

Constraining predicate fronting*

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Abstract

A number of languages have been argued to establish basic word order by means of VP-fronting (e.g. Kayne 1994; Massam 2001 and many others). However, many such analyses face an overgeneration problem: some material thought to be VP-internal never appears fronted and must apparently always be stranded (Chung 2005; Massam 2010). This paper first provides novel evidence for VP-fronting in an SVO language, the understudied Polynesian outlier Imere (Vanuatu), motivated by the placement of adverbial particles. But this analysis too suffers from the stranding problem: VP-fronting cannot drag along any DPs, PPs, and CPs. At the same time, Imere has a familiar SVO VP, with no evidence of vacating movements or an unorthodox base-generated structure. To solve this issue, I propose that VP-fronting is accompanied by distributed deletion (Fanselow and Ćavar 2001), driven by a constraint that favors realizing only the verb. I extend this analysis to eight other VP-fronting languages, from five different language families. In all these languages, what remains in the fronted VP is a structurally reduced dependent, like an adverbial particle or a determinerless object. Building on Clemens (2014, 2019), I adopt a constraint that requires dependents of a head that spell out in the same phase to remain adjacent, thus surviving distributed deletion.

1 Introduction

This paper addresses an overgeneration problem in the literature on word order variation. Many contemporary approaches adopt the idea that some languages employ an operation of VP-fronting to establish basic word order, particularly OVS and verb-initial languages (e.g. Kayne 1994; Pensalfini

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1995; Massam 2001; Pearson 2007; Coon 2010a; Kalin 2014). Massam (2001), for example, shows that a VP-fronting analysis provides an account of the correlation between VOS/VSO alternations in Niuean and the presence of the absolutive case marker *e*. An object without the case marker appears alongside the verb in VOS order (1a), while an object with absolutive *e* surfaces in VSO (1b).

(1) *VOS/VSO alternations in Niuean:*

- a. [VP Takafaga **ika** tūmau nī] a ia.
 hunt fish always EMPH ABS he
 ‘He is always fishing.’
- b. [VP Takafaga tūmau nī] e ia [DP **e tau ika**].
 hunt always EMPH ERG he ABS PL fish
 ‘He is always fishing.’ (Niuean; Massam 2001:157)

As Massam argues, this correlation follows if Niuean employs VP-fronting to establish verb-initial word order, but objects may move out of the VP to a case position before VP-fronting applies.

However, as discussed in particular by Chung (2005) and Massam (2010), this proposal runs into what I refer to as the “stranding problem”. Specifically, VP-fronting does not seem to be capable of dragging along all material that is typically thought of as part of the VP. In Niuean, PPs and CPs must be stranded by VP-fronting (2a–b).

(2) *PP and CP stranded by VP-fronting in Niuean:*

- a. Ne [VP tala aga] e ia e tala [PP **ke he tagata**].
 PST tell DIR ERG 3SG ABS story GOAL LOC man
 ‘S/he told the story to the man.’ (Massam 2010:274)
- b. [VP Gagoa foki nī] a au [CP **he hifo a Maka ki tahi**].
 sick also EMPH ABS 1SG C go.down ABS Maka to sea
 ‘I’m also sick of Maka going down to the sea.’ (Massam 1995:86)

Similar issues arise in the VP-fronting analyses of many verb-initial languages, such as Hawaiian, Samoan, Fijian (Oceanic), Ch’ol (Mayan), Gitksan (Tsimshianic), Tenetehára (Tupí-Guaraní), and Santiago Laxopa Zapotec (Zapotec) (e.g. Massam 2001, 2010; Coon 2010a; Duarte 2012; Medeiros 2013; Aranovich 2013; Collins 2017; Adler et al. 2018; Forbes 2018). In all of these languages, a VP-fronting account is motivated by the fact that some dependents of the verb can appear fronted

alongside it, but, at the same time, full DP objects as well as PP and CP complements must be stranded. We can stipulate that these elements all move out before VP-fronting applies, but it remains unclear what determines which dependents are stranded.¹

The first contribution of this paper is to present a novel case of the stranding problem in VP-fronting, drawn from the understudied Polynesian outlier Imere (Vanuatu). Unlike many other languages for which VP-fronting has been proposed, Imere word order is strictly SVO. I nonetheless argue that Imere's basic word order is established by VP movement to a clause-medial position. As in a number of verb-initial Austronesian languages, Imere has a set of adverbial particles that occur immediately after the verb and before the object (3a–c).

(3) *Postverbal adverbial particles in Imere:*

- a. ki tee-fano **kee**.
2SG.II FUT-go.SG NEG
'You will not go.'
- b. au fago-na **maruuruu** aia.
1SG wake.up-TR slowly 3SG
'I woke him/her slowly.'
- c. akoe ka k-ounu **nefe**a a-vai?
2SG DEP 2SG.NFUT-drink when PL-water
'When did you drink water?'

These adverbial particles occur in inverse order and take scope in a right-to-left fashion (Rackowski and Travis 2000; Massam 2010), as in examples like (4).

(4) *Postverbal particles in Imere are in inverse order:*

- mii-nufine rat [_{VP} kai-na **sorookina kee**] oofi.
DET.PL-woman 3NSG eat-TR all NEG yam
'The women didn't eat all the yams.'

Inverse order in this domain is surprising, because other postverbal material, such as objects and modifiers, is organized in a left-to-right fashion. I interpret the existence of inverse order before

¹As a consequence, a number of authors have developed alternative accounts or cast doubt on the idea that VP-fronting occurs at all in these languages (e.g. Chung 2005; Clemens 2014; Clemens and Coon 2018a).

direct order as evidence that Imere establishes basic word order through phrasal movement of the VP to a clause-medial position. In this view, adverbial particles are right-attached somewhere within the fronting constituent XP, but end up in front of objects because of movement.

This proposal presents another instance of the stranding problem discussed above. Imere VP-fronting must carry along adverbial particles, but leave all objects, PPs, and CPs. But Imere seems to provide no evidence for the vacating movements necessary to motivate a remnant movement analysis. In this paper, I argue instead that the stranding problem arises because VP-fronting in Imere and in other predicate fronting languages is accompanied by *distributed deletion* at PF (6), for an example such as (5), in the sense of Fanselow and Ćavar (2001).

(5) *Example Imere fronted Imere VP with adverbial particle:*

au fago-na maruuruu aia.
 1SG wake.up-TR slowly 3SG
 ‘I woke him/her slowly.’

(6) *Distributed deletion analysis of VP-fronting:*

au [XP fago-na aia maruuruu] ... [XP ~~fago-na aia maruuruu~~]

I adopt a model in which the interface between syntax and PF involves an Optimality-theoretic calculus, in which syntactic and phonological/prosodic pressures may cause departures from strict isomorphism (see also Clemens 2014, 2019; Bennett et al. 2016). I argue that distributed deletion is driven by a constraint that favors realizing only material in a moved phrase that carries the feature driving movement (see also Fanselow and Ćavar 2001), which I call *REALIZE GOAL*. To satisfy *REALIZE GOAL*, everything but the verb is usually deleted, if VP-fronting is driven by features of the main predicate (Massam and Smallwood 1997; Coon 2010a; Collins 2017).

To answer the question of why adverbial particles and other material can survive distributed deletion, I examine the stranding problem in eight other VP-fronting languages, from five different language families. In all of these languages, dependents that front with the verb are always either a structurally reduced noun or an adverbial particle, while full DPs, PPs, and CPs are uniformly stranded. Following Clemens (2014, 2019), I propose to understand the difference between fronted

and stranded elements as a distinction between phasal and non-phasal dependents of the verb. I adapt a constraint posited by Clemens, which requires that dependents of a head that spell out in the same phase remain adjacent, allowing them to escape the effects of distributed deletion. This analysis provides a straightforward solution to the stranding problem. No vacating movements are necessary and the placement of objects and modifiers in Imere can be treated just as in other SVO languages. Independent evidence for this approach comes from the scope of postverbal particles. Imere particles have a *discontinuous* scope domain, exactly as predicted by distributed deletion: they scope over other particles to the left, but over postverbal arguments and modifiers to the right.

The paper is structured as follows. Section 2 describes word order in the Imere verb phrase and shows that adverbial particles diagnose a phrasal constituent before all postverbal objects and modifiers, which I argue is the result of an operation of VP-fronting. In section 3, I develop a distributed deletion analysis of the stranding problem, motivated by the constraint *REALIZE GOAL*. Additional support for this approach comes from the discontinuous scope domain of postverbal particles, which reveals a familiar underlying order. Section 4 turns to the question of why some material survives distributed deletion. I present a comparison of the stranding problem in eight other VP-fronting analysis, from five different language families. Building on Clemens (2014, 2019; *cf.* Compton & Pittman 2010), I argue that non-phasal dependents appear next to the verb, because of an additional constraint that requires dependents of a head that spell out in the same phase to be adjacent. Independent evidence for the suggested difference in phasehood comes from Imere prosody and the distribution of a word minimality requirement. Finally, I discuss the implications of this approach for \bar{A} -movement of VPs.

