and semantic purposes, it makes sense that it is syntactically base-generated in the position in between the two conjuncts. And, from that position, the prosodic dislocation rule applies, displacing it exactly one prosodic phrase to the right. This is illustrated below. (58) shows the syntactic base-position of the coordinator in between the two conjuncts. We saw in Section 2 that *sì* is only available for clausal coordination and if we assume that the syntactic base-position of *sì* is in between the two conjuncts, we can model this as simple syntactic selection.



Further we assume that this structure is then sent to the interfaces LF and PF. On the LF side, this predicts that, for the purposes of interpretation, the coordinator still takes scope in the usual position in between the two conjuncts. We have seen that that prediction is borne out because even in cases where *sì* is deeply embedded inside an adverbial clause inside B, it will still always express coordination between the two conjuncts A and B. On the PF side, this structure will then be linearized and mapped onto prosodic categories. We can abstractly represent this as follows with a_x and b_x referring to placeholders for prosodic subconstituents of A and B, respectively:

(59) ... { a₁ ... a_n }_φ sɪ { b₁ ... b_n }_φ { b_{n+1} ... b_m }_φ ...

Based on this kind of prosodified structure, the clitic displacement rule of *sɪ* can apply. It will dislocate *sɪ* exactly one prosodic phrase to the right.

(60) ... { a₁ ... a_n }_φ { b₁ ... b_n }_φ sɪ { b_{n+1} ... b_m }_φ ...

For the sake of concreteness, we can assume that it will be integrated into an adjoined position in the prosodic phrase preceding it (see Ito & Mester 2006; 2009; 2012; Elfner 2012; Bennett et al. 2016) leading to a recursive prosodic phrase.¹²

This derivation predicts that the placement of *sɪ* should not have any bearing on syntactic processes inside the clause it finds itself in; in other words, there cannot be any morphosyntactic processes inside the second conjunct that are sensitive to the presence of *sɪ*. For all we know, this prediction is borne out.

So to sum up, in this section, we have proposed a new generalization to capture the placement of *sɪ*. In previous sections, we had established that syntactic rules are not particularly adequate to capture the distribution as the pattern seems to ignore syntactic islands and, to a certain extent, scope and constituency. Building on that insight, we proposed in this section, that the correct distributional generalization is one in terms of prosodic phrasing: *sɪ* consistently appears after the first prosodic phrase of the second conjunct. We then went on to indicate how we think the prosodic phrasing is in the crucial examples from Sections 2 and 3. The last section briefly discussed the displacement rule from a more abstract perspective.

In the next section, we will take a look at a number of phonological processes that span over individual words and particles. The goal of this section is to find independent evidence for the prosodic phrasing we assumed above.

¹² An anonymous reviewer asks about the motivation for the displacement rule to apply. One possible line of argumentation in this area is, in the spirit of Bennett et al. (2016) to assume that the displacement is caused by a dispreference for a weak prosodic element in phrase-initial position. Using an Optimality-Theoretic calculus of the syntax-prosody mapping, they assume a constraint *STRONG START*, which outranks a competing constraint to linearize the string in accordance to its syntactic structure and therefore causes displacement of the weak elements. Such an account in principle seems promising in light of the facts that regular conjunctions like *àmó* and *sùgbón* are phonologically heavier and would thus remain in situ whereas *sɪ* is displaced. It is nonetheless striking that, unlike in Irish in Bennett et al. (2016), where this kind of displacement affects an entire class of pronouns, we only know of one single element in Yorùbá that undergoes displacement due to *STRONG START*. An alternative motivation is to invoke subcategorization in the sense that this morpheme subcategorizes for a certain prosodic constituent to its left (see Rolle & Lionnet (2020) and references therein). Such an account would possibly be more adhoc but would not run the risk of overgenerating as we do not expect other clause-initial elements to displace due to *STRONG START* as well. We would like to remain agnostic about the actual motivation for this displacement at this point as we think that, for our purposes, both accounts are possible and come with their pros and cons.

