Clitic deletion and the morphology/phonology interface

Rafael Nonato

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1 Introduction

This paper bears on the relation between morphology and phonology. As general framework I assume the *Optimal Interleaving* (OI) theory proposed by Wolf (2008). In order to account for a clitic deletion phenomenon found in Kĩsêdjê (Jê, Brazil), I will formalize an aspect of that model which, though central, is treated somewhat vaguely in Wolf (2008). Wolf assumes that the domain of application of morphophonological constraints is the *morphosyntactic word*, which notion he eventually loosens to include adjacent clitics (Wolf, 2008, p. 233). In order be able to account for the Kĩsêdjê phenomenon, I will propose that the domain at which morphophonological constraints apply is the *prosodic phrase*.

Optimal Interleaving is based on *Optimality Theory with Candidate Chains* (McCarthy, 2007). As far as the phenomenon I discuss here is concerned, a version of OI *without* Candidate Chains is enough. The principal point I borrow from OI is the idea that syntactic terminals have their phonological exponents inserted in the phonology, with exponent insertion constraints and phonological markedness constraints evaluated in parallel. In that sense, this paper represents empirical support to that idea.

I discuss a previously undocumented clitic deletion phenomenon found in Kĩsêdjê (Jê, Brazil) and explain its peculiarities by having recourse to an optimality-theoretical system that relates an input made up of syntactic terminals *without* phonological exponents to outputs made up of syntactic terminals *with* phonological exponents. The input is not a complete sentence, but rather the chunk contained between two prosodic phrase boundaries. The constraints relevant for the optimal computation of the output are exponent insertion faithfulness constraints and phonological markedness constraints (see Walter 2007 for an account of repetition avoidance effects in unrelated languages as also stemming from independently necessary phonological markedness constraints).

In Kĩsêdjê, there are certain contexts in which two clitics[1] would be expected to appear side by side, but in which only one ends up being pronounced. Not all clitic sequences are subject to this form of deletion. Deletion is dependent on a recoverability condition, namely, a clitic will only suffer deletion if its features have correspondents in the surviving clitic.

A piece of evidence that both clitics are indeed present in the input is the fact that they become immune to deletion once stressed material intervenes between them. A stressed interventor creates a prosodic phrase boundary to the right of the leftmost clitic, effectively placing it in a different prosodic phrases than the rightmost clitic. Given my proposal that the domain of evaluation of morphophonological constraints is the prosodic phrase, deletion doesn't occur in those cases because phonology can't simultaneously "see" those clitics anymore.

The core cases of deletion involve adjacent clitics, but let me stress that adjacency is not the relevant precondition for deletion. The relevant precondition for deletion is for two clitics to be simultaneously visible to phonology, that is to say, for both to be in the same prosodic phrase. Though adjacent clitics will more often than not be in the same prosodic phrase, there are examples in which adjacent clitics are parsed in different prosodic phrases, becoming thus immune to deletion. This situation obtains when the leftmost clitic is stress-dependent on a word to its left, whereas the rightmost clitic is stress-dependent on a word to its right, with a prosodic phrase boundary in-between. Examples of this kind will be discussed in section 4.2.

Substitution of one clitic by a non-clitic allomorph also bleeds deletion. I take that as evidence that deletion is a strategy to avoid dispreferred sequences of unstressed syllables (that dispreference is independently necessary to account for stress-assignment in the language, as we'll see in section 3). In the core cases deletion constitutes the optimal strategy to avoid such dispreferred sequences. Whenever deletion isn't possible, an optimal output can be arrived at through other modifications. I've already mentioned that deletion is parasitic on a recoverability condition. When that condition doesn't hold (i.e. when the surviving clitic wouldn't bear features in correspondence to those of the deleted clitic), an optimal surface form can be obtained through dislocation. Examples of that kind will be provided and discussed in section 2.2.2.

[1] By clitics I simply mean phonologically dependent words, that is to say, words that don't bear stress by themselves. It could be more appropriate to call these creatures *leaners*, following Zwicky (1982), but I don't think the distinction is illuminating for our current purposes.

An important novelty of my account is the introduction of a mechanism for chunking up structures built by narrow syntax into smaller pieces that are then input to morphological derivation. Such a component is essential for transitioning from derivations that take single words as input —as done by Wolf (2008)— to derivations that take multiple words, but not whole sentences, as input —Distributed Morphology (Harley and Noyer, 1999), the late-insertion theory OI gets its inspiration from, seems to tacitly assumes that complete sentences, or maybe phases, are input to morphology. A chunking mechanism to that purpose is absent from Wolf's (2008) theory. Though he briefly lists a few phenomena that could be accounted for by derivations taking inputs larger than words Wolf (2008, sec 3.9), the core data discussed in his text can be accounted for under the simpler assumption that inputs are single words, whose definition has to occasionally be relaxed into including surrounding clitics. The chunking mechanism I propose ships *prosodic phrases* to the morphological derivation, with prosodic boundaries being mapped in a language-specific way from either the left or the right boundary of certain syntactic phrases, as proposed by Selkirk (1986).

This paper is organized in the following fashion: section 2 presents the core data relevant to understanding the Kĩsêdjê clitic deletion effect, section 3 discusses stress placement in the language and section 4 proposes an account for the Kĩsêdjê effect. I derive the effect from the interaction of the stress-related markedness constraints discussed in section 3 and the morphological faithfulness constraints proposed by Wolf (2008). In section 5 I offer some closing remarks.

2 The data

In this section I will present two scenarios where deletion targets a clitic that would otherwise surface adjacent to another clitic, and two scenarios where adjacent clitics are tolerated. As we will see, those scenarios contrast with respect to a recoverability condition to the effect that a clitic will only be deleted if the features it carries find correspondents in the surviving clitic.

The first scenario of *deletion* involves plural clitic markers (section 2.1.1). The second scenario involves a coordinating clitic conjunction and a nominative clitic pronoun (section 2.1.2).

The first scenario of *tolerance* involves an inflectional clitic and a nominative clitic pronoun (section 2.2.1). The second scenario involves a nominative clitic pronoun and a plural clitic marker (section 2.2.2).

All of the examples discussed in this section feature adjacent clitics. As I mentioned in the introduction, that is not the necessary and sufficient condition for deletion. Deletion targets adjacent clitics in the *same prosodic phrase*. When clitics are adjacent, they are most often than not parsed in the same prosodic phrase, but examples featuring adjacent clitics that *aren't* parsed in the same prosodic phrases exist and will be discussed in section 4.2, following a description of how Kĩsêdjê parses its words into prosodic phrases.

2.1 Intolerable sequences of clitics

2.1.1 Sequences of plural markers

Kĩsêdjê personal pronouns don't carry number features. The plural feature is contributed by a separate clitic plural marker, *=aj*. Plural markers occur to the right of nominative pronouns and to the left of accusative and absolutive pronouns. In (1) we can observe two pluralizers, the first of which is linked to the nominative argument, the other being linked to the absolutive argument. If those markers are both visible in (1), it is because there is a PP intervening between them. The left edge of that PP is mapped to a prosodic phrase boundary, and as a result the clitics are parsed into different prosodic phrases. If that PP were left out, the resulting sentence would contain only one plural marker, and would be three-way ambiguous (2)[2].

(1) Plural subject + intervener + plural object
ˈhẽn[3]=wa ˈkê =**aj** |$_{\text{PPh}}$ Ø-ˈkhãm =**aj** s-õmu
INFL=1_{nom} also =PL 3_{abs}-in =PL 3_{acc}-see
'We also saw them there'

(2) No intervener: deletion

a. ˈhẽn=wa ˈkê =**aj** s-õmu
INFL=1_{nom} also =PL 3_{acc}-see
'We also saw them/We also saw him/I also saw them'

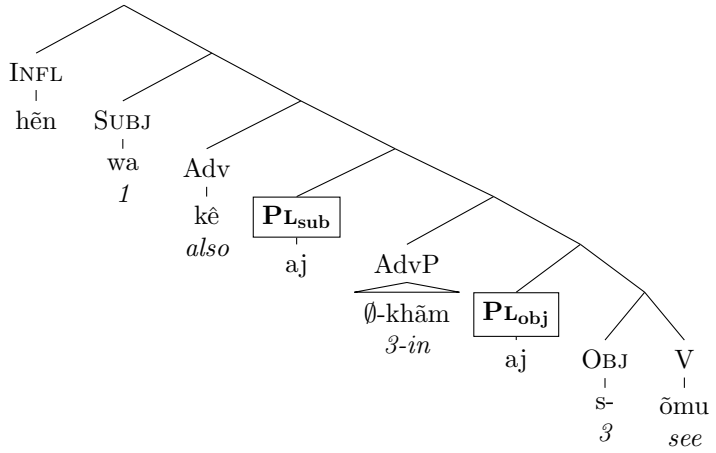
b. *ˈhẽn=wa ˈkê =**aj** =**aj** s-õmu
INFL=1_{nom} also =PL =PL 3_{acc}-see

[2]If we hadn't found out that the relevant factor for deletion was co-occurrence within the boundaries of a prosodic phrase, we could be tempted into thinking that Kĩsêdjê had omnivorous number marking (see Nevins 2011).