2 Word order in the Imere verb phrase

In this section, I present evidence for VP-fronting in the SVO language Imere. At first glance, word order in the Imere verb phrase is similar to familiar SVO languages. However, as in a number of verb-initial Austronesian languages, Imere has a set of postverbal particles (e.g. Rackowski and Travis 2000; Massam 2010; Lynch et al. 2011), which appear immediately after the verb and before

objects. I demonstrate that these scope right-to-left, in inverse order (see also Rackowski and Travis 2000, Massam 2010), and are part of a phrasal constituent, presenting an apparent ordering paradox.

2.1 Arguments and modifiers in the Imere verb phrase

Imere is a Polynesian language spoken in Vanuatu by about 3,500 people. The language has two closely related varieties, one spoken in Mele village and one on Ifira island. Imere is the term used by speakers to refer to the Mele variety. Both languages together have been referred to by linguists as Mele-Fila, Fila-Mele, or Ifira-Mele. Speakers do not seem to use these names, so I will use the name Imere throughout. Previous linguistic work on Imere is limited. Some notes, a short grammar sketch, and a dictionary can be found in Clark (1975, 1998, 2002). All data here comes from elicitation sessions with a native speaker and a field methods class.

Imere in many respects resembles familiar head-initial SVO languages. Neutral word order is strictly SVO, as demonstrated by the examples in (7a–c). In most sentence types, the only deviations from this order arise through the availability of topicalization, as in (7d).

(7) *Imere is SVO:*

- a. to-koori kaara tarimoa.
SG-dog chase rat
'The dog chased the rat.'
- b. *kaara to-koori tarimoa.
chase SG-dog rat
'The dog chased the rat.'
- c. *kaara tarimoa to-koori.
chase rat SG-dog
'The dog chased the rat.'
- d. to-koori tarimoa kaara.
SG-dog rat chase
'The dog, the rat chased.'

The placement of postverbal arguments relative to modifiers is also reminiscent of other SVO systems. Adverbs like *naanafi* ('yesterday') or *saaraleaji* ('always') appear after objects (8a–d).

(8) *Adverbs must follow objects in Imere:*

- a. mii-nufine rat kai-na oofi **naanafi**.
AFF.PL-woman 3NSG eat-TR yam yesterday
'The women ate yams yesterday.'
- b. *mii-nufine rat kai-na **naanafi** oofi.
AFF.PL-woman 3NSG eat-TR yesterday yam
'The women ate yams yesterday.'
- c. mateu ma noko kamo-a mai a-kai **saraleaji**.
1EXCL.PL 1EXCL.NSG HAB bring-TR DIR.SP PL-food always
'We always bring food.'
- d. *mateu ma noko kamo-a mai **saraleaji** a-kai.
1EXCL.PL 1EXCL.NSG HAB bring-TR DIR.SP always PL-food
'We always bring food.'

Similarly, DP objects appear before PP modifiers or arguments in neutral order (9a–b).²

(9) *PPs follow objects in neutral order:*

- a. au laawa manioka [_{PP} **maaraa ne-aku**].
1SG grow cassava garden POSS-1SG
'I grow cassava in my garden.'
- b. au neaga meemea [_{PP} **gaia maaraa neaku**].
1SG put flower P garden POSS.1SG
'I put flowers in my garden.'

Such facts suggest that objects reside in the complement position of the verb, with PPs and adverbs right-attached.

When multiple arguments appear after the Imere verb, they are ordered left-to-right, in direct order. Imere has a ditransitive alternation between a double object construction and a prepositional dative that is much like the English one. In the double object construction, two bare DP objects appear after the verb, goal before theme (10a). In the prepositional dative, a theme DP appears

²With PPs, an alternative marked order is sometimes permitted (i), presumably reflecting extraposition.

- (i) *Extraposition of object across PP:*
au laawa [_{PP} **maaraa ne-aku**] manioka.
1SG grow garden POSS-1SG cassava
'I grow cassava in my garden.'

before a goal introduced by the preposition *gaia* ('to') (10b).

(10) *Imere has a ditransitive alternation:*

- a. avau nagaia [DP jii-nufine t-akia] [DP atusi].
 1SG give AFF.SG-woman SG-some book
 'I gave a woman a book.'
- b. au nagaia [DP atusi] [PP gaia jii-nufine t-akia].
 1SG give book to AFF.SG-woman SG-some
 'I gave a book to a woman.'

Reversing the order of arguments in either the double object construction or prepositional dative is degraded (11a–b).³

(11) *No inverse order in Imere ditransitives:*

- a. *avau nagaia [DP atusi] [DP jii-nufine t-akia].
 1SG give book AFF.SG-woman SG-some
 'I gave a woman a book.'
- b. ??au nagaia [PP gaia jii-nufine t-akia] [DP atusi].
 1SG give to AFF.SG-woman SG-some book
 'I gave a book to a woman.'

Imere ditransitive constructions also allow us to show that objects take scope left-to-right. I demonstrate with the adjective *pisarasara* ('different'). As observed by Carlson (1987; see also Moltmann 1992; Brasoveanu 2011), *different* in many languages has two different readings. The first is a "sentence-external" reading, roughly "different than some contextually salient entity". More importantly, *different* also has what Carlson calls a "sentence-internal" reading, in which the noun modified by *different* co-varies with a distributive quantifier. This sentence-internal reading requires scope and so can be used to diagnose scope relations. As Brasoveanu notes, we can see this in the English double object construction, which only allows surface scope. When *different* is in the scope of *every*, the noun modified by *different* can co-vary with the quantifier (12a), so that every girl reads a book unique to them. But a sentence-internal reading is not available when *every*

³As in transitives, objects in ditransitives appear before modifiers, like adverbs. An adverb can marginally appear before the goal PP of the prepositional dative, but the neutral order is for all objects to precede the adverb.

scopes below *different*. The example in (12b) only permits the sentence-external reading, in which I gave every book to a girl who is different from some contextually salient individual.

(12) *Sentence-internal reading of different in the scope of distributive quantifier:*

- a. I gave every girl a different book. (✓ sentence-internal)
- b. I gave a different girl every book. (*sentence-internal)

The sentence-internal reading of *different* tracks scope, not just surface order. In the prepositional dative, in which inverse scope is available, *different* can have the sentence-internal reading in both orders (13a–b).

(13) *Sentence-internal reading of different in prepositional dative:*

- a. I gave every book to a different girl. (✓ sentence-internal)
- b. I gave a different book to every girl. (✓ sentence-internal)

The Imere adjective *pisarasara* allows the sentence-internal reading and can be used to diagnose scope. In the double object construction, as in (12a–b), the sentence-internal reading of *pisarasara* is only licensed when the first object is the distributive quantifier and the other objects contains *pisarasara* (14a–b).

(14) *Pisarasara shows that first object outscopes the second:*

- a. au nagaia nufine eweji atusi pisarasara.
1SG give woman every book different
'I gave every woman a different book.' (✓ sentence-internal)
- b. au nagaia nufine pisarasara atusi eweji.
1SG give woman different book every
(lit.) 'I gave a different woman every book.' (*sentence-internal)

In the prepositional dative, both scope relations are possible, as in English:

(15) *Prepositional dative allows both scopes:*

- a. au nagaia atusi eweji gaia nufine pisarasara.
1SG give book every to woman different

‘I gave every book to a different woman.’ (✓ sentence-internal)

- b. au nagaia atusi pisarasara gaia mii-nufine eweji
 1SG give book different to AFF.PL-woman every
 ‘I gave a different book to every woman.’ (✓ sentence-internal)

Binding diagnostics appear to go in the direction of left-to-right organization as well, but are more limited. A Principle C effect obtains if the first object is a pronoun coreferential with a proper name in the second object (16a), but not vice versa (16b).

(16) *First object c-commands second object:*

- a. au fari-na **aia_i** te-fare fou na **Tourave_{k/*i}**.
 1SG show-TR 3SG SG-house new POSS Tourave
 ‘I showed her/him Tourave’s new house.’
- b. au fari-na te-fare fou na **Tourave_i** gaia **aia_i**.
 1SG show-TR SG-house new POSS Tourave to 3SG
 ‘I showed Tourave’s new house to her/him.’

However, binding may not be a useful diagnostic for c-command in Imere, since backwards coreference seems to be degraded in general.⁴

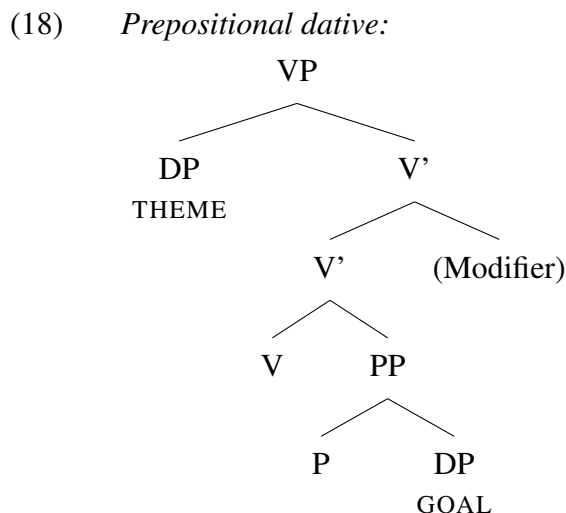
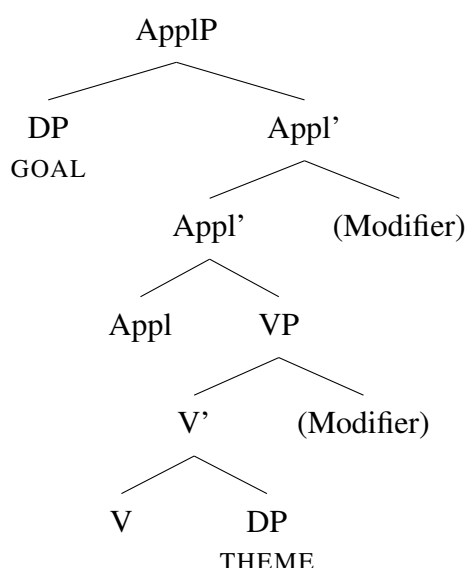
To account for these facts, I propose that Imere has an essentially English-like VP. All modifiers are right-attached and the ditransitive alternation involves two different base-generated structures in left-to-right order (e.g. Marantz 1993; Harley 1997, 2002; Bruening 2001).⁵ For concreteness, I adopt the asymmetric structures proposed by Marantz (1993) and Bruening (2001) for Imere ditransitives, as given in (17) and (18).