6 Arguments from the Phonology

In this section, we will use various configurations between individual grammatical elements and see whether we will find phonological processes relating these particular positions. Similarly to above, we can represent the domains abstractly as in (61). In line with what we said above, we expect phonological interactions between all elements within a domain but never across different domains:

(61) { FocXP } < { Comp/Foc < Subj < Tense < Neg < Modal } < { Perf < V < O }

So, we expect that a focussed XP receiving its own prosodic phrase should not show any sort of interactions with other elements. For all we know this is correct. In fact, what we can observe is that, when a pronoun is focussed, it requires the emphatic independent form that does not show any interaction with other elements. (62) shows the nominative forms of the two sets of pronouns:

(62) Overview of the pronominal variants:

	Short pronouns	Long Pronouns
1SG	mi/mo	èmi
2SG	(w)ọ	ìwọ
3SG	ó/un/rẹ	òun
1PL	wa	àwa
2PL	yin	ẹyin
3PL	woṅ	àwon

(Ilori 2010: 309)

The examples in (63) show that in a focussed configuration, only the long forms are permitted.

- (63) a. Mo/O ra ìwé.
1SG/2SG buy book
'I/You bought the book.'
- b. Èmi/*Mo ni mo/ó ra ìwé.
1SG FOC 1SG/HTS buy book
'It is I who bought the book.'
- c. Iwọ/*O ni o/ó ra ìwé.
1SG FOC 2SG/HTS buy book
'It is you who bought the book.'

Ilori (2010: 241)

If we follow the line of argumentation in Akinlabi & Liberman (2001) according to which short pronouns in the table are actually phonologically deficient clitics, then this patterns nicely with

our assumptions. Focussed XPs receive their own prosodic phrase but since clitics need to attach to a prosodic host, they cannot appear in that position.

We now turn to concrete interactions between grammatical elements in the Yorùbá clause to show that they are in line with our assumptions about prosodic phrasing. Before we do that, we quickly want to point out that we do not intend to provide a complete description of these individual processes nor do we claim that our classification below withstands closer scrutiny. In all likelihood, more detailed investigations will show a more fine-grained distinction of processes than we cannot do justice to at this point. All we do here is to use these processes to diagnose the (morpho)phonological domains of the Yorùbá clause.

6.1 Fusion

We begin with instances of phonological fusion. As noted in a number of works (see e.g. Akinlabi 1985; Pulleyblank 1986; Akinlabi & Liberman 2001), there are quite a few environments in Yorùbá, when two adjacent elements are fused.

Verb-Object:

One of the most productive cases of fusion comes from verb-object combinations, which are frequently fused when the verb ends in a vowel and the object begins with one. Akinlabi & Liberman (2001) give quite some examples involving different types of vowel and tone combinations including the following ones:

- | | | | | | | |
|------|----|----------|---|-----------|---|----------------------|
| (64) | a. | wá | + | ékọ | → | wékọ |
| | | look.for | | education | | ‘look for education’ |
| | b. | wá | + | ọ̀nọ̀ | → | wọ̀nọ̀ |
| | | look.for | | way | | ‘look for a way’ |
| | c. | fé | + | ìwo | → | féwo |
| | | want | | horn | | ‘want a horn’ |
| | d. | jí | + | ọ̀bẹ̀ | → | jọ̀bẹ̀ |
| | | steal | | knife | | ‘steal a knife’ |
| | e. | jọ | + | àjẹ | → | jàjẹ |
| | | resemble | | witch | | ‘resemble a witch’ |

Akinlabi & Liberman (2001: 34)

As we can see, in some cases, the vowel quality of the verb is preserved (64c) and in some cases, the vowel quality of the object (64a,b,d,e). Similarly, we see that the tones of the verb is sometimes preserved (64a,b,c,d) and sometimes the tone of the first syllable of the object is preserved (64e). Note that these properties do not necessarily have to go together indicating that the two segments have indeed fused. Clearly we cannot do justice to the process of vowel fusion in Yorùbá in the present section but we want to note that this indicates that the verb and the object are phonologically fused in the same domain.

COMP-Subject:

Another configuration where we see fusion of two grammatical elements is with combinations of various question-introducing complementizers in combination with a subject pronoun in third person singular.

- (65) a. àbí + ó + wá → àbó wá
 Q 3SG come ‘did he come?’
 b. ẹ́ + ó + wá → ẹ́ó wá
 Q 3SG come ‘did he come?’
 c. ñjé + ó + wá → ñjó wá
 Q 3SG come ‘did he come?’

Akinlabi & Liberman (2001: 42f)

In addition to the data in (65) listed in Akinlabi & Liberman (2001) we note that this is not only found in polar questions but also with a proper complementizer and a subject which undergo fusion.