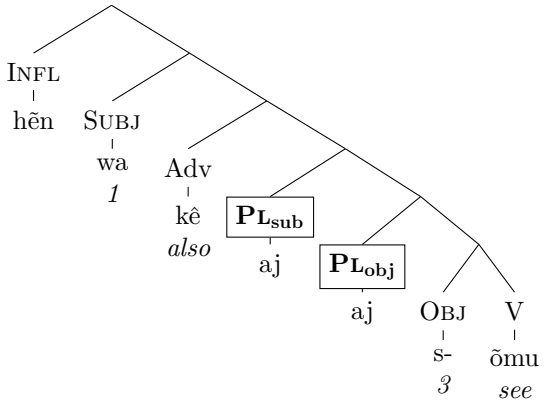
[3]The symbol ˈ marks main stress. The abbreviations used in the glosses are the following: 1, 2 and 3 = 1st, 2nd and 3rd person, $_{\text{nom}}$ = nominative, $_{\text{abs}}$ = absolutive, $_{\text{erg}}$ = ergative, PL = plural, INFL = Inflection, DS = different subjects, SS = same subjects, FUT = future

The ambiguity of (2-a) is due to the fact that there are three different underlying representations all of which, after being input to morphology, end up being pronounced the same may. One of those representations contains two pluralizers, namely, the one that gives the meaning "We also saw them". This representation is identical to that of (1) minus the AdvP. A schematic representation of the structure of (1) is given in (3). The input representation of (2-a)/"We also saw them", is identical to (3) minus the AdvP. It is schematically represented in (4). Though both plural positions are filled in that underlying representation, a language-specific dispreference for sequences of unstressed syllables forces an output with only one plural marker. That single output marker is in correspondence to both plural markers present in the input representation.

(3) Input representation of (1)



(4) Input representation of "We also saw them" (2-a)

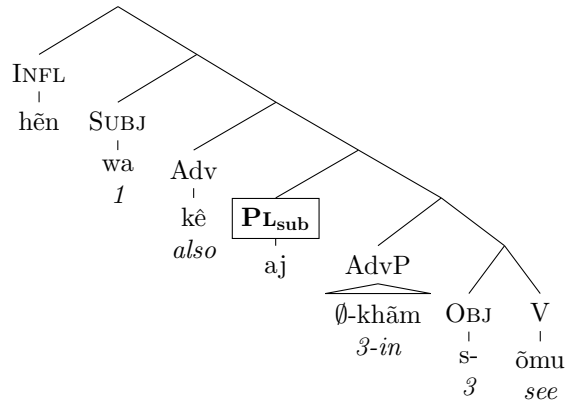


The other two meanings of (2-a) correspond to input representations that are identical to those of sentences (5) and (6), minus the AdvP. Schematic representations of the structure of (5) and (6) are shown in (7) and (8).

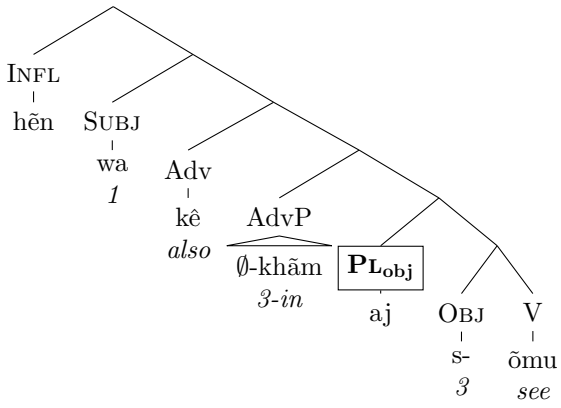
(5) Plural subject + Intervener + Singular object
'hẽn=wa 'kê =**aj** ∅-khãm sõmu
INFL=1_{nom} also =PL 3_{abs}-in 3_{acc}-see
'We also saw him there'

(6) Singular subject + Intervener + Plural object
'hẽn=wa 'kê ∅-'khãm =**aj** sõmu
INFL=1_{nom} also 3_{abs}-in =PL 3_{acc}-see
'I also saw them there'

(7) Input representation of (5)

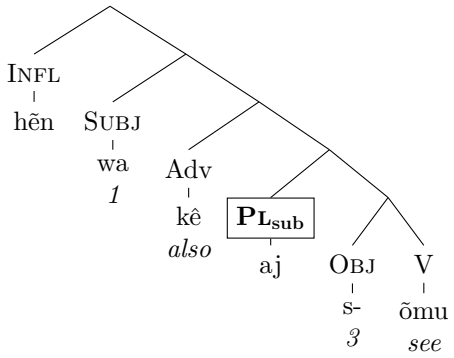


(8) Input representation of (6)

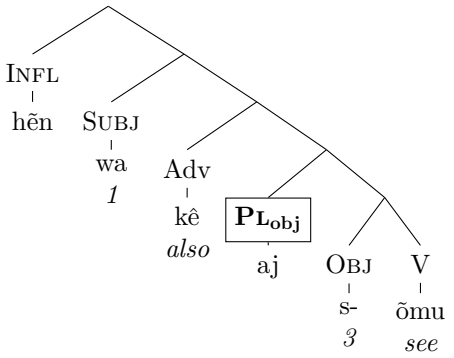


By removing the AdvP from (7) and (8) we obtain the input representation of the two other meanings of (2-a) ("We also saw him"/"I also saw them"). They are schematically represented, respectively, in (9) and (10). Although the input representations that generate those two meanings are distinct, when the AdvP is absent it becomes impossible for the hearer to parse the position of the plural marker as either the one linked to the subject or the one linked to the object. These input representations don't contain sequences of clitics anyways, and are thus not relevant for the phenomenon under investigation.

(9) Input representation of "We also saw him" (2-a)



(10) Input representation of "I also saw them" (2-a)



2.1.2 Coordinator plus nominative pronoun

The other scenario where deletion of clitics obtains is when a clausal coordinating conjunction is adjacent in the same prosodic phrase as a nominative pronoun. First note that the Kĩsêdjê clausal coordinating conjunction differs from that of most well studied languages in having distinct forms that mark whether the subjects of its conjuncts are the same (11-a) or different (11-b)[4]. Also note that the different-subject coordinator overtly agrees in person with the subject of the coming clause.

(11) Kĩsêdjê clausal coordinating conjunction

a. Same-subject "and"
hẽn [∅ ˈpâj] [=**ne** ∅ khu-ku]
INFL [3$_{nom}$ arrive] [=and.SS 3$_{nom}$ 3$_{acc}$-eat]
'He$_i$ arrived and (then) 3$_i$ ate it'

b. Different-subject "and"
hẽn [∅ ˈpâj] [=**nhy** ∅ khu-ku]
INFL [3$_{nom}$ arrive] [=and.DS.3 3$_{nom}$ 3$_{acc}$-eat]
'He$_i$ arrived and (then) 3$_{j,*i}$ ate it'

Those examples don't feature deletion. The third person nominative pronoun is null, and therefore they don't feature sequences of unstressed syllables. Example (12) below also doesn't feature deletion, since there is a prosodic phrase boundary intervening between the same-subject clitic conjunction and the clitic nominative pronoun.

(12) No deletion when same-subject conjunction and pronoun aren't adjacent
[Canarana mã=n=ka ˈpâj] [=**ne** |PPh wâtâ kaˈpẽrẽ=n=**ka** s-arẽ?]
[Canarana to=INFL=2$_{nom}$ arrive] [=and.SS what language=INFL=2$_{nom}$ 3$_{acc}$-say]
'You went to Canarana and what language you spoke there?'

If the intervening material is left out and the clitics are parsed into a single prosodic phrase, the second clitic deletes (13).

(13) Deletion when same-subject conjunction and pronoun are adjacent

a. *hẽn [=ka ˈpâj] [=**ne** =**ka** s-arẽ]
INFL [=2$_{nom}$ arrive] [=and.SS =2$_{nom}$ 3$_{acc}$-say]
'You arrived and (then) you said it'

b. hẽn [=ka ˈpâj] [=**ne** s-arẽ]
INFL [=2$_{nom}$ arrive] [=and.SS 3$_{acc}$-say]
'You arrived and (then) you said it'

The same phenomenon is observed in coordination of clauses with different subjects. Observe a sentence that doesn't feature deletion, (14) below. Note the different-subject conjunction agreeing in person with the subject of the following sentence, as it did in (11-b). It is not surprising for conjunctions to agree with subjects. Kanite (Trans-New-Guinea), for one, is another language that marks anticipatory subject agreement in coordinating conjunctions (c.f. McCarthy, 1965).