(17) *Double object construction:*

⁴For example, coreference is apparently ruled out even in examples like (i).

- (i) *Backwards coreference degraded in Imere:*
 mii-taagata [CP lokoro t-aia_i] ra mantau Tourave_{k/*i}.
 AFF.PL-people raise OBL-3SG 3NSG love Tourave
 ‘The people that raised her love Tourave.’

⁵In accordance with the idea that the Imere ditransitive alternation should be analyzed like the English one, there are interpretive differences between the two ditransitive structures, similar to those identified by Oehrle (1976). For example, the goal of a double object construction is always animate, but not the goal of a prepositional dative.



This proposal accounts for left-to-right scope as well as the observation that arguments precede modifiers in the basic order.

More evidence for the idea that postverbal arguments take scope left-to-right comes from a few constructions in which Imere permits verb-initial order. Verb-initial word order is found with the existential verb *lakina* and its negative counterpart *saai* (19a–c).

(19) *Existential verb lakina and sai permit preverbal and postverbal subjects:*

- a. **tagata** lakina i-fare.
person EXIST LOC-house
'Someone is in the house.'
- b. lakina **tagata** i-fare.
EXIST person LOC-house
'There is someone in the house.'
- c. saai **tagata** i-fare.
EXIST.NEG person LOC-house
'There isn't anyone in the house.'

When the subject is postverbal, it must appear before any locative predicate or modifier (20a–e).

(20) *Postverbal subjects with lakina appears before PP predicate or modifier:*

- a. *lakina **i-fare** tagata.
EXIST LOC-house person

‘There is someone in the house.’

- b. *saai **i-fare** tagata.
EXIST.NEG LOC-house person
‘There isn’t anyone in the house.’
- c. lakina tagata i-fare **naanafi**.
EXIST person LOC-house yesterday
‘There was someone in the house yesterday.’
- d. lakina tagata **naanafi** i-fare.
EXIST person yesterday LOC-house
‘There was someone in the house yesterday.’
- e. *lakina **naanafi** tagata i-fare.
EXIST yesterday person LOC-house
‘There was someone in the house yesterday.’

I propose that these postverbal subjects remain in their thematic position, a leftward specifier of *v*, while the verb raises over them. Modifiers naturally follow, since they are right-attached. So far then, Imere has a familiar SVO system, with arguments are generated in a left-to-right order.

2.2 The problem of postverbal particles

Like many verb-initial Austronesian languages (Rackowski and Travis 2000; Massam 2010), Imere also has a set of postverbal adverbial particles. Unlike other modifiers, these particles occur immediately after the verb, and must appear before all postverbal arguments. Surprisingly, however, we will see that these are organized in inverse order, as also observed for other Austronesian languages (Milner 1972; Rackowski and Travis 2000; Massam 2010). I interpret the existence of inverse order before direct order as evidence for *VP-fronting*.

Imere particles appear after the verb and contribute a range of adverbial meanings. The examples in (21a–c) present a number of adverbial particles, including the directional particle *mai*, the negation particle *kee*, and the manner particle *maruuruu*.

(21) *Imere has postverbal adverbial particles:*

- a. au toova **mai** tu-ku-taina.
1SG bring DIR.SP DET.SG-POSS.1SG-brother
‘I brought my brother.’

- b. ki tee-fano **kee**.
2SG.II FUT-go.SG NEG
'You will not go.'
- c. au fago-na **maruuruu** aia.
1SG wake.up-TR slowly 3SG
'I woke him/her slowly.'

In addition, some *wh*-adverbs can appear as particles, like *nefea* ('when') and *fefea* ('how') (22a–b).

(22) *Wh-adverbs may appear as postverbal particles:*

- a. akoe ka k-ounu **nefea** a-vai?
2SG DEP 2SG.NFUT-drink when PL-water
'When did you drink water?'
- b. akoe ka k-ounu **fefea** a-vai?
2SG DEP 2SG.NFUT-drink how PL-water
'How do you drink water?'

To distinguish these elements from adverbs like *naanafi* ('yesterday'), which appear in different positions, I will refer to them as *adverbial particles* throughout. My use of this term is purely distributional in nature, since both types of elements contribute adverbial meanings. Additionally, the use of the term "particle" should not be confused with the verbal particles of Germanic or discourse particles, since I treat both adverbs and adverbial particles as adverbs, structurally.⁶

Postverbal particles precede all postverbal arguments. Objects of all types, for example, appear after postverbal particles, including pronouns in (23a–b) and non-specific indefinites in (23c–d).

(23) *Objects appear after postverbal particles:*

- a. avau toova **mai** akoe gaia kina.
1SG bring DIR.SP 2SG to 3SG.LOC
'I brought you here.'
- b. *avau toova akoe **mai** gaia kina.
1SG bring 2SG DIR.SP to 3SG.LOC
'I brought you here.'
- c. au ounu **ana** a-vai.
1SG drink still PL-water

⁶How adverbs and adverbial particles differ structurally is discussed in more detail in section 4.3.

‘I still drink water.’

- d. *au ounu a-vai **ana**.
1 SG drink PL-water still
‘I still drink water.’

Similarly, when a subject appears after the verb, such as with the existential verb *lakina*, postverbal particles precede it (24a–b).

(24) *Postverbal particles appear before a postverbal subject:*

- a. lakina **kee** tagata i-fare.
be NEG person LOC-house
‘There isn’t someone in the house.’
- b. *lakina tagata **kee** i-fare.
be person NEG LOC-house
‘There isn’t someone in the house.’

These facts are at first reminiscent of the French facts described in Pollock (1989), commonly taken to motivate V-to-T movement over material that is left-adjoined to the verb phrase. But Imere postverbal particles do not behave like left-adjoined elements. When multiple postverbal particles appear, they occur in inverse order, taking scope in a right-to-left fashion. Similar facts have been documented for postverbal particles in verb-initial Austronesian languages, like Fijian, Malagasy or Niuean (Milner 1972; Rackowski and Travis 2000; Massam 2010). The examples in (25a–c) demonstrate inverse order clearly.

(25) *Imere adverbial particles are in inverse order:*

- a. aia ee-goro **mataakina kee ana**.
3SG NFUT-sing well NEG still
‘S/he still doesn’t sing well.’
- b. mii-nufine rat kai-na **sorookina kee** oofi.
DET.PL-woman 3NSG eat-TR all NEG yam
‘The women didn’t eat all the yams.’
- c. au ounu **tlasia kee** avai.
1 SG drink enough NEG water
‘I didn’t drink enough water.’

When multiple postverbal particles appear, they appear in the mirror order from the unmarked order in languages like English, Dutch, and Italian. Manner adverbs are lower than continuative markers like *still* (25a) (Cinque 1999). Similarly, particles that quantify the object like *sorookina* ‘all’ and *tlasia* ‘enough’ should be lower than negation (25b–c). Examples with postverbal particles in direct order are either ungrammatical or degraded (26a–c).

(26) *Direct order of adverbial particles degraded:*

- a. *aia ee-goro **ana mataakina**.
3SG NFUT-sing still well
‘S/he still sings well.’
- b. *mii-nufine ra kai-na **kee sorookina** oofi.
PL-women DIST eat-TR NEG all yam
‘The women didn’t eat all the yams.’
- c. *au ounu **kee tlasia** a-vai.
1SG drink NEG enough PL-water
‘I didn’t drink enough water.’

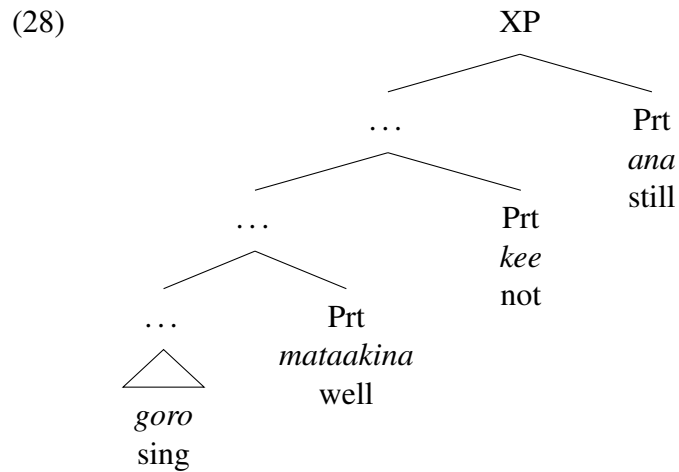
When reordering is possible, the resulting interpretive differences also point to inverse scope. For instance, differential attachment of *slowly* interacts predictably with the negation particle *kee* (27a–b).