- (66) a. ... wipe + o + wá → wípo wá
 ... C 2SG come ‘that you came’
 b. ... wipe + ó + wá → wípó wá
 ... C 3SG come ‘that he came’

FOC-Subject:

It might be a surprising assumption that the focus marker *ni* is not prosodified together with the focussed XP but rather with the following subject. However, this assumption is supported by the fact that the focus marker and an adjacent 2SG or 3SG subject pronoun is contracted the portmanteau forms *lo* or *ló* is used:

- (67) a. kǐ lo rǎ?
 what FOC.2SG buy
 ‘What did you buy?’
 b. ta ló rǎ aʒo?
 who FOC.3SG buy clothes
 ‘Who bought clothes?’

Bisang & Sonaiya (2000: 179)

- (68) a. ni + o → lo
 FOC + 2SG
 b. ni + ó → ló
 FOC + 3SG

Bisang & Sonaiya (2000: 196)

Subject-NEG:

The final case of fusion or contraction applies with third singular pronouns and negation. Consider the minimal pairs in second singular and third singular in the affirmative and the negative:¹³

- (69) a. O lọ
2SG go
'You go'
- b. O ò lọ
2SG NEG go
'You don't go'

Oshodi (2018: 3)

- (70) a. Ó lọ
3SG go
'S/he goes'
- b. kò lọ
3SG.NEG go
'S/he doesn't go'

Oshodi (2018: 3)

- (71) ó + ò → kò
3SG + NEG

6.2 Association of floating tones**Subject-TENSE:**

We have already seen in the introduction to this paper that the non-future tense morpheme, the so-called high tone syllable (HTS) acts like a phrasal affix attaching to the subject position. As the name of the suffix already suggests, non-future tense is expressed merely with a floating high tone.

- (72) a. ọmọ ^H lọ → ọmọ lọ
child HTS go
'The child went'
- b. ọmọ ọkùnrin ^H lọ → ọmọ ọkùnrín lọ
child male HTS go
'The boy went'

¹³ Whether this is an actual case of fusion or contraction is a matter of an ongoing discussion. The underlying structure of the third person singular pronoun is debated in the literature as it alternates between *ó*, *un* and a zero-morpheme (for discussion, see Stahlke (1974); Awobuluyi (2008; 2013); Oshodi (2018); Taiwo & Japhet (2019)). The concrete solution to this largely orthogonal to the question at hand. Regardless of whether this is an instance of fusion, contraction, portmanteau formation or allomorphy, it seems reasonable to assume that this process indicates that the subject position and negation are in the same morphophonological domain.

This suggests that the subject and the tense element are in the same prosodic domain.

6.3 OCP-Effects

Next, we move on to so-called OCP-effects as discussed by Akinlabi & Liberman (2001). As these authors observe, tonal combinations are in some configurations restricted in the sense that the same tone cannot occur on two adjacent syllables. As a result, one of the tones will be deleted. Akinlabi & Liberman (2001) liken the process to so-called effects of the Obligatory Contour Principle (OCP).

Verb-Object:

The crucial configuration we want to look at involve verbs and pronominal objects. Usually object pronouns all come with a high tone as illustrated in the left and the middle columns in (73) where they appear after a low tone or a mid tone verb. In the rightmost column, where they appear after a high-tone verb, the high tone on the object pronoun is deleted.¹⁴

(73) Overview of the object pronouns:

	Low-tone verb <i>kò</i> ('divorce')	Mid-tone verb <i>pá</i> ('kill')	High-tone verb <i>kò</i> ('teach')
1SG	ó kò mí	ó pá mí	ó kò mi
2SG	ó kò ẹ	ó pá ẹ	ó kò ẹ
3SG	ó kò ọ	ó pá ẹ	ó kò ọ
1PL	ó kò wá	ó pá wá	ó kò wa
2PL	ó kò yín	ó pá yín	ó kò ọ yin
3PL	ó kò wón	ó pá wón	ó kò wón

We take this as another piece of evidence that verbs and object pronouns form a close morphophonological complex.

6.4 Assimilation

Comp-Subject:

We have seen that the third person pronoun fuses with the final vowel of preverbal particles and complementizers. The first and the second person pronouns do not fuse but still the final vowel of the particles assimilates to the vowel of the pronoun:

¹⁴ The only exception to that pattern is found in the second person plural where the language seems to opt for a repair of the OCP not by deleting the tone on the object pronoun but rather by inserting a dummy mid-tone syllable consisting only of the last vowel of the stem. See Akinlabi & Liberman (2001) for discussion.