[4]This kind of marking has been referred to as switch-reference (Jacobsen, 1967)

(14) No deletion when different-subject conjunction and pronoun aren't adjacent
[atha=n=ka khu-ˈpy] [=**wa** |$_{\text{PPh}}$ ˈnhũm=na=**wa** tho ∅-kande mã?]
[that=INFL=2_{nom} 3_{acc}-get] [=AND.DS.1 who=INFL=1_{nom} 3.with 3_{acc}-treat FUT]
'You got that (medicine) and who will I treat with it?'

If we leave the intervening material out, the different-subject is parsed into the same prosodic phrase as nominative subject, and one of them deletes. Unlike deletion in same-subject coordination (13), here it is not clear which clitic deletes (since they have the same phonological shape). For now, if only to be consistent which the case of deletion in same-subject coordination, I will take it to be the second clitic that deletes. The theory I develop in section 4 will point in that same direction.

(15) Deletion when different-subject conjunction and pronoun are adjacent
a. *hẽn [=ka khu-ˈpy] [=**wa** =**wa** tho ∅-kande mã]
INFL [=2_{nom} 3_{acc}-get] [=AND.DS.1 =1_{nom} it.with 3_{acc}-treat FUT]
b. hẽn [=ka khu-ˈpy] [=**wa** tho ∅-kande mã]
INFL [=2_{nom} 3_{acc}-get] [=AND.DS.1 it.with 3_{acc}-treat FUT]
'You got it and I will treat him with it.'

It would seem like this language, faced with a dispreferred sequence of unstressed syllables, choses to keep the one that contains more information content and leave the other one out. The account I present in section 4 is but a formalization of this intuition, which I'll spend the next few paragraphs developing a bit more.

In same-subject coordination, since the reference of the subject of the coming clause can be fully determined from the information gained from the same-subject conjunction, it becomes redundant to pronounce the coming clause's subject pronoun, which can therefore be deleted without semantic loss. It could seem like the opposite, namely, deleting the same-subject conjunction while leaving the pronoun intact, would be equally informative. In that latter case, though, deletion would target the element that carries same-subject coordination semantics, which information couldn't be recovered from the surviving pronoun in the coming clause. The resulting sentence would become indistinguishable from different-subject coordination.

In Kĩsêdjê, different-subject coordination with subjects of the same {+participant} person in both clauses is not a contradiction. That is so because different-subject conjunctions, rather than indicating that the subjects of the coordinated clauses are completely disjoint, actually indicates that the subject of the first conjunct doesn't include the subject of the second conjoint, as can be seen in (16). On the other hand, same-subject conjunctions also don't indicate perfect co-reference, but rather that the subject of the coming clause contains the subject of the preceding clause. That contrast would be lost if the conjunction were deleted instead of the pronoun, and it is in that sense that the conjunction contains information the pronoun doesn't.

(16) Different-subject clause coordination with subjects of the same {+participant} person in both conjoints.
hẽn [=ka =aj a-hwêtri khikhre nhihwêt] [=**ka** karit =aj ∅-khãm mbra]
INFL [2_{nom} =PL 2_{abs}-all house build] [=and.DS.2 only.you =PL 3_{abs}-in live]
'All of you built the house, and only you (e.g. two) live there.'

In the same vein, in different-subject coordination, since agreement in the conjunction already determines the reference of the coming subject, the latter can be left out with no damage to recoverability. If we deleted the conjunction, though, the sentence would lack the element that carries the notion of different-subject coordination, which notion, as we just explained, is richer in set theoretical semantics than what is given away by name of the conjunction.

Deletion so far seems to be due to a dispreference for clitics in the same prosodic phrase (which dispreference I derive from independently necessary stress-related phonological constraints in section 4). We've already seen that when the relevant clitics are not in the same prosodic phrase no deletion happens. If deletion is indeed due to a dispreference for clitic sequences rather than, say, a dispreference for following a conjunction with a pronoun, we can predict that whenever the subject pronoun following the conjunction is not clitic, both that subject as well as the conjunction are pronounced. That prediction is borne out. No deletion occurs when a coordinating conjunction is followed by an ergative pronoun (which is a free form) (17-a) or an absolutive pronoun (which is a verbal prefix) (17-b). Note that the kind of agreement holding between different-subject conjunction and following nominative subject (examples (11-b), (14) and (15)) doesn't obtain (at least overtly) when the coming subject is of ergative or absolutive case. Instead, the conjunction appears with default 3rd person agreement.

(17) Deletion only happens when the pronouns are clitic
a. No deletion when the pronoun is *ergative* (accented)
(i) Different-subject "and" and ergative pronoun

[[i-ˈpôt] [=**nhy** ˈ**kare** ∅-khuru]] mã
[[1_{abs}-arrive] [=and.DS.3 2_{erg} 3_{abs}-eat]] FUT
'I will arrive and (then) you will eat (it)'

(ii) Same-subject "and" and ergative pronoun
[[i-ˈpôt] [=**ne** ˈ**ire** ∅-khuru]] mã
[[1_{abs}-arrive] [=and.SS 1_{erg} 3_{abs}-eat]] FUT
'I will arrive and (then) I will eat (it)'

b. No deletion when the pronoun is absolutive (preffix)

(i) Same-subject "and" and absolutive pronoun
[[ire ∅-ˈkhuru] [=**ne** **i**-ˈpôt]] mã
[[1_{erg} 3_{abs}-eat] [=and.SS 1_{abs}-arrive]] FUT
'I will eat and (then) I will arrive'

(ii) Different-subject "and" and absolutive pronoun
[[ire ∅-ˈkhuru] [=**nhy** **a**-ˈpôt]] mã
[[1_{erg} 3_{abs}-eat] [=and.DS.3 2_{abs}-arrive]] FUT
'I will eat and (then) you will arrive'

These examples might seem to suggest the alternative proposal whereby deletion is triggered by the nominative rather than by the clitic nature of the pronoun that follows a clitic conjunction. That theory is easy to disprove: we've already seen an example of a nominative pronoun that doesn't delete when preceded by a preceding different-subject conjunction, namely, the 3rd person nominative pronoun. 3rd person nominative pronouns differs from 1st and 2nd person pronouns by having null instead of clitic exponents. Compare (15) above with (18) below.

(18) No deletion when the pronoun is 3rd person nominative (null)
hẽn [=wa ˈpâj] [=**nhy** **∅** khu-ku]
INFL [$=1_{nom}$ arrive] [=and.DS.3 3_{nom} 3_{acc}-eat]
'I arrived and (then) he ate it'

Kĩsêdjê doesn't have non-nominative clitics, and therefore we can't test the prediction that such forms should pattern with nominative clitics in being deleted whenever preceded by coordinating conjunction.

The examples of different-subject coordination in (17-a-i) and (17-b-ii) had conjunctions that invariably displayed default 3rd person agreement, in mismatch with the person features on the following ergative and absolutive subjects. Systems of agreement that care about the case of the nominal they probe are widely found, and explaining how they function is beyond the scope of this paper.

Note furthermore that it is not the case that agreement is optionally possible in those scenarios. That is clearly demonstrated by the ungrammaticality of examples (19) and (20), minimal pairs of (17-a-i) and (17-b-ii) in which agreement is attempted.

(19) Different-subject "and" can't agree with ergative subject
* [[i-pôt] [=**ka** **kare** ∅-khuru]] mã
[[1_{abs}-arrive] [=and.DS.2S 2_{erg} 3_{abs}-eat]] FUT
'I will arrive and (then) you will eat (it)'

(20) Different-subject "and" can't agree with absolutive subject
* [[ire ∅-khuru] [=**ka** **a**-pôt]] mã
[[1_{erg} 3_{abs}-eat] [=and.DS.2S 2_{abs}-arrive]] FUT
'I will eat and (then) you will arrive'

There is one last question to answer before we can move on: why do Kĩsêdjê coordinating conjunctions in agreement with overt pronouns take the same shape as the pronouns themselves? I believe the answer to that question has nothing to do with the synchronic grammar of the language, but rather lies in the way anticipatory subject agreement must have developed in Kĩsêdjê. A commonly held view has agreement markers originate from the reanalysis of pronominal clitics (c.f. Givón 1975 for a general discussion of this hypothesis and Donohue 2003 for a historical reconstruction of the agreement system of the Skou language family from Papua New Guinea based on that hypothesis). Given that view, it is not surprising that anticipatory agreement with 1st and 2nd person employs the same morphological index as the nominative clitic pronouns. As for the marker *nhy*, inserted for 3rd person agreement, it has arguably evolved from an anterior use of *nhy* as a listing conjunction, as seen in example (21) below.

(21) Another use of 'nhy'
i-pãm=**nhy**, i-nã=**nhy**, ithõ=**nhy**, ithajê khôt=na=wa thẽ
my-father=and, my-mother=and, my-brother=and, these with=INFL=1_{nom} go
'My father and my mother and my brother, I went with them.'