(27) *Optional orderings follow right-to-left scope:*

- a. au fago-na **maruuruu kee** aia.
1SG wake.up-TR slowly NEG 3SG
‘I didn’t wake him up slowly.’ (*slowly* modifies the inner event)
- b. au fago-na **kee maruuruu** aia.
1SG wake.up-TR NEG slowly 3SG
‘I slowly didn’t wake him up.’ (*slowly* modifies the negated event)

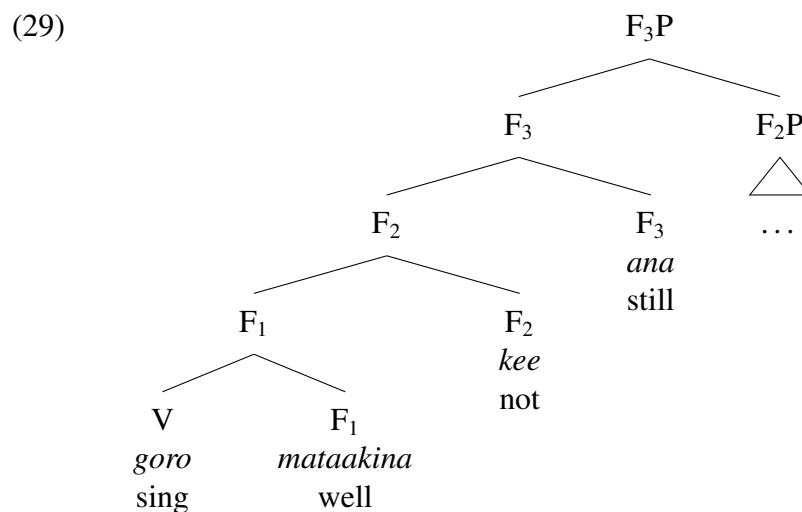
These facts are surprising given what was said about the Imere verb phrase in section 2.1. Inverse order suggests an ascending verb phrase, with adverbial particles attaching on the right. This kind of structure is schematized in (28), for example (25a). I abstract away from the question of what phrase exactly different adverbial particles attach to, whether directly to the verb or to specific

functional heads in the extended verbal projection.



Right-attachment captures right-to-left scope straightforwardly. However, the proposal in (28) seems to predict that the Imere VP in general should display inverse order, contrary to what we have seen, because the tree in (28) provides no left-attached positions after the verb and its particles.

One solution that can deliver right-attachment is to assume that all postverbal particles are functional heads picked up by successive head movement of V to a clause-medial position (*cf.* Clemens 2014, 2019). This proposal is schematized in (29).



A head movement analysis would explain why postverbal particles appear in inverse order, with each head moving to left-adjoin to the next head up. In addition, postverbal arguments can appear in direct order after the position targeted by head movement, in the complement of F₃ in (29). We can

demonstrate, however, that a head movement analysis like (29) is not correct. Postverbal particles do not behave like affixes from the perspective of morphophonological diagnostics. In addition, adverbial particles can attach to phrases and can even modify each other, as predicted by a phrasal analysis.

Let me first demonstrate that postverbal particles are not affixes, as predicted, for instance, by a classic head movement analysis (Baker 1988). There are a number of morphophonological properties that distinguish affixes from particles. Imere has fixed stress on the antepenultimate mora (Clark 2002). Prefixes and suffixes on the verb shift stress, but not postverbal particles. In (30a–d), the non-future prefix *-ee* and transitive suffix *-(n)a* predictably shift stress, but not the postverbal particle *kee*.

(30) *Affixes shift stress, but particles do not:*

- a. áia **ée-kai**.
3SG NFUT-eat
'S/he ate.'
- b. áia **ée-kai** kee.
3SG NFUT-eat NEG
'S/he didn't eat.'
- c. áia **kái-na** maníoka.
3SG eat-TR cassava
'S/he ate cassava.'
- d. áia **kái-na** kee maníoka.
3SG eat-TR NEG cassava
'S/he didn't eat cassava.'

A second piece of evidence that postverbal particles are not affixes comes from the distribution of a word minimality requirement (see also section 4.3). As Clark (2002) notes, Imere requires prosodic words to be trimoraic at least. All affixes affect the minimality requirement. The transitive suffix *-(n)a*, for instance, bleeds the insertion of the non-future prefix *ee-*, which surfaces only to satisfy minimality (31a–b). In contrast, postverbal particles never affect minimality. The presence of a postverbal particle has no effect on the non-future prefix (31b).

(31) *Affixes help a verb satisfy minimality, particles do not:*

- a. aia **kai-na** manioka.
3SG eat-TR cassava
'S/he ate cassava.'
- b. aia **ee-kai** kee.
3SG NFUT-eat NEG
'S/he didn't eat.'

Morphophonological diagnostics then make clear that postverbal particles are not affixes.

We could maintain a head movement analysis by allowing head movement to apply to independent words, but we can show that postverbal particles attach to a phrasal constituent. First, as in many verb-initial languages, Imere has constructions in which a non-verbal predicate appears without an auxiliary, with some PP predicates and with predicative possession (32a–b).

(32) *Non-verbal predicates in Imere without auxiliary:*

- a. avau [PP gaia Ifate]
1SG from Efate
'I am from Efate.'
- b. atusi [PP na tagata raa]
book POSS man DIST
'The book is that man's.'

Such predicates can also be followed by adverbial particles, like *ana* ('still') in (33a–b).

(33) *Particles can modify phrasal predicate:*

- a. au [PP gaia Ifate] **ana**
1SG from Ifate still
'I am still from Efate.'
- b. atusi [PP na tagata raa] **ana**
book POSS man DIST still
'The book is still that man's.'

The constituent that postverbal particles modify can then in principle be complex, and does not need to be a head (see Massam 2001 for a similar argument in Niuean).

A similar conclusion comes from constructions in which postverbal particles modify each other.

Recall that the *wh*-adverb *fefea* ('how') can appear as a particle. This *wh*-particle can modify other adverbial particles, like *mataakina* ('well') or *pelepele* ('fast') (34a–b).⁷

(34) *Wh-particle fefea can modify other particles:*

- a. ka fee-fe [**pelepele fefea**] atusi?
 DEP read-TR fast how book
 'How fast did you read the book?'
- b. ka loro [**mataakina fefea**] te-mate?
 DEP lock well how SG-door
 'How well did you lock the door?'

Particles then can form a phrasal constituent by themselves, a possibility that follows straightforwardly if they are adjoined phrasal elements rather than head-adjoined.

A final argument against treating postverbal particles as functional heads comes from the morphosyntax of negation. Negation in Imere is usually expressed by the postverbal particle *kee*. Unlike other particles, *kee* is optionally doubled by a prefix on the verb *s-*, as in (35).

(35) *Negation can involve prefix and postverbal particle:*

- au s-ounu **kee** a-vai.
 1 SG NEG-drink NEG PL-water
 'I am not drinking water.'

We can make sense of this pattern if *s-* is a realization of the functional head Neg, picked up by head movement of the verb. As in analyses of French *ne ... pas*, we can treat *kee* as a phrasal particle attached to NegP, doubling the Neg head. But this analysis means that the particle *kee* cannot be a realization of a functional head in the extended verbal projection.

I conclude that the verb and its adverbial particles form a phrasal constituent. A different

⁷To express degree intensification, the adverbial particle can undergo reduplication, a common strategy in Imere.

(i) *Adverbial particle can be reduplicated:*

- au fago-na [**maruuruu maruuruu**] aia.
 1 SG wake.up-TR slowly slowly 3SG
 'I woke her/him up too slowly.'

Such examples could also be analyzed as phrasal.

explanation is necessary to allow inverse order before direct order. In the next section, I argue that Imere makes use of an operation of VP-fronting to establish basic word order. A phrasal constituent including the verb and all particles fronts to a clause-medial position, stranding arguments appearing in direct order.

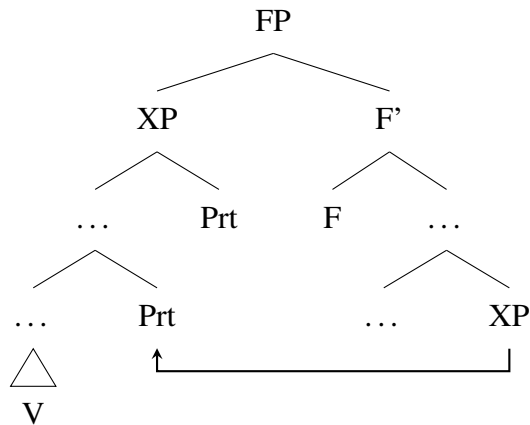
3 A VP-fronting analysis of Imere

In this section, I develop a VP-fronting analysis of Imere, which provides a clause-medial constituent within which adverbial particles can right-attach. To deal with the stranding problem, I propose that the fronted VP undergoes distributed deletion, in the sense of Fanselow and Ćavar (2001), driven by a constraint, *REALIZE GOAL*, that favors realizing only material that bears the movement-driving feature. I present evidence in favor of distributed deletion from the scope of postverbal particles. Finally, I discuss the observation that there is no stranding problem internal to non-verbal predicates. I show that this difference between verbal and non-verbal predicates is found across VP-fronting languages, and propose that this difference reflects how the functional head *Pred* and interacts with *REALIZE GOAL*.