- (74) a. àbí + a + wá → àbá a wá
 Q 1PL go ‘did we come?’
 b. şé + a + wá → şá a wá
 Q 1PL go ‘did we come?’
 c. ̀njé + a + wá → ̀njá a wá
 Q 1PL go ‘did we come?’

Akinlabi & Liberman (2001: 42f)

- (75) a. àbí + o + wá → àbó o wá
 Q 2SG go ‘did you come?’
 b. şé + o + wá → şó o wá
 Q 2SG go ‘did you come?’
 c. ̀njé + o + wá → ̀njó o wá
 Q 2SG go ‘did you come?’

Akinlabi & Liberman (2001: 42f)

In (74), the contexts with a first person plural pronoun *a*, we see that the particles all end in *a*, and in (75), a second person singular context where the pronoun is *o*, we find that they all end in *o*.

Neg-Modal:

Negation in Yorùbá shows a number of allomorphs and one alternation that is particularly insightful for our purposes at hand is the alternation between *kò* and *kì*. According to (Ilori 2010: 235f), *kò*, the default choice, changes to *kì* when it precedes the habitual modal *í* (75b). When it precedes another morpheme *ń* expressing habitual actions, it does not change (75c).

- (76) a. Akin kò (/ *kì) lọ.
 Akin NEG NEG go.
 ‘Akin did not go.’
 b. Akin kì (/ *kò) í lọ.
 Akin NEG NEG HAB go.
 ‘Akin habitually does not go.’
 c. Akin kò (/ *kì) ń lọ.
 Akin NEG NEG HAB go.
 ‘Akin habitually does not go.’

Ilori (2010: 235)

According to Ilori (2010), the change from *kò* to *kì* is the result of regressive assimilation of the vowel /i/ from the habitual modal to the negation. This, we take it, suggests that negation and the habitual modal are in the same prosodic domain.

6.5 Allomorphy

Subject-NEG:

The final process that we briefly want to mention is that of allomorphy between the first person subject pronoun and the negation. The first person singular morpheme *mo* changes to *mi* when preceding the negation:

- (77) a. Mo lɔ.
 1SG go
 ‘I went’
 b. Mi ò lɔ.
 1SG NEG go
 ‘I didn’t go’

Oshodi (2018: 3)

Again, we take this to indicate that the subject position and the negation are part of the same morphophonological domain.¹⁵

6.6 Summary

In the previous section, we have discussed some of the phonological processes that could give us a hint about the notion of phonological domains. The illustration in (78) summarizes the processes and the configurations they apply in.

- (78)
- | | | | | | | | | | | | | | | | | | | | | |
|-----------|---|---|--------------------|---|------|------------------|----------|---|-----|---|-------|---|---|---|------|---|---|---|---|---|
| { FocXP } | < | { | Comp/Foc | < | Subj | < | Tense | < | Neg | < | Modal | } | < | { | Perf | < | V | < | O | } |
| | | | Fusion
Assimil. | | HTS | | Assimil. | | | | | | | | | | | | | |
| | | | { | | { | | { | | { | | { | | | { | | { | | { | | |
| | | | } | | } | | } | | } | | } | | | } | | } | | } | | |
| | | | | | | Fusion
Allom. | | | | | | | | | | | | | | |

We have seen that the preverbal particles such as question markers and the focus marker *ni* shows interdependence with the subject position. The subject position is also closely related to the tense position and the position of negation. Negation in turn is dependent on the presence or absence of the habitual modal *í*.

¹⁵ As we are, at this point, not sure whether this is an instance of phonologically allomorphy by the segmental features of the negation or a case of morphosyntactic allomorphy conditioned by the morphological presence of a negation feature, this might be less direct of an argument for the two elements being part of the same *phonological* phrase. We nonetheless take it to be a suggestive argument because it is generally assumed that morphological domains are closely related to phonological domains (see amongst many others Kiparsky 1982; 2000; Borer 2013; Harðarsson 2021) and therefore even if that kind of allomorphy were a purely morphological process, it could still give us a hint about the prosodic phrasing.

Finally, we have seen that the verb and the object position are closely related. They are fused in some cases and also, we see the application of the tonal OCP deleting the tone of the object depending on the tone of the verb.