In characterizing the Kĩsêdjê anticipatory agreement system as I do I am assuming that it is recent enough that the agreement markers for 1st and 2nd person haven't had time to suffer any phonological changes that could make them different from the 1st and 2nd person nominative pronouns. The evidence available seems to support my assumption: the distinction between same- and different-subject coordination and, consequently, the phenomenon of anticipatory subject agreement, aren't found, for instance, in the closely related language Mebengokre, (Andrés Salanova, personal communication).

2.2 Tolerated sequences of clitics

When assuming an optimality-theoretical framework, one can expected for there to be counterexamples to any given tendency displayed by a language. Unless such tendency constitutes the highest-ranked constraint in the language, there may be situations in which it is violated by an output that complies nonetheless with conflicting higher-ranked constraints. It is not surprising, therefore, that there are situations in which sequences of clitics are tolerated in Kĩsêdjê. Section 2.2.1 shows data concerning tolerated sequences of clitics constituted by a clitic inflection and a nominative clitic pronoun and section 2.2.2 describes data concerning tolerated sequences of clitics constituted by a nominative clitic and a clitic plural marker.

2.2.1 Inflection followed by nominative pronoun

As some readers might have noticed, a few of the examples used in this paper include clitics within the same prosodic phrase none of which gets targeted by deletion. As a matter of fact, there have been three examples this far. You may go back and try to spot them for yourself but, for your comfort, I've repeated them below as (22), (23) and (24) —originally (21), (14) and (12). The relevant clitics are boldfaced.

(22) i-pãm=nhy, i-nã=nhy, ithõ=nhy, ithajê 'khôt=**na**=**wa** thẽ
my-father=and, my-mother=and, my-brother=and, these with=INFL=1_{nom} go
'My father and my mother and my brother, I went with them.'

(23) [a'tha=**n**=**ka** khu-py] [=wa 'nhũm=**na**=**wa** tho Ø-kande mã?]
[that=INFL=2_{nom} 3_{acc}-get] [=AND.DS.1S who=INFL=1_{nom} it.with 3_{acc}-treat FUT]
'You got that and who will I treat with it for you?'

(24) [Canarana 'mã=**n**=**ka** pâj] [=ne wâtâ ka'põrẽ=**n**=**ka** s-arẽ?]
[Canarana to=INFL=2_{nom} arrive] [=and.SS what language=INFL=2_{nom} 3_{acc}-say]
'You went to Canarana and what language you spoke there?'

The tolerated sequences of clitics are an inflectional particle followed by a nominative pronoun. What makes this sequence different from the intolerable sequence formed by a coordinating conjunction followed by a nominative pronoun? Since the second clitic of both sequences is the same (the nominative pronoun) we can rest assured that the relevant difference between the two sequences has to lie with the first clitic, that is, the difference has to be between coordinating conjunctions and inflectional markers.

Phonological differences are not relevant here. There are even scenarios in which the sequences are homophonous —see (25) and (26) below. In spite of this homophony, deletion still only applies to the sequence conjunction+pronoun. Note that homophony here stems from the deletion of the last vowel of same-subject conjunction *ne* and inflectional particle *na*. That happens whenever those particles encliticize to a vowel-final word.

(25) hẽn=wa amũ 'thẽ=**n**=~~**wa**~~ s-õmu
INFL=1_{nom} there go=and.SS=~~1_{nom}~~ 3_{acc}-see
'I went there and saw it.'

(26) a-ka'mby=**n**=**wa** s-õmu
your-brother=INFL=1_{nom} 3_{acc}-see
'It was your brother that I saw.'

There is a very clear difference between inflectional particles and coordinating conjunctions in terms of their featural constitution, though, which is related to how deletion works in each case. Whereas inflectional particles are composed only of interpretable

lexical features, the conjunction's features are copies (obtained through agreement) of the features of the following nominative pronoun (plus whatever extra features the conjunction had before agreement). So, when a nominative pronoun following a conjunction suffers deletion, its features are still being realized in the conjunction, whereas if the nominative pronoun following an inflectional clitic were deleted, its features would be simply lost.

2.2.2 Nominative pronouns followed by plural markers

In section 2.1.1 I was careful not to employ any examples featuring a plural clitic marker adjacent to a nominative clitic pronoun. The examples I used then are repeated below as (27-a) and (27-b) —from original examples (1) and (2-a). If the adverb *kê*, which in in (27-a) and (27-b) intervenes between the nominative clitic and the plural marker, is left out, as in (28), those clitics enter in contact. That, however, does not result in the deletion of either.

(27) Examples carefully crafted so as not to allow clitics to clash

a. ˈhẽn=wa ˈkê =**aj** Ø-ˈkhãm =**aj** sõmu
INFL=1_{nom} also =PL 3_{abs}-in =PL 3_{acc}-see
'We also saw them there'

b. ˈhẽn=wa ˈkê =**aj** s-õmu
INFL=1_{nom} also =PL 3_{acc}-see
'We also saw them/We also saw him/I also saw them'

(28) Allowing clitics to clash

a. ˈhẽn=wa =**aj** sõmu
INFL=1_{nom} =PL 3_{acc}-see
'I saw them/We saw him/We saw them'

The same reason why the sequence Inflectional Clitic + Nominative Clitic was tolerated seems to be at play here. The nominative clitic and the plural clitic don't share features, and it would be impossible, after deletion of one of them, for the survivor's features to bear correspondence to both clitics' original features.

That doesn't mean the dispreference for sequences of unstressed syllables within a prosodic phrase isn't active in this context. When word dislocation is an option, the nominative pronoun can't be ever left adjacent to the plural marker. Take a situation where the dispreference is not active, for instance, when the subject of the sentence is ergative (which is not a clitic). In that situation, the position of the plural clitic is at its freest. It can sit at either side of the pronoun (29) or it can also be separated from it by an adverb such as *kê* 'also' (30).

(29) Ergative pronouns adjacent to the plural marker.

a. **aj**=ˈire ˈkê thep kuru mã
PL=1_{erg} also fish eat FUT
'Also we will eat fish.'

b. iˈre =**aj** ˈkê thep kuru mã
1_{erg} =PL also fish eat FUT
'Also we will eat fish.'

(30) Ergative pronoun separated from plural marker by adverb *kê*
ˈire ˈkê =**aj** thep kuru mã
1_{erg} also =PL fish eat FUT
'We will eat also fish'

When the subject is nominative, only one of those three positions is ever instantiated (31). Remember that in principle the nominative pronoun *could* be adjacent to the plural mark, as it is in example (28).

(31) Nominative pronouns have to be separated from plural markers when possible.

a. ˈhẽn=wa ˈkê =**aj** twâ
INFL=1_{nom} also =PL bathe
'We've already bathed.'

b. *hẽn=wa aj kê twâ

I assume this kind of word order change is purely phonological (that is, I assume the different positions the plural marker can appear at don't correspond to different positions in the input). Given this assumption, all of the locations instantiated in (29) and (30) are in principle available for plural markers under all circumstances. If only one of those positions is ever instantiated when the subject is nominative, as we've seen, it is because that is the position which better complies with Kĩsêdjê's dispreference for clitic sequences. The candidate that places the plural marker in that position is optimal with regards to the Kĩsêdjê dispreference for sequences of unstressed syllables. Deletion isn't possible in this case. If no adverb is available to intervene between a nominative and a plural clitic, and only in that case, will the clitics be left adjacent, as in (28).

3 Stress placement in Kĩsêdjê

The dispreference for adjacent clitics I've documented in the previous sections can be derived from a dispreference against sequences of unstressed syllables. The latter dispreference is independently necessary to account for stress placement in Kĩsêdjê, as I show is this section.

Kĩsêdjê's lexicon contains stressed and unstressed items, the latter being the particles I have been calling *clitics*. Stress is iambic, with main stress falling on the last syllable of stressed words (32). Clitics are phrased together with a neighboring stressed word but, as exemplified by (33), don't bear either primary or secondary stress.

(32) ˌamtôˈtxi
rat
'a/some/the rat(s)'

(33) ˌamtôˈtxi =thõ =ra
rat =a =NOM
'a rat (nom)'

The stress pattern of Kĩsêdjê can be accounted for as the interaction of the three constraints defined in (34) below. NoStress$_{\text{clitics}}$ is a constraints lexically indexed to words in the clitic class and militates against attributing any kind of stress to them. The class of the clitics receives therewith a straightforward definition: it's the class of the words lexically indexed to the NoStress$_{\text{clitics}}$ constraint. MainStressLast militates in favor of stressing the last syllable of all lexical items. Since clitics are never stressed, NoStress$_{\text{clitics}}$ must outrank MainStressLast. NoStress$_{\text{clitics}}$ must also outrank Lapse (Green and Kenstowicz, 1995), or we would expect clitics to be stressed whenever that would avoid a gap. Example (33) demonstrates that this is not the case. Finally, there doesn't seem to be any evidence for ranking MainStressLast and Lapse with respect to one another.