3.1 VP-fronting and inverse order

As we saw in section 2.2, the inverse order of postverbal particles cannot be captured through head movement. Instead, I argue that the existence of inverse order before direct order arises through an operation of VP-fronting. Specifically, I propose that a constituent *XP* containing the verb and all adverbial particles moves to a clause-medial position, which I refer to as *Spec-FP* (36):

- (36) *A VP-fronting analysis of Imere:*

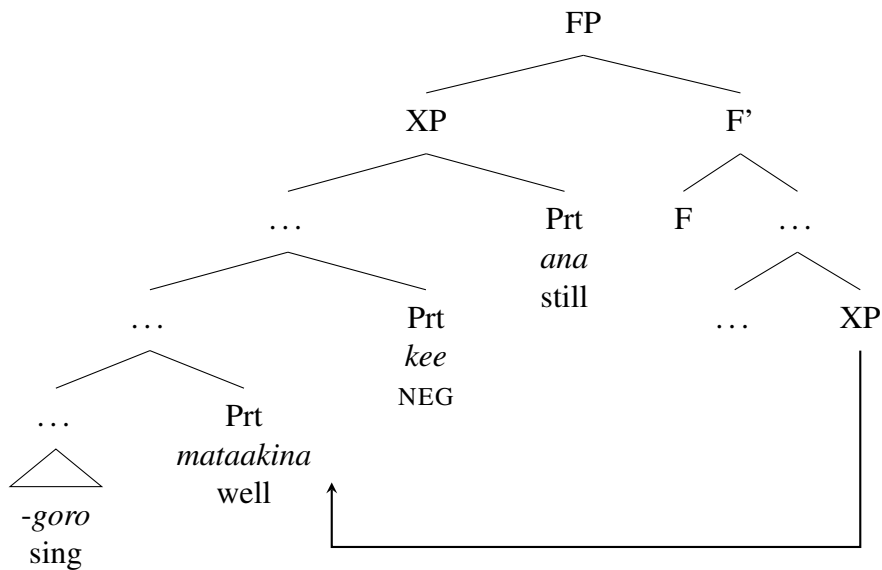


A VP-fronting analysis explains inverse order in examples like (37), if we assume that postverbal particles right-attach somewhere within XP, and so are part of the constituent that fronts. This is schematized in the derivation in (38).

- (37) *Imere VP with multiple adverbial particles in inverse order:*

aia ee-goro **mataakina** **kee** **ana**.
 3SG NFUT-sing well NEG still
 'S/he still doesn't sing well.'

- (38) *A VP-fronting analysis of Imere:*



I use the label XP here and throughout, because adverbial particles can likely attach at different

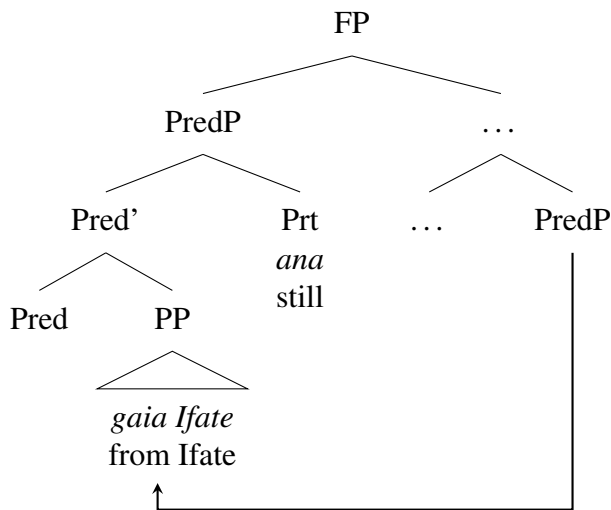
heights. Indeed, given the double expression of negation discussed in section 2.2, XP must be at least as big as NegP, but may include other functional projections inside the vP as well. In addition, the verb must undergo head movement within XP, at least to Neg, to pick up the prefix *s-*.⁸ Note that the position of FP is below the surface position of the subject, which I attribute to leftward movement of the subject (e.g. to Spec-TP).⁹

A VP-fronting analysis also extends to examples like (39), on the assumption that non-verbal predicates undergo phrasal fronting too. For these cases, I posit a PredP projection (e.g. Bowers 1993), to provide an attachment site for postpredicate particles (see also section 3.4). This PredP moves to a clause-medial position (40).

(39) *Postverbal particle on phrasal predicate:*

au [PP gaia Ifate] **ana**
 1SG from Ifate still
 ‘I am still from Efate.’

(40) *A PredP-fronting analysis of Imere:*



In this way, a VP/PredP-fronting analysis accounts for the placement of postpredicate particles, by providing a clause-medial constituent in which they can occur in inverse order. Imere then

⁸The verb also combines with TAM prefixes like non-future *ee-* and the future marker *tee-*, which may precede the negative prefix (Clark 2002). These facts could be evidence that XP is bigger, although some prefixes could attach through a linear operation of morphological merger (Embick and Noyer 2001, Harley 2013). Unlike with the negation prefix, I do not know of evidence from a doubling particle that such prefixes originate within XP.

⁹See footnote 16 for some evidence that the base position of the subject is included in the fronting verb phrase.

supplies new evidence for the idea that some languages establish basic word order through an operation of VP-fronting (e.g. Kayne 1994; Massam 2001; Rackowski and Travis 2000).¹⁰

3.2 Distributed deletion and the stranding problem

As in many other VP-fronting analyses (e.g. Massam 2001; Coon 2010a; Medeiros 2013; Collins 2017), a problem that arises for this approach to Imere is how to ensure that the right constituents end up in the fronting VP, but not other arguments or adjuncts. I refer to this as the “stranding problem” (see also Chung 2005, Massam 2010 for discussion). In Imere, adverbial particles must be part of the VP constituent that fronts, but not any DP arguments. PP and CP complements similarly follow postverbal particles (41a–d), and so must “vacate” the VP before movement in some fashion.

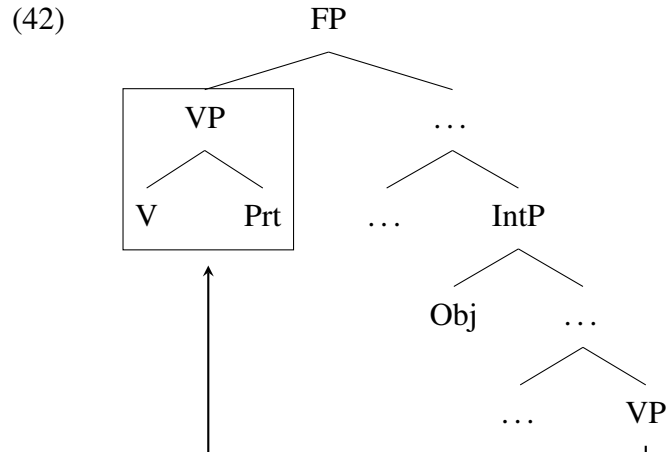
(41) *PP and CP complement follow postverbal particles:*

- a. au fanaga **kee** [_{PP} gaia nuane].
1SG talk NEG to man
‘I didn’t talk to the man.’
- b. *au fanaga [_{PP} gaia nuane] **kee**.
1SG talk to man NEG
‘I didn’t talk to the man.’
- c. au mantua **kee** [_{CP} ta Touravea kai-na manioka].
1SG think NEG C Touravea eat-TR cassava
‘I didn’t think that Touravea ate cassava.’
- d. *au mantua [_{CP} ta Touravea kai-na manioka] **kee**.
1SG think C Touravea eat-TR cassava NEG
‘I didn’t think that Touravea ate cassava.’