All in all, we see a lot of interdependencies between various elements in the clause but crucially for the claims put forward in this paper, we do not see any interdependencies across the domains we assumed for the purposes of *sì*-placement. There is no interdependency between the subject and the verb or between negation or a modal and the perfect marker or the verb.¹⁶

The absence of any interactions between the focussed XP and the focus marker as well as the fact that focussed pronouns must be expressed with the independent, bisyllabic form because they have no host to cliticize to strongly suggests that the focussed XP is indeed, as we predict, prosodified in its own domain. Similarly, the absence of interactions between the higher domain containing subject, tense, negation, etc and the lower domain containing aspect, the verb and the object, similarly suggests, in our view that these are prosodified in two different domains.

We take this as strong evidence that the phonological and prosodic domains are indeed along the lines of what we assumed for *sì*-placement. In the next section, we show that even though the Yorùbá pattern of a clause-internal conjunction might seem surprising at first sight, it patterns nicely with other instances of clause-internal coordinators and with typologies of clitic placement more generally.

7 Crosslinguistic Evidence

The main claim of this paper was to argue that *sì* is despite its unusual surface position indeed a proper coordinator. Syntactically and semantically, *sì* is a completely prototypical conjunction that exhibits all the major hallmark properties of coordinators. The unusual surface position, which we identified as a position immediately following the first prosodic phrase, is, we claim, the result of a late postsyntactic displacement rule that has the profile of a clitic displacement rule putting an element into some sort of second position.

The main goal of this section is to show that this kind of displacement is, while certainly unexpected from a language-internal perspective, not unprecedented crosslinguistically. In fact, the pattern at hand falls nicely into a typology of cliticizing coordinators.

Coordinators undergoing clitic displacement are not unheard of. One of the first thorough studies of clitic placement in Klavans (1985; 1995) discusses cases of cliticizing coordinators (conjunctions and disjunctions) in Ancient Greek. A lot of subsequent work (see amongst many others Inkelas 1990; Inkelas & Zec 1990; Halpern 1995; Bošković 2001; Anderson 2005; Embick

¹⁶ The perfect marker *tí* does not show any interactions whatsoever. Therefore, none of the processes we looked at tells us anything about which domain *tí* belongs to. At this point, we thus simply have to assume that *tí* belongs to the lower domain as it typically follows *sì* when both cooccur. Unfortunately, we do not have independent evidence for this assumption.

& Noyer 2001) has then refined the notion of second-position clitics showing that it can either be defined as a syntactic notion (i.e. the clitic appearing after the first syntactically defined XP) or a phonological/prosodic notion (i.e. the clitic appearing after the first phonological/prosodic word).

Klavans' case of Ancient Greek as well as similar cases in Latin and Hittite (see e.g. Marantz 1988; Embick & Noyer 2001; Agbayani & Golston 2010; Mitrović 2014) can be shown to be of the latter type. They attach to the first phonological word of second conjunct. In the Latin example in (79), the conjunction *que* attaches to the bisyllabic preposition in (79a) but in (79b) where the preposition following the conjunction is monosyllabic and therefore does not qualify as its own phonological word, *que* skips the preposition. Anderson (2005) notes that the same pattern exists in West Greenlandic.

- (79) a. ... [sine scut-is] [sine=**que** ferr-o] fu-erint
 without shield-ABL.PL without = AND iron-ABL be-SUBJ.PERF.3PL
 '... that they were without shields and without swords'
 Embick & Noyer (2001)

- b. [Is istum reliqui-t] [de provincia=**que** decess-it]
 he it leave.PERF-3SG from province = AND depart.PERF-3SG
 'He left it and departed from the province.'
 Cicero, Against Verres 2.2.48

It has also been claimed that some second-position clitics also attach to a position after the first phonological or prosodic phrase (see Inkelas 1990; Inkelas & Zec 1990; Chung 2003; Bennett et al. 2016; Belkind 2023). In the Chamorro example in (80), Chung (2003) argues that the second person singular clitic *hao* appears in the middle of a syntactic phrase as it attaches to the prosodic phrase *Kao patgon-ña*.