(34) Kĩsêdjê Stress-Assigning Constraints
a. NoStress$_{\text{clitics}}$: Don't stress clitics.
b. MainStressLast: Stress the last syllable of all lexical item.
c. Lapse: Don't allow sequences of unstressed syllables.

Tableau (35) demonstrates stress assignment for (33). The winning candidate —(a)— entirely complies with NoStress$_{\text{clitics}}$, but in order to do so it must violate MainStressLast twice (once for each clitic, since their last syllable isn't stressed) and Lapse once (because the sequence of unstressed clitics creates a gap). The candidate that obeys MainStressLast —(b)— needs to stress both clitics in order to do so, which counts as two violations of higher-ranked NoStress$_{\text{clitics}}$ and, finally, the candidate that obeys Lapse —(c)— needs to stress the last clitic in order to do so, incurring in a violation to NoStress$_{\text{clitics}}$.

(35) Stress assignment for (33)

amtôtxi thõ$_{\text{clit}}$ ra$_{\text{clit}}$	NoStr$_{\text{CLIT}}$	MnStrLast	Lapse
a. ☞ ˌamtôˈtxi thõ$_{\text{clit}}$ ra$_{\text{clit}}$		**	*
b. ˌamtôˈtxi ˈthõ$_{\text{clit}}$ ˈra$_{\text{clit}}$	*!*		
c. ˌamtôˈtxi thõ$_{\text{clit}}$ ˈra$_{\text{clit}}$	*!	*	

Though there can be arguments to prefer a foot-based account of stress assignment in general, the perhaps more outdated account I use here has the advantage of requiring fewer constraints. On the other hand, I suppose it would be a straightforward matter to adapt the account to the Kĩsêdjê phenomenon that I propose in the next section to a foot-based account of stress.

4 Deriving clitic deletion

Since the constraints listed in (34) are independently necessary to account for stress placement in Kĩsêdjê, it would be a welcome result if they could also be made responsible for Kĩsêdjê's dispreference for clitic sequences described in section 2. We can achieve that by properly ranking the stress-assigning constraints given in (34) with respect to the morphological insertion constraints MAX-M(FS) and MAX-M(F) defined by Wolf (2008). His definitions are copied in (36) and discussed in what follows.

(36) Morphological faithfulness constraints
   a. MAX-M(F): For every instance φ of the feature F at the *morpheme level*, assign a violation-mark if there is not an instance φ' of F at the *morph level*, such that $\varphi \mathfrak{R} \varphi'$.
   b. MAX-M(FS): For every Feature Structure (FS) Φ at the *morpheme level*, assign a violation-mark if there is not an FS Φ' at the *morph level*, such that $\Phi \mathfrak{R} \Phi'$.

In Wolf's system, these constraints evaluate output representations consisting of morphs (which representation he calls *morph level*) with respect to input representations consisting of morphemes (which he calls the *morpheme level*). The morphemes constituting input representations are bundles of morphosyntactic features φ, but no phonological features. Wolf calls these bundles feature structures Φ. The morphs constituting output representations are pairings between feature structures and phonological forms. $\mathfrak{R}$ is the correspondence relation. Note that since only morphs have phonological features, there is no way phonological faithfulness can compare morphs and morphemes. The only domain of application of phonological faithfulness constraints in Wolf's system are candidate chains. Since we don't need to have resource to candidate chains to account for the phenomenon at hand, the only kind of phonological constraints discussed here will be markedness constraints.

Before we discuss how to derive Kĩsêdjê's dispreference for clitic sequences through the interaction of the morphological constraints proposed by Wolf (2008) with the stress-related constraints introduced in the last section, we need to find out exactly what morphosyntactic features are involved in those derivations. That is the topic of section 4.1. In section 4.2 I will detail my proposal of how sentences formed by narrow syntax are chucked up into pieces the size of prosodic phrases which are then input to morphological derivation and, finally, sections 4.3 and 4.4 exemplify the derivation of situations where clitic deletion obtains and those where sequences of clitics are tolerated.

4.1 The Features on Conjunctions

As described in section 2.1.2, coordinating conjunctions agree with nominative subjects following them. When no nominative subject is found, agreement fails, and default agreement, homophonous with 3rd person agreement, is inserted. I will illustrate how this system works with some examples.

In order to make the exposition clearer, for now I will be employing only examples that *don't* feature deletion. Example (14), repeated below as (37), will illustrate the derivation of sentences with nominative participant subjects in the clause following the conjunction. The derivation of sentences with nominative 3rd person subjects in the clause following the conjunction will be illustrated with examples (18), repeated below as (38). The derivation of sentences with non-nominative subjects in the clause following the pronoun will be illustrated with example (17-a-ii), repeated below as (39).

(37) Anticipatory agreement with participant nominative subjects
[atha=n=ka khu-ˈpy] [=**wa** ˈnhũm=na=**wa** tho Ø-kande mã?]
[that=INFL=2_{nom} 3_{acc}-get] [=and.DS.1st who=INFL=1st it.with 3_{acc}-treat FUT]
'You got that and who will I treat with it for you?'

(38) Anticipatory agreement with 3st person nominative subjects
hẽn [=wa ˈpâj] [=**nhy** **Ø** khu-ku]
INFL [=1_{nom} arrive] [=and.DS.3rd 3rd 3_{acc}-eat]
'I arrived and (then) he ate it'

(39) (Failed) anticipatory agreement with non-nominative subjects
[[i-ˈpôt] [=**nhy** ˈ**kare** ∅-khuru]] mã
[[1_{abs}-arrive] [=and.DS.3^{rd} 2^{nd} 3_{abs}-eat]] FUT
'I will arrive and (then) you will eat (it)'

Different-subject conjunctions enter the derivation unvalued for the ϕ-features, as in (40), (41) and (42) below. For ease of exposition I am presenting the sentences in their final form, ignoring the fact that, if we assume that derivation proceeds by phases (Chomsky, 2001), much of the upper structure will actually not have been merged yet at the derivational step when anticipatory subject agreement happens.

(40) Derivation with participant nominative subjects
[atha=n=ka khu-py] [=**?** nhũm=na=**wa** tho ∅-kande mã?]
[that=INFL=2_{nom} 3_{acc}-get] [=and.DS.***uϕ*** who=INFL=1^{st} it.with 3_{acc}-treat FUT]
'You got that and who will I treat with it for you?'

(41) Derivation with 3^{st} person nominative subjects
hẽn [=wa pâj] [=**?** **∅** khu-ku]
INFL [=1_{nom} arrive] [=and.DS.***uϕ*** 3^{rd} 3_{acc}-eat]
'I arrived and (then) he ate it'

(42) Derivation with non-nominative subjects
[[i-pôt] [=**?** **kare** ∅-khuru]] mã
[[1_{abs}-arrive] [=and.DS.***uϕ*** 2^{nd} 3_{abs}-eat]] FUT
'I will arrive and (then) you will eat (it)'

The ϕ-probes on the conjunctions search the lower structure and match the ϕ-features on the following subject, if it is nominative. As as result of matching, they copy the subject's ϕ-features, as in (43) and (44) below.

(43) Valuing with participant nominative subjects
'You got that and who will I treat with it for you?'
[atha=n=ka khu-py] [=**wa** nhũm=na=**wa** tho ∅-kande mã?]
[that=INFL=2_{nom} 3_{acc}-get] [=and.DS.1^{st} who=INFL=1^{st} it.with 3_{acc}-treat FUT]
└──────────────────┘

(44) Valuing with 3^{st} person nominative subjects
'I arrived and (then) he ate it'
hẽn [=wa pâj] [=**nhy** **∅** khu-ku]
INFL [=1_{nom} arrive] [=and.DS.3^{rd} 3^{rd} 3_{acc}-eat]
└──┘

When the following subject is not nominative, as in (42), the ϕ-probe in the conjunction can't find a suitable goal, and as a result agreement fails and default 3^{rd} person features are inserted onto the probe.

(45) Default valuing with non-nominative subjects
'I will arrive and (then) you will eat (it)'
[[i-pôt] [=**nhy** **kare** ∅-khuru]] mã
[[1_{abs}-arrive] [=and.DS.3^{rd} 2^{rd} 3_{abs}-eat]] FUT

4.2 Domain of Evaluation

An important issue for the derivations I'm proposing next is exactly how big a chunk of sentence is sent to morphology for evaluation. From the description of the Kĩsêdjê clitic dispreference given in section 2, it is clear that such chunk is bigger than a word. Given the constraints I'm about to propose, that chunk will have to be smaller than the whole sentence, though. In principle it would seem like the simplest choice would be to postulate a window that fits exactly one stressed word plus any following clitics, but in two circumstances the input to morphological constraints will actually contain more than one stressed word —those will be the derivations represented in the next section in tableaux (72) and (54).