Two solutions to the stranding problem have commonly been explored for analyses of VP-fronting: remnant movement and high base-generation. Massam (2010), for example, points out that one way around the stranding problem for objects could be to allow some internal arguments to be introduced in a higher position, in the specifier of a dedicated functional head (see also Borer

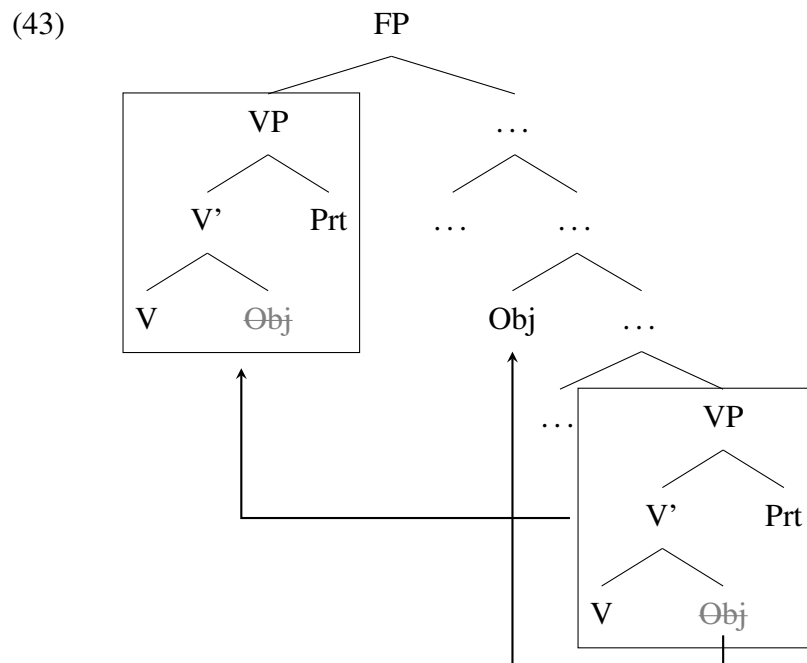
¹⁰Note that the presence of VP-fronting in an SVO language provides evidence against the idea that VP-fronting is always linked to verb-initiality. A number of authors working on verb-initial word order have suggested that VP-fronting serves to satisfy the EPP property of T, and is in complementary distribution with DP movement to Spec-TP (e.g. Alexiadou and Anagnostopoulou 2001; Massam 2001; Travis 2005). The Imere data seems to show that, at least sometimes, VP-fronting and DP movement to Spec-TP can co-occur.

2005). We could adopt this idea for Imere and say that objects are introduced by a functional head Int, while adverbial particles Merge lower (42).



In this structure, the verb and adverbial particles form a constituent to the exclusion of the object, so that no stranding problem arises. However, this analysis is less attractive for CP and PP modifiers, which may express meanings similar to adverbial particles. It is not clear how to motivate a structure in which these modifiers are base-generated high as well. In addition, as will be discussed in section 3.3, a base-generated structure like (42) makes the wrong predictions about scope. Adverbial particles scope in Imere over objects and modifiers, unlike what (42) predicts.

Another common approach to the stranding problem is to adopt remnant movement derivations (e.g. Massam 2001; Coon 2010a; Collins 2017). In this approach, stranded material is generated inside the VP, but moves out of it prior to VP-fronting, as in (43).



For objects, this vacating movement can be seen as analogous to object shift and could be linked to Case. For PPs and CPs, vacating movement might be equated with extraposition, independently available for such constituents in Imere. However, although movement for Case is often obligatory, extraposition is an optional operation and should give rise to optional stranding. In addition, a remnant movement analysis for Imere becomes quite stipulative in contexts in which multiple phrases are stranded, since vacating movements must preserve neutral word order (objects in a ditransitive cannot be reordered, for example). As shown in section 2.1, the Imere VP looks like a familiar SVO system. Finally, the vacating movements required for remnant movement should make available additional scope relations, but, as we will see in section 3.3, these are not attested.

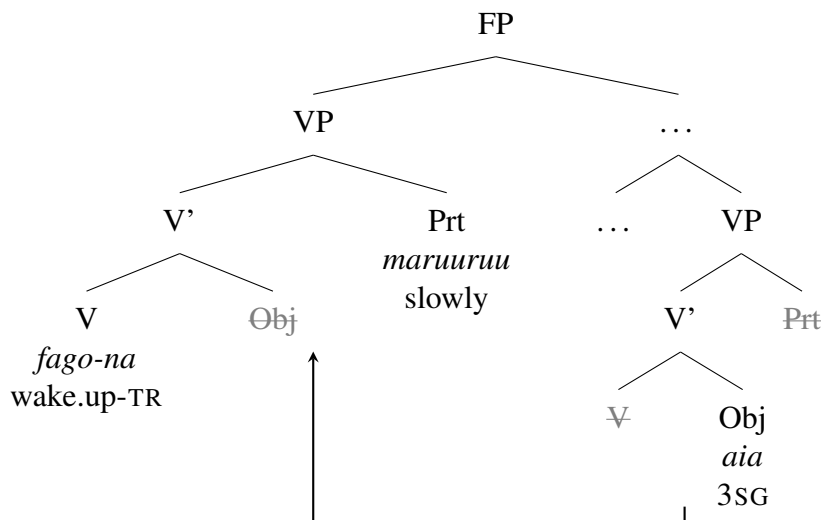
For these reasons, I pursue a different solution to the stranding problem. It is worth emphasizing, though, that the generalizations about stranding I defend in the rest of the paper are independent of the distributed deletion analysis. In principle, it may be possible to incorporate the same insights into a properly constrained remnant movement or base-generation approach. However, because Imere provides no evidence of vacating movements or an unorthodox base-generated structure, I propose that VP-fronting in Imere is accompanied by *distributed deletion* (Fanselow and Ćavar 2001), an option in a Copy Theory of Movement. All objects, PPs, and CPs are in fact part of the

fronted VP, but are deleted at PF. This approach is schematized in (45), for (44).

(44) *Imere fronted VP with adverbial particle:*

au fago-na maruuruu aia.
 1SG wake.up-TR slowly 3SG
 ‘I woke him/her slowly.’

(45)

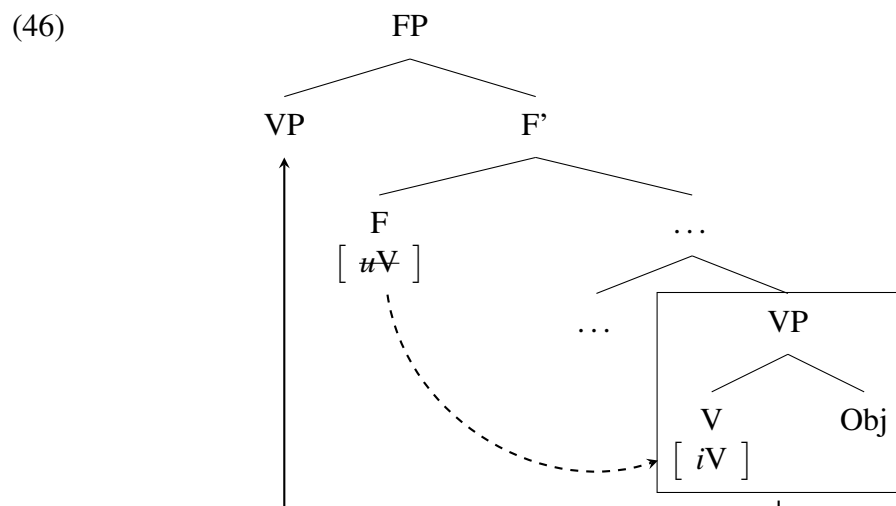


In this tree, the object *aia* is base-generated within the VP and is dragged along by VP-fronting. In a Copy Theory of Movement, we can posit a derivation in which the object *aia* nonetheless surfaces in its base position, because the object is deleted the higher VP copy, as a result of scattered deletion. This account avoids the stranding problem altogether, because no vacating movements are necessary. Adverbial particles can be right-attached without creating an ordering paradox, because distributed deletion ensures that objects still follow.¹¹

An important question that arises in this approach is why VP-fronting in particular should lead to distributed deletion. I attribute the need for distributed deletion in VP-fronting to a pressure to realize only the syntactic element driving movement, the predicate. Following Massam and Smallwood (1997), Coon (2010a), and Collins (2017), I propose that predicate fronting is driven by features of the verb, much like head movement (see also Coon 2010a). Specifically, suppose

¹¹I set aside the question of whether DP objects undergo a type of short object movement, as often posited for English (e.g. Johnson 1991, Koizumi 1995). As long as any such movement takes place inside the constituent that fronts, adopting this movement step does not alter the predictions of the account.

that the head F which initiates predicate fronting is looking for the closest verbal element and so carries an uninterpretable probe [μV]. The verb carries an interpretable feature [iV] and is targeted for Agree (46).



Although the verb carries the relevant feature, I propose that it is a larger phrase that undergoes movement, including objects and modifiers. (I will provide a detailed proposal in section 3.4 for why the verb does not move by itself.¹²) In this view, VP-fronting involves a kind of pied-piping (see also Cinque 2005).

I propose a PF constraint that regulates this type of pied-piping and favors deletion of material in a moved phrase that does not carry the movement-triggering feature, in this case objects and modifiers. I call this constraint **REALIZE GOAL** (see Fanselow and Ćavar 2001 for a similar constraint).

- (47) **REALIZE GOAL:** For an instance of movement of the phrase XP triggered by the feature F, spell out only the material in XP that carries the interpretable feature F.

For a derivation like (46), **REALIZE GOAL** will favor deletion of any objects or modifiers of the verb that are included in the phrase that undergoes fronting, since they do not carry the feature [V].

¹²For VP-fronting in Ch'ol, Coon proposes that head movement is unavailable in languages with predicate fronting, resulting in movement of a larger phrase. This type of approach suffices for VP-fronting, but will not make the right cut for movement of non-verbal predicates, as discussed in the next section.

Effectively then, *REALIZE GOAL* tries to undo syntactic pied-piping through distributed deletion.