- (80) {Kao patgon-ña}_φ **hao** ädyu na ma'estra?
 Q child-AGR 2SG that L teacher
 'Are you that teacher's child?'
 Chamorro, (Chung 2003: 558), gloss adapted¹⁷

Thus, we might expect to find coordinator clitics that show exactly this pattern at hand; to occur after the first prosodic phrase of their second conjunct. This, we have argued, is exactly what we find in Yorùbá. Rather than Yorùbá *sì* begin a weird outlier, we thus note that its placement pattern, while clearly being typologically unusual, falls out as expected under current typologies of clitic placement.¹⁸

¹⁷ The *na*-morpheme glossed as L is a linker that, according to Chung (2003) indicates syntactic constituency. Chung (2003) shows that possessors such as *na ma'estra* be separated from their host noun phrase, thereby ruling out the possibility of syntactic extraction being the source of the placement of *hao*.

¹⁸ For a comprehensive typology of shifted coordinators see Weisser in prep.

In a recent paper, Weisser (2022) has argued that the German adversative coordinator *aber* has the same distribution as the one shown for Yorùbá *sì* and in fact we see many surprising parallels in placement of their coordinator between the two languages. As *sì* in Yorùbá, German *aber* can ignore syntactic constituency and freely shift into adverbial clauses if they appear initial to the second conjunct. In both cases, this suggests that the clitics in question do not target a syntactic constituent but rather a prosodic one. The following German in (81) example mimics the example of Yorùbá *sì* floating into an clause-initial adverbial clause, (25) repeated below in (82). Abstracting away from language-specific facts of word order (SVO in Yorùbá or V2 in German (with SOV in embedded clauses)), the examples look completely parallel.

- (81) [[Wenn die Sonne scheint,] geht Ade nach Lagos], [[wenn es **aber** regnet,]
 If the sun shines goes Ade to Lagos if it BUT rains
 geht Olú nach Ibàdàn.]
 goes Olú to Ibàdàn.
 ‘If the sun is shining, Ade will go to Lagos but if it is raining, Olú goes to Ibàdàn.’

- (82) [[Tí òrùn ba ran], Ade yóò lọ sí Èkó] [[tí òjò ba sì rò],
 COMP sun may shine, Ade will go to Lagos COMP rain may AND fall
 Olú yóò lọ sí Ibàdàn].
 Olú will go to Ibàdàn
 ‘If the sun is shining, Ade will go to Lagos and if it rains, Olú will go to Ibàdàn.’

In both cases, the elements in question could be shown to exhibit all basic properties of a proper coordinator except for their seemingly weird distribution. However, against the background of typology of clitic placement in the world’s languages, the placement of *sì* and *aber* is less surprising. We take this crosslinguistic perspective as another argument that the analysis at hand is a plausible one.

8 Conclusion

In this paper, we have taken a closer look at the element *sì* in Yorùbá. The status of this element has been the subject of a longer debate as some scholars have claimed it to be a clausal conjunction and others have claimed it to be an adverb. We presented arguments in favor of the first view, showing that despite its unusual surface position, the element shows properties of a conjunction. Further, we have shown that many of its properties remain mysterious under the assumption that *sì* is an adverb.

We then turned to explaining the unusual surface position, which is fairly deeply embedded inside its second conjunct. We showed that syntactic treatments according to which *sì* attaches to a specific XP or to a specific projection in the clausal spine are untenable. The strongest arguments came from the placement of *sì* inside clause-initial adverbial clauses, inside relative

clauses and in the position between the focussed XP and a focus marker. The analysis we proposed in response to these examples was that *sì* is – syntactically and semantically – a proper conjunction, but that it is subject to a late clitic displacement rule that puts it in a position after the first prosodic phrase of its second conjunct. This derivation, we argue, provides a simple and coherent rule that explains the distribution of *sì* in all examples we found.

In the last part of the paper, we then went on to provide independent evidence for the prosodic phrasing of the Yorùbá clause we adopted. We looked at a number of phonological processes linking certain positions in the clause and concluded that, while there is an abundance of phonological interactions between most elements in the Yorùbá clause, there is a striking absence of such interactions exactly in the positions we expect: (i) Between the focussed XP and the rest of the clause and (ii) between the higher domain including subject, tense, negation, etc. and the lower domain including aspect, the verb and the object. We took this as very suggestive evidence in favor of our view. The last section then took a step back and aimed to indicate that the placement of Yorùbá *sì* is actually expected from a more crosslinguistically typological perspective of cliticizing coordinators.

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Competing interests

The authors have no competing interests to declare.

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