The domain of evaluation of morphological constraints I will be assuming is a prosodic phrase (Selkirk, 1986). Selkirk proposes that prosodic phrase boundaries are defined in the narrow syntax, either as the left edges of maximal projections, or as their right edge. That parameter is language-specific. In Kĩsêdjê, prosodic phrase boundaries seem to be marked at the left edge of

syntactic phrases with overt specifiers. One way of diagnosing prosodic phrase boundaries is as the positions where pauses would be natural. Examples such as (46-a) and (46-b) constitute evidence that Kĩsêdjê marks prosodic phrase boundaries at least at the left edge of PPs and DPs. In (46-a) there can be a pause before the PP or between the PP and the DP. That is so because the PP isn't embedded in the NP, and therefore their left edges don't coincide. Contrast that with (46-a). Here, since now the PP *is* embedded in the NP, their left edges are superimposed, and consequently there is no prosodic phrase boundary between PP and head noun.

(46) Positions where pauses can be inserted

a. mẽndijê=ra (#) [$_{PP}$ ajmẽn mã] (#) [$_{NP}$ ngere] jarẽ
women=NOM each-other to song teach
'The women taught songs to each other.'

b. mẽndijê=ra (#) [$_{NP}$ [$_{PP}$ ajmẽn ndo] (*#) ngere] jarẽ
women=NOM each-other with song teach
'The women taught songs about each other.'

In section 2 I have shown that whenever clitics whose features were in a set-subset relation are adjacent, the clitic containing the fewest features suffers deletion. I've also shown that when those clitics were separated by intervening material big enough, deletion didn't happen. The situations where deletion didn't happen can now be understood as exactly those cases in which the feature-sharing clitics were situated in different prosodic phrases. That was accomplished by inserting a topic or a PP between the clitics, but our account predicts the existence of situations where adjacent feature-sharing clitics could actually not be targeted for deletion. That would happen if, though adjacent, those clitics were separated by a prosodic phrase boundary. That prediction is borne out, as example (47) shows. The rightmost plural clitic in that example is contained in a PP. At the left edge of the PP there is a prosodic phrase boundary, which separates that clitic from the leftmost plural clitic. Since they are in separate prosodic phrases, those clitics are fed into morphological derivation in separate turns, and therefore the right conditions for deletion don't obtain.

(47) Adjacent plural clitics in different prosodic phrases
'hẽn =ka =**aj** (#) [$_{PP}$ **aj**='i-ro] amba?
INFL =2_{nom} =PL PL=1_{abs}-with think
'Did you guys miss us?'

4.3 Deriving Deletion

The ranking that derives the Kĩsêdjê dispreference for sequences of clitics is MAX-M(F) ≫ NOSTRESS$_{CLITICS}$ ≫ MAINSTRESSLAST, LAPSE ≫ MAX-M(F). Let's observe how that ranking derives deletion in the situation where a plural marker is adjacent to another plural marker in the input (described in section 2.1.1). I'll illustrate that scenario with example (2-a), repeated below as (48-a). As discussed in section 2.1.1, such example is structurally ambiguous. Here I'm restricting myself to the underlying structure where both arguments are plural. As I argued in that section, the other meanings actually correspond to underlying structures with a single plural marker in them, and therefore don't feature deletion and don't interest us here.

(48) Intolerable sequence of PL + PL

a. 'hẽn=wa 'kê =**aj** sõmu
INFL=1_{nom} also =PL 3_{acc}-see
'We also saw them'

b. *hẽn=wa kê =**aj** =**aj** sõmu
INFL=1_{nom} also =PL =PL 3_{acc}-see

(49) Input representation of (48-a)
'Infl' {1^{st}} 'also' {pl} {pl} {3^{rd}} 'see'
'We also saw them'

The input representation of (48-a) is (49) and the derivation of the relevant prosodic phrase is represented in tableau (50). Candidates (b) and (c), which strive to comply with LAPSE, are forced to violate higher-ranked constraint NOSTRESS$_{CLITICS}$, whereas the candidate that complies with NOSTRESS$_{CLITICS}$ —(a)— violates LAPSE. The latter would be a winning candidate, were it not possible to obey both LAPSE as well as NOSTRESS$_{CLITIC}$ by incurring in a violation to a constraint which is ranked lower than both, MAX-M(FS). That is the strategy candidate (d) adopts. This candidate maintains a single plural feature which bears correspondence to both plural features in the input (correspondence relations are noted with subscript numbers). That is enough to satisfy higher-ranked constraint MAX-M(F). Note that the candidate that fares best with respect to stress related constraints —(e)— violates MAX-M(F) because it fails to represent the plural features present in the input at all.

(50) Derivation of (48-a)

		‘also’$_1$	{pl$_2$}	{pl$_3$}	Max-M(F)	NoStr$_{clt}$	MnStrLast	Lapse	Max-M(FS)
a.		‘also’$_1$ ˈkê	{pl$_2$} aj$_{clit}$	{pl$_3$} aj$_{clit}$			**!	*	
b.		‘also’$_1$ ˈkê	{pl$_2$} aj$_{clit}$	{pl$_3$} ˈaj$_{clit}$		*!	*		
c.		‘also’$_1$ kê	{pl$_2$} ˈaj$_{clit}$	{pl$_3$} aj$_{clit}$		*!	**		
d.	☞	‘also’ ˈkê	{pl$_{2,3}$} aj$_{clit}$				*		*
e.		‘also’$_1$ ˈkê			*!*				**

Let’s now look at the derivation of a sentence in which a subject clitic is deleted under adjacency to a different-subject coordinating conjunction (51). In particular, the stage of the derivation of (51) that is input to morphological computation is (52), in which syntactic agreement between the different-subject conjunction and the following subject has already happened.

(51) Example of the intolerable sequence conjunction clitic + nominative clitic
hẽn [=wa pâj] [=**ka** =~~ka~~ khu-ku]
Infl [=1$_{nom}$ arrive] [=and.ds.2nd =~~2nd~~ 3$_{acc}$-eat]
‘I arrived and (then) you ate it.’

(52) Point of the derivation at which morphological constraints are evaluated
‘Infl’ [{1st} ‘arrive’] [{and.ds.2nd } {2nd } {3rd} ‘eat’
‘I arrived and (then) you ate it.’ └──────┘

Tableau (53) gives the derivation of the relevant prosodic phrase of (52). Candidates (a), (b) and (c) are completely faithful to the morphological faithfulness constraints Max-M(F) and Max-M(FS). Stress assignment constraints only would dictate that the winner among them would be (a), since it complies with the higher-ranked stress-related constraint, NoStress$_{clitics}$. However, this candidate is in competition with (d), a candidate which manages to obey a further stress-related constraint, Lapse, by violating the lowest ranked constraint in the tableau, Max-M(FS). It can afford to do so by deleting the feature structure of the clitic pronoun, whose individual features are nonetheless realized in a surviving feature structure. There is no violation to higher-ranked Max-M(F), since the features in the realized feature structure stand in perfect correspondence to the features of both feature structures present in the input. Only the candidate that over-deletes in order to be completely compliant with the stress-related constraints —(f)— violates higher-ranked Max-M(F).

(53) Derivation of (52)

		‘arrive’$_1$	{‘and.ds’$_2$, 2$^{nd}{}_3$}	{2$^{nd}{}_4$}	Max-M(F)	NoStr$_{clt}$	MnStrLast	Lapse	Max-M(FS)
a.		‘arrive’$_1$ ˈpâj	{‘and.ds’$_2$, 2$^{nd}{}_3$} ka$_{clit}$	{2$^{nd}{}_4$} ka$_{clit}$			*!*	*	
b.		‘arrive’$_1$ ˈpâj	{‘and.ds’$_2$, 2$^{nd}{}_3$} ka$_{clit}$	{2$^{nd}{}_4$} ˈka$_{clit}$		*!	*		
c.		‘arrive’$_1$ pâj	{‘and.ds’$_2$, 2$^{nd}{}_3$} ˈka$_{clit}$	{2$^{nd}{}_4$} ka$_{clit}$		*!	**		
d.	☞	‘arrive’$_1$ ˈpâj	{‘and.ds’$_2$, 2$^{nd}{}_{3,4}$} ka$_{clit}$				*!		*
e.		‘arrive’$_1$ ˈpâj		{2$^{nd}{}_{3,4}$} ka$_{clit}$	*!		*		*
f.		‘arrive’$_1$ ˈpâj			*!**				**

Note that, as we anticipated in section 2.1.2, theory internal-reasons lead us to posit that deletion targets the pronoun rather than the conjunction, even though they are homophones. Candidate (e), which deletes the conjunction instead, violates Max-M(F). That is due to the fact that by only realizing the features present in the pronoun, the conjunction-specific features lack

correspondents in the output, in violation of Max-M(F).