To allow for a constraint like *REALIZE GOAL* to influence copy deletion, I follow Nunes (1995, 2004) and Landau (2006) in assuming that copy deletion applies at PF, so that constraints like the Stray Affix Filter can lead to multiple spell-out, for example (see also Hein 2018). More specifically, I propose that the interface between syntax and PF involves an Optimality-theoretic calculus, in which syntactic and phonological constraints compete and may cause apparent departures from familiar underlying structures (see also Clemens 2014, 2019 and Bennett et al. 2016, for example). The task of this calculus is to map a hierarchical structure to a PF output in a way that balances the requirement of phonological/prosodic interface constraints with faithfulness to the underlying input tree. It may seem odd to think of *REALIZE GOAL* as a faithfulness constraint, but I propose to think of faithfulness constraints in this calculus in a slightly different way from those at work in phonological alternations, because, unlike phonological faithfulness constraints, the input and output they relate to each other do not involve the same types of structures. Mapping a hierarchical structure to a prosodic one necessarily means a simplification of the information present in the input, so that relations such as headedness and Agree are lost. I conceive of faithfulness constraints at PF then as constraints that prioritize different syntactic relations for the purposes of linearization. *REALIZE GOAL* prioritizes the determination of PF position on the basis of Agree relations.¹³

In this theory, *REALIZE GOAL* can be variably ranked relative to other constraints. I also adopt a faithfulness constraint that penalizes distributed deletion, the constraint *CONTIGUITY* in (48) (see also Fanselow and Ćavar 2001 and Johnson 2012). This constraint prioritizes a faithful reflection of c-command relations in linear order, in the sense of Kayne (1994).

(48) *CONTIGUITY*: All elements in a moved phrase form a contiguous string in the output.

In Imere, the ranking *REALIZE GOAL* >> *CONTIGUITY* will generate distributed deletion.

For a sketch of this approach, consider a fronted VP with an object and adverbial particle, in the OT tableau in (50). Note that I am ignoring for the moment the adverbial particle, and the violation


¹³As a result, this constraint could be viewed as a version of Richards's (2016) Probe-Goal Contiguity, except that Probe-Goal Contiguity applies in the course of a derivation in Richards's model.

of REALIZE GOAL it incurs. I turn to the question of why particles survive deletion in section 4.

(49) *Imere VP with adverbial particle before object:*

au fago-na maruuruu aia.
 1SG wake.up-TR slowly 3SG
 ‘I woke him/her slowly.’

(50)

Input: [V Obj Prt] ... [V Obj Prt]	REALIZE GOAL	CONTIGUITY
 a. [V Obj Prt] ... [V Obj Prt]		*
b. [V Obj Prt] ... [V Obj Prt]	*!	

Although the whole VP moves, only the verb carries the interpretable feature that drives VP-fronting, the categorial feature [V]. As a result, REALIZE GOAL penalizes candidate (b), in which VP-fronting is faithfully realized, because the moved phrase contains material without the movement-driving feature. The winning candidate is (a), with distributed deletion and low realization of the object.

The opposite ranking, CONTIGUITY >> REALIZE GOAL, generates languages in which VP-fronting does not run into a stranding problem, but moves all dependents of the verb. I suggest that this situation is found in VOS Malagasy (e.g. Pearson 1998; Rackowski and Travis 2000), and also in OVS languages like Hixkaryana (e.g. Derbyshire 1979; Kalin 2014). In both, all dependents of the verb seem to be able to appear next to a fronted verb, as shown in (51a–b) and (52a–b).

(51) *Malagasy DPs, PPs, and CPs appear in fronted VP:*

- a. [VP namono [DP ny akoho] [PP tamin-’ny antsy]] ny vehivavy
 PST.kill DET chicken PST.with-DET knife DET woman
 ‘The woman killed the chicken(s) with the knife.’
- b. [VP Nanantena [CP an’i Noro ho nianatra tsara]] Rakoto
 PST.hope OBL.DET Noro C PST.study Rakoto
 ‘Rakoto hoped for Noro to study well.’ (Malagasy; Pearson 1998:95,105)

(52) *PPs, and CPs in OVS in Hixkaryana:*

- a. [VP [PP honyko heno mitkoso] n-te-ko] Waraka
 peccary herd near.to 3SG-go-RECIP.COMPL Waraka

‘Waraka went near to the peccary herd.’

- b. [VP [CP Waraka-wya honkyo won r] xe] wehxana
Waraka-by peccary shooting of desire 1SG.AUX
‘I want Waraka to shoot peccary.’ (Hixkaryana; Derbyshire 1979:207)

In these languages, no stranding problem arises, because a higher ranking of CONTIGUITY ensures that the outcome of VP-fronting is faithfully realized.

In support of this approach, I will now demonstrate that it makes the correct predictions for scope relations in Imere, which reveal a familiar underlying structure. Then, I show that a distributed deletion approach based on REALIZE GOAL captures a crosslinguistic generalization about the distribution of the stranding problem, namely the fact that fronting of non-verbal predicates is not accompanied by stranding of material inside the predicate.

3.3 Distributed deletion and the scope of postverbal particles

The distributed deletion account proposed above maintains a traditional view of verb phrase structure, in which adverbial particles are able to occupy positions above postverbal arguments and modifiers. In this section, I demonstrate that adverbial particles indeed may be associated with a *discontinuous scope domain*, as predicted by a distributed deletion account. Adverbial particles only scope over adverbial particles to their left, but may also sometimes scope over postverbal arguments and modifiers to their right. This scope domain follows from the distributed deletion analysis presented above, because it posits that adverbial particles may be right-attached above objects and modifiers in both VP copies.

To investigate the scope domain of Imere particles, we need to look at particles that can interact scopally with other elements. One such particle is the negative particle *kee*. This particle takes scope in a position above objects and PP adjuncts, as evident in the licensing of NPIs. As Martí (2018) describes, indefinite determiners in Imere are NPIs and require licensing (53a). The negative particle can license an NPI object or PP in its scope (53b–c).¹⁴

¹⁴Similarly, a quantificational object can scope below the negative particle:

- (i) *Object can scope below negation:*

(53) *Imere indefinite articles licensed by negation:*

- a. *au seia **se**-tama.
1 SG see INDEF.SG-child
'I saw a child.'
- b. au seia kee **se**-tama.
1 SG see NEG INDEF.SG-child
'I didn't see any child.'
- c. au seia kee akoe **se**-fare.
1 SG see NEG 2SG INDEF.SG-house
'I didn't see you in any house.'

This pattern follows if *kee* is right-attached above objects and modifiers, and so c-commands them.

Another particle that is quantificational is *sorookina*, which acts as a floating quantifier modifying DP arguments, as in (54).¹⁵

(54) *Postverbal particle sorookina acts as floating quantifier:*

- au ounu **sorookina** a-vai.
1 SG drink all PL-water
'I drank all the water.'

Sorookina requires a plural DP argument in its scope. For example, it cannot be used if no plural DP is present (55a). In addition, *sorookina* must c-command the plural DP. It cannot modify the subject of a transitive (55b).

(55) *Sorookina requires a plural DP:*

- a. *au seia **sorookina** te-fenu.
1 SG see all SG-turtle
'I saw the turtle.'
- b. *mii-nuane seia **sorookina** te-fenu.
PL-man see all SG-turtle
'The men all saw the turtle.'

Au seia kee te-fenu eweji
1 SG see NEG SG-turtle every
'I didn't see every turtle.' ($\neg > \forall$)

The object can also scope above negation, which I assume is the result of an operation of QR, as discussed below.

¹⁵See Seiter (1980) and Massam (1998) for discussion of *oti*, a similar particle in Niuean.

Additional evidence that *sorookina* has a c-command requirement comes from the fact that it is sensitive to the unergative/unaccusative distinction. *Sorookina* cannot modify the subject of a transitive and or the subject of an unergative, like *-moe* ('sleep') or *-tare* ('cough') (56a–b).

(56) *Sorookina* cannot modify subject of unergative:

- a. *mii-nuane rat ee-moe **sorookina**.
DET.PL-man 3NSG NFUT-sleep all
'The men all slept.'
- b. *mii-nuane rat ee-tare **sorookina**.
DET.PL-man 3NSG NFUT-cough all
'The men all coughed.'

However, *sorookina* can be licensed by a plural subject of an unaccusative verb like *-mate* ('die') and *-melu* ('fall') (57a–b).

(57) *Sorookina* can modify subject of unaccusative:

- a. mii-nuane i-fare rat ee-mate **sorookina**.
DET.PL-man LOC-house 3NSG NFUT-die all
'The men in the house all died.'
- b. mii-nuane rat ee-melu **sorookina**.
DET.PL-man 3NSG NFUT-fall all
'The men all fell.'

We can capture this difference if the unaccusative object starts out as the complement of V, in the c-command domain of *sorookina*.

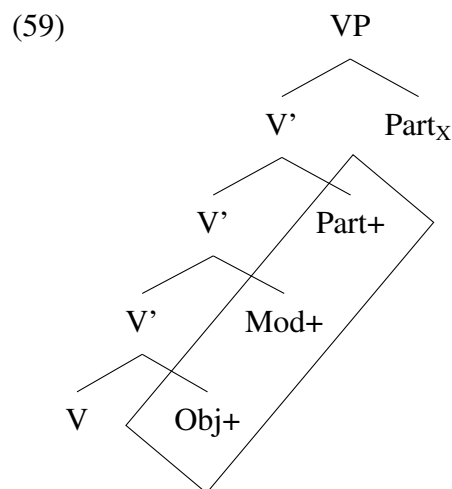
These facts provide evidence that particles scope over postverbal arguments. In other words, adverbial particles have a *discontinuous* scope domain. A particle scopes over all particles to its left and all postverbal arguments and modifiers to its right, but not other particles to the right. This split scope domain is schematized in (58).