For the sake of clarity, the tableau above had to gloss over a few candidates. For instance, I didn't consider the candidate that avoids violations to stress-related constraints by moving one of the clitics across an adjacent non-clitic word. It could seem like in order to rule out such candidate I would have to include in my tableaux a constraint militating against dislocation. That is not necessary, though. Max-M(FS) is low-ranked enough that deletion is always an affordable option, as we can see in tableau (54) (W stands for a non-clitic word). Candidate (a) tries to be as faithful to the input as possible and in order to do so violates MainStressLast twice and Lapse once. Candidate (b) dislocates one of the violating clitics across an adjacent non-clitic word and fares a little better: it manages to comply with Lapse. However, the candidate that features deletion –(c)– ends up containing one fewer violation of MainStressLast besides also complying with Lapse. It does that by deleting one clitic, which only violates the lowest-ranked constraint in the tableau, Max-M(FS).

(54) Discarding candidates that dislocate clitics

		'arrive'$_1$	{'and.ds'$_2$, 2nd$_3$}	{2nd$_4$}	'w'$_5$	Max-M(F)	NoStr$_{CLT}$	MnStrLast	Lapse	Max-M(FS)
a.		'arrive'$_1$ 'pâj	{'and.ds'$_2$, 2nd$_3$} ka$_{clit}$	{2nd$_4$} ka$_{clit}$	'w'$_5$ 'W			**!	*	
b.		'arrive'$_1$ 'pâj	{'and.ds'$_2$, 2nd$_3$} ka$_{clit}$	'w'$_5$ 'W	{2nd$_4$} ka$_{clit}$			**!		
c.	☞	'arrive'$_1$ 'pâj	{'and.ds'$_2$, 2nd$_{3,4}$} ka$_{clit}$		'w'$_5$ 'W			*		*

A LinearOrder constraint might be relevant for computations involving clitics in languages clitics do move around in order to comply with higher-ranked constraints. It might be useful, for instance, for an account of Romance clitic movement, though I don't intend to work out the details of such a proposal here.

In order to discuss deletion in different-subject contexts, I will first need to say something about the syntax of *switch-reference marking*. Jacobsen (1967), who coined the term "switch-reference", describes it as follows: "It consists simply in the fact that a switch in subject or agent (...) is obligatorily indicated in certain situations by a morpheme, usually suffixed". Kĩsêdjê coordinating conjunctions bear that role. A complete discussion of the literature on switch-reference (which includes Finer 1984, Stirling 1993 and Keine 2010) would take us too far afield. For our current purposes, though, we don't need to fully understand how the mechanics of switch-reference operates. We only need to have an clear idea about what the final representation input to morphology is.

In (55), the conjunction =*ne* indicates co-indexation between the subjects of the conjoints (one of which corresponds to a pronoun that gets deleted before the end of the day). Since the subjects themselves are pronouns, binding principle B states they can't be bound. No problem there: they are in different clauses, and therefore in different binding domains. The question is, how do they come to be coindexed?

(55) 'hẽn=wa 'pâj=ne =~~wa~~ s-õmu
INFL=1$_{nom}$ arrive=and.SS =~~1$_{nom}$~~ 3$_{acc}$-see
'I arrived and saw it.'

I will adopt a version of Finer's (1985) theory, where it is the switch-reference markers that act as intermediates for coindexation. I will assume that, as part of that process, switch-reference markers come to agree with the subjects they relate. In Kĩsêdjê that agreement is overtly expressed on different-subject conjunctions —as in (51)—, and I propose that agreement obtains covertly between same-subject conjunction and following subject —as in (56), my regloss of (55).

(56) 'hẽn=wa 'pâj=ne =~~wa~~ s-õmu
INFL=1$_{nom}$ arrive=and.SS.1st =~~1st~~ 3$_{acc}$-see
'I arrived and saw it.'

Agreement on same-subject markers, whose covert existence I'm postulating for Kĩsêdjê, exists overtly in Kanite (Trans-New Guinea, Papua New Guinea, McCarthy 1965) and Shipibo (Panoan, Peru, Baker 2013) as can be seen in examples (57) —the boldfaced agreeing same-subject markers could in principle be misidentified as subject agreement markers, if comparison with proper subject agreement suffixes (in italics), didn't rule that possibility out – and (58) —which agrees in case with the subject of the following clause.

(57) Agreement between SS marker and coming subject in number in Kanite

a-ke-**no** ne-to-**no** v-*i*-e
it-see-**3s** eat-fist-**3s** go-*3s*-indicative
'Having seen it and having eaten, he went.'

(58) Agreement between SS marker and coming subject in case in Shipibo

a. Yapa payot-a pi-**xon**-ra, nokon shino-n e-a mawa-xon-ke.
fish spoil-PTPL eat-**SS.ERG**-PRT my.GEN monkey-ERG me-ABS die-APPL-PRF
'Having eaten spoiled fish, my monkey died on me.'

b. Saweti oin-**ax**-a, Rosa ja kee-nai.
Dress see-**SS.ABS**-PTL Rosa it want-IMPF
'Her seeing the dress, Rosa wanted it.'

The stage of (55)/(56) input to morphology is (59). Tableau (60) contains the derivation of the relevant prosodic phrase.

(59) 'INFL' {1st} 'arrive {'and.ss'.1st } {1st } {3rd} 'see'
'I arrived and saw it.'

Candidates (a), (b) and (c) strive to comply with morphological faithfulness MAX-M(FS), that is to say, they don't feature deletion. Among them, (a) fares better, since it avoids violating the high-ranked stress-related constraint $\text{NOSTRESS}_{\text{CLITICS}}$. In order to do so it has to incur in three violations to other constraints: the sequence of unstressed clitics creates a gap, in violation of LAPSE, and leaving the clitics unstressed creates two violations to MAINSTRESSLAST. Candidates (b) and (c) try to comply with LAPSE, but every way to do so involves accenting a clitic, in violation to higher-ranked $\text{NOSTRESS}_{\text{CLITICS}}$. Deletion of the clitic pronoun —as in candidate (d)— only violates the lowest ranked constraint in the tableau, MAX-M(FS), and results in one fewer violation to MAINSTRESSLAST, besides complete compliance with LAPSE. It also doesn't incur in violations to MAX-M(F), since the features in the deleted terminal (φ-features) have correspondents in the surviving terminal. If deletion proceeded to other way around —as in (e)—, MAX-M(F) would be violated. That is so because some of the features of the deleted conjunction can't find correspondents in the surviving feature structure. Finally, deleting all clitics, though allowing maximal compliance with stress-related constraints, will violate MAX-M(FS) and MAX-M(F), the latter being the highest-ranked constraint in the tableau.

(60) Derivation of (55)

		'arrive'$_1$	{'and.ss'$_2$, 1st$_3$}	{1st$_4$}	MAX-M(F)	$\text{NOSTR}_{\text{CLT}}$	MNSTRLAST	LAPSE	MAX-M(FS)
a.		'arrive'$_1$ 'pâj	{'and.ss'$_2$, 1st$_3$} ne_{clit}	{1st$_4$} wa_{clit}			*!*	*	
b.		'arrive'$_1$ 'pâj	{'and.ss'$_2$, 1st$_3$} ne_{clit}	{1st$_4$} 'wa$_{\text{clit}}$		*!	*		
c.		'arrive'$_1$ pâj	{'and.ss'$_2$, 1st$_3$} 'ne$_{\text{clit}}$	{1st$_4$} wa_{clit}		*!	**		
d.	☞	'arrive'$_1$ 'pâj	{'and.ss'$_2$, 1st$_{3,4}$} ne_{clit}				*!		*
e.		'arrive'$_1$ 'pâj		{1st$_{3,4}$} wa_{clit}	*!		*		*
f.		'arrive'$_1$ 'pâj			*!**				**

4.4 Deriving Tolerance

Now observe how those same constraints interact differently when evaluating inputs containing the tolerated sequence of clitics *Inflection + Nominative Pronoun*. I illustrate that situation with example (61). The stage of (61) that is input to morphology is (62). The derivation of the relevant prosodic phrase is shown in tableau (63).

(61) a-'pãm=**na**=**wa** s-õmu
your-father=INFL=1_{nom} 3_{acc}-see
'It was your father I saw.'

(62) 'your-father' {'Infl'} {1st} {3rd} 'see'

'It was your father I saw.'