(58) *Scope domain of a particle Part_X (boxed):*

... Part₁ ... Part_{X-1} **Part_X** Part+ Obj+ Mod+

A distributed deletion analysis derives this scopal domain. If the underlying order of the Imere VP

involves right-attachment of the adverbial particle above arguments and modifiers, then the boxed domain in (58) is in fact a contiguous domain to the left of the adverbial particle, as in (59).



What is unusual about the scope of these particles in this analysis is only that some of the material they scope over ends up pronounced in a different copy of the VP.¹⁶

As discussed above, another common approach to the stranding problem is to assume a remnant movement derivation, in which all stranded material moves out of the VP before VP-fronting. A remnant movement is also compatible with the idea that the underlying order is (59), since particles could Merge above the base position of objects and modifiers. But a remnant movement analysis runs into another issue, in that it predicts additional scope relations that are not available. Vacating movements should result in the availability of additional scope positions, providing a higher scope position for all items that are moved out of the VP. But, as already mentioned in the discussion of ditransitives, scopal relations appear to be the same as in other SVO languages, with fixed surface

¹⁶A prediction of this analysis is that adverbial particles may in principle take scope in different positions. In fact, the scope domains of the particles *sorookina* and *kee* do differ, in how they interact with subjects. Although *sorookina* cannot modify a subject, an NPI subject can be licensed by negation (i).

- (i) *NPI subject licensed by kee:*
se-tama seia kee avau.
 INDEF.SG-child see NEG 1SG
 'No child saw me.'

We can explain this in the proposed analysis if the base position of the subject is included in the constituent that undergoes fronting. The differing scope of *kee* and *sorookina* can then be explained if they attach at different heights, *kee* above the subject and *sorookina* below it, interleaving in different ways with the verb's arguments. In accordance with this structure, note that *sorookina* is always ordered inside of *kee* when the two co-occur (26a).

scope in the double object construction.¹⁷

Distributed deletion then makes the right predictions about scope in Imere. In the next section, I show that this account also captures a crosslinguistic generalization about stranding with non-verbal predicates, the absence of a stranding problem internal to fronted DP and PP predicates.

3.4 Fronting of non-verbal predicates and REALIZE GOAL

In this section, I turn to fronting of non-verbal predicates. At first glance, non-verbal predicates seem to present a problem for the picture sketched above, because they do not display stranding. As discussed previously, Imere allows fronting of non-verbal predicates like DPs and PPs. However, these predicates differ in that they move intact, without stranding. A PP like *gaia Ifate* moves with its complement DP (60a). In contrast, the same DP is necessarily stranded when it is the object of the verb (60b).

(60) *Object of V, but not P, stranded in fronting:*

- a. au [PP *gaia Ifate*] ana
1SG from Ifate still
'I am still from Efate.'
- b. au [VP *sei-a ana*] Ifate.
1SG see-TR still Ifate
'I still see Efate.'

Similar patterns are found in other predicate fronting languages. In Niuean, PPs and objects with the absolutive marker *e* are stranded by VP-fronting. However, when the same PPs and DPs are part of a non-verbal predicate, they do front (61a–b).

(61) *PPs and DPs front as non-verbal predicates in Niuean:*

¹⁷I account for scopal flexibility in the prepositional dative by appealing to QR of the lower object, adopting the idea that QR is restricted in double object constructions (see Bruening 2001). QR is independently necessary to account for the fact that quantificational objects can scope above and below particles, as in (i).

- (i) *Object can scope below and above negative particle:*
au *seia kee te-fenu eweji*
1SG see NEG SG-turtle every
'I didn't see every turtle.' ($\neg > \forall$; $\forall > \neg$)

- a. [Ko [DP e tau kamuta]] fakamua a lautolu.
 PRED ABS PL carpenter before ABS 3PL
 ‘They were carpenters before this.’

- b. [Hā [PP he fale gagao]] a ia.
 PRED in house sick ABS 3SG
 ‘S/he is in the hospital.’

(Massam 2001:165)

Similarly, in Samoan, PPs are stranded by VP-fronting, but move intact when they act as the main predicate of the clause (62).

(62) *PPs move intact as non-verbal predicate in Samoan:*

- sā [PP i Apia] lo mātou tinā i lea taimi.
 PAST LOC Apia our mother LOC that time
 ‘Our mother was in Apia at that time.’

(Mosel and Hovdhaugen 1992, cited in Collins 2017:7)

These facts reveal a key generalization about predicate fronting. There do not seem to be cases in which, in analogy with movement of the verb, the preposition or determiner that heads a non-verbal predicate that undergoes movement by itself. In other words, there is no stranding problem in movement of non-verbal predicates. In contrast, full DP objects are routinely stranded across VP-fronting languages.

In some predicate fronting languages, the way non-verbal predicates are expressed avoids the stranding problem. In Fijian, for instance, a nominal predicate fronts, but a PP predicate is stranded, with the verb *tiko* appearing in initial position (63a–b).¹⁸

(63) *Fijian non-verbal predicates*

- a. e [NP qasenivoli] na marama yaa.
 3SG teacher ART.N woman that
 ‘That woman is a teacher.’
- b. e [VP tiko] na apolo iloma ni kateni.
 3SG stay ART.N apple inside LINK box
 ‘The apple is inside of the box.’

¹⁸All Fijian data in this paper comes from elicitation sessions with two native speakers.

Imere also makes use of these constructions for some predicates, as in (64).

(64) *PP predicate with verb:*

i-mere **ee-tuu** Vanuatu.
 LOC-Mele NFUT-stand Vanuatu
 ‘Mele is in Vanuatu.’

Since this type of construction involves a verb, we can assume that it makes use of the same underlying syntax as VP-fronting, with the PP predicate functioning as a syntactic complement.

In Mayan languages like Ch’ol, nominal predicates are only possible with NPs (65a), and not with DPs (Armstrong 2009; Coon 2016). In addition, PP predicates are embedded by the stative predicate *añ* (65b).¹⁹

(65) *Non-verbal predicates in Ch’ol:*

a. [NP k-chich] aj-Maria.
 A 1-older.sister DET-Maria
 ‘Maria is my older sister.’

b. **Añ** tyi otyoty jiñi ts’i`.
 LOC PREP house DET dog
 ‘The dog is in the house.’

(Coon 2010b:29,203)

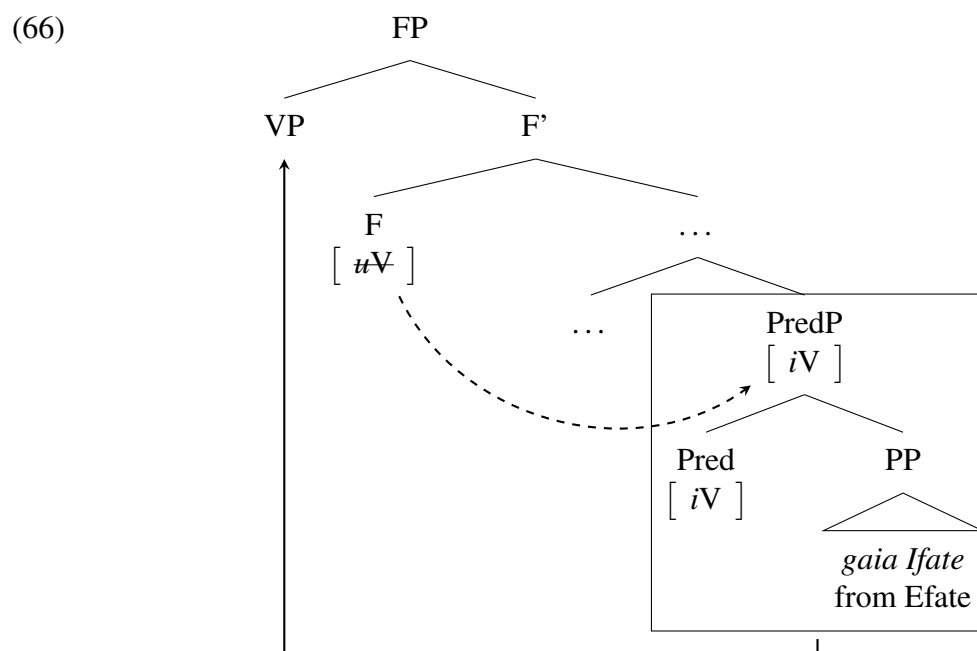
These strategies avoid the stranding problem, but are still consistent with the generalization that there is no stranding internal to DP and PP predicates.

The asymmetry between verbal and non-verbal predicates detailed above is a significant generalization that any theory of the stranding problem should account for. I propose to explain this difference in terms of the locus of the verbal feature driving movement. To start with, this difference in stranding means that it cannot be the case that fronting of a predicate PP or DP involves a fully analogous syntax. I account for the asymmetry through the idea that predicate fronting is fundamentally about moving a *verbal constituent*. To explain why