Candidate (f), the only one that doesn't violate stress-related constraints, incurs in two violations to higher-ranked MAX-M(F). That candidate features radical deletion, which was never a successful strategy in previous tableaux. Candidates (d) and (e) adopt the same strategy as winning candidates from previous tableaux, which consisted in deleting one of the two clitics. However, unlike previous derivations, where the same features were present in multiple positions, here each of the clitics contains a unique set of features. That makes it impossible to delete one feature structure while still realizing its features on remaining feature structures in the output, and that is why candidates that attempt deletion violate high-ranked constraint MAX-M(F). Among the candidates that don't violate MAX-M(F), the system picks as a winner the one that complies better with stress-related constraints, namely, (a). Candidates (b) and (c) try different strategies in order to better comply with MAINSTRESSRIGHT and LAPSE, but either strategy forces them to violate $\text{NOSTRESS}_{\text{CLITICS}}$ and is therefore not viable.

(63) Derivation of (62)

		'your-father'$_1$	{Infl$_2$}	{1$^{st}{}_3$}	MAX-M(F)	NOSTR$_{CLT}$	MNSTRLAST	LAPSE	MAX-M(FS)
a.	☞	'your-father'$_1$ a'pãm	{Infl$_2$} na$_{clit}$	{1$^{st}{}_3$} wa$_{clit}$			*!*	*	
b.		'your-father'$_1$ a'pãm	{Infl$_2$} na$_{clit}$	{1$^{st}{}_3$} 'wa$_{clit}$		*!	*		
c.		'your-father'$_1$ ˌapãm	{Infl$_2$} 'na$_{clit}$	{1$^{st}{}_3$} wa$_{clit}$		*!	**		
d.		'your-father'$_1$ a'pãm	{Infl$_{2,3}$} na$_{clit}$		*!		*		*
e.		'your-father'$_1$ a'pãm		{1$^{st}{}_{2,3}$} wa$_{clit}$	*!		*		*
f.		'your-father'$_1$ a'pãm			*!*				**

In section 2.2.2 we have seen another sequence of clitics that isn't targeted by deletion: a nominative pronoun followed by a plural marker. In (64) below —copy of (28)— that situation obtains. Here I'm not considering the third meaning that can be attributed to (64), namely, 'We saw them'. That meaning corresponds to an underlying structure with two plural markers, whereas, for the sake of simplicity, the structure I'm interested in is the one containing only one plural marker, that is, one that doesn't feature deletion. That structure is (65).

(64) Copy of (28)
'hẽn=**wa** =**aj** sõmu
INFL=1$_{nom}$ =PL 3$_{acc}$-see
'I saw them/We saw him'

(65) Structure of (64)
{'Infl'} {1st} {pl} {3rd} 'see'
'I saw them/We saw him'

Tableau (66) shows the derivation of the relevant prosodic phrase of (65). Here any candidate that tries to better comply with the stress-related constraints by resorting to deletion will violate the highest-ranked constraint in the tableau, MAX-M(F). For candidate (f) that is simply due to the fact that both feature structures were deleted, and therefore their features don't find correspondents in the output. Candidates (d) and (e) delete only one of the clitics. Notwithstanding which clitic is deleted, though, the features on the remaining one can't bear correspondence to the original features on both clitics. The only viable candidates are those that are completely faithful to morphology —(a), (b) and (c). Any attempt to comply with MAINSTRESSLEFT and LAPSE implies in violations to higher-ranked MAX-M(F), and that's why candidates (b) and (c) are out. The winning candidate, (a), violate the constraints that (b) and (c) tried to comply with, but in so doing it can comply with higher-ranked $\text{NOSTRESS}_{\text{CLITICS}}$.

(66) Derivation of (64)

		‘Infl’$_1$	{1st$_2$}	{pl$_3$}	Max-M(F)	NoStr$_{CLT}$	MnStrLast	Lapse	Max-M(FS)
a.	☞	‘Infl’$_1$ ˈhẽn	{1st$_2$} wa$_{clit}$	{pl$_3$} aj$_{clit}$			*!*	*	
b.		‘Infl’$_1$ ˈhẽn	{1st$_2$} wa$_{clit}$	{pl$_3$} ˈaj$_{clit}$		*!	*		
c.		‘Infl’$_1$ hẽn	{1st$_2$} ˈwa$_{clit}$	{pl$_3$} aj$_{clit}$		*!	**		
d.		‘Infl’$_1$ ˈhẽn	{1st$_{2,3}$} wa$_{clit}$		*!		*		*
e.		‘Infl’$_1$ ˈhẽn		{pl st$_{2,3}$} aj$_{clit}$	*!		*		*
f.		‘Infl’$_1$ ˈhẽn			*!*				**

In spite of its function in stress assignment, the constraint Lapse hasn't played a decisive role in the derivation of clitic deletion. That is so because all violations to Lapse due to the retention of a clitic are invariably accompanied by violations to equally-ranked MainStressLast. Clitics are simply disprefered and will be deleted whenever possible.

Though Lapse doesn't matter in situations of clitic deletion, it plays an active role in the situations described at the end of section 2.2.2. Those were situations where clitic deletion was already blocked (because it would imply in violations to Max-M(F)) but, in order to better comply with Lapse, a specific word order was imposed on the output. Let me remind you of those cases:

In sentences with ergative subjects, there were three possible positions for a plural particle linked to the subject: preceding the subject pronoun (67-a), following it (67-b) or across an adverb from the subject pronoun (68). In a similar sentences with a nominative subject, only the latter position was available, that is, the plural marker had to be non-adjacent to the pronoun (69) —note that when no adverb is available, nominative pronoun and plural marker stay adjacent (70).

(67) Copy of (29)

a. **aj**=ˈire ˈkê thep kuru mã
PL=1$_{erg}$ also fish eat FUT
‘Also we will eat fish.’

b. iˈre =**aj** ˈkê thep kuru mã
1$_{erg}$ =PL also fish eat FUT
‘Also we will eat fish.’

(68) Copy of (30)
ˈire ˈkê =**aj** thep kuru mã
1$_{erg}$ also =PL fish eat FUT
‘We will eat also fish’

(69) Copy of (31)

a. ˈhẽn=**wa** ˈkê =**aj** twâ
Infl=1$_{nom}$ also =PL bathe
‘We've already bathed.’

b. *hẽn=**wa aj** kê twâ

(70) ˈhẽn=**wa** =**aj** twâ
Infl=1$_{nom}$ =PL bathe
‘We've bathed.’

That state of affairs is straightforwardly predicted by the constraint ranking I've employed to derive clitic deletion and retention. Except, now, Lapse plays a decisive role. Some considerations are in order before we jump onto the tableau. If all the word-order possibilities instantiated in the previous sentences with ergative subjects are also available for sentences with nominative subjects, the input form of (69) can in principle instantiate the same word order as (67-b). Such representation to (69) is represented below in (71).

(71) {‘Infl’} {1st} {pl} ‘also’ ‘bathe’
‘We've already bathed.’

Tableau (72) contains the derivation of the relevant prosodic phrase of (71). The winner —(a)— manages to be more compliant with Lapse by positioning the clitics in non-adjacent positions. The constraint violated by the winner, LinearOrder, is ranked lower than Lapse. That ranking is not ad-hoc. We've seen that when other considerations aren't at play (in particular, when no consideration of stress are at play), the plural marker can indeed be placed in multiple different positions —namely, the ones seen in examples (67-a), (67-b) and (68)—, fact that can be associated with a low-ranked LinearOrder constraint.

(72) Derivation of the relevant part of (71)

		‘Infl’$_1$	{1st$_2$}	{pl$_3$}	‘also$_4$’	MAX-M(F)	NOSTR$_{CLT}$	MINSTRLAST	LAPSE	MAX-M(FS)	LINORD
a.	☞	‘Infl’$_1$ ˈhẽn	{1st$_2$} wa$_{clit}$	‘also$_4$’ ˈkê	{pl$_3$} aj$_{clit}$			**			*
b.		‘Infl’$_{1st_2}$ ˈhẽn	{1st$_2$} wa$_{clit}$	{pl$_3$} aj$_{clit}$	‘also$_4$’ ˈkê			**	*!		

5 Conclusion

The Kĩsêdjê language displays a dispreference for stressless elements, which dispreference results in deletion of those elements whenever possible. I modeled that phenomenon as the interaction of the stress-assigning constraints with morphological faithfulness constraints. The same constraints that account for an iambic stress pattern in stress-bearing words account, in prosodic phrases, for deletion or, when the right conditions for deletion don't obtain, dislocation of those elements that can't bear stress.

As precondition for deletion the morphosyntactic features of the deleted stressless element had to be a subset of the features of a surviving element in the same prosodic phrase. The insertion of a single morph, the one with the most features, made it possible, through the expediency of multiple indexation, to keep perfect feature-correspondence between output and input.

The account I presented here constitutes empirical evidence for the application of the Optimal Interleaving theory (Wolf, 2008) to the derivation of larger-than-word morphological phenomena. In order to formulate my account, I formalized an aspect of that theory left unresolved in Wolf (2008), namely, the mechanism responsible for chunking up representations formed in narrow syntax into fragments that are input to morphophonological derivation.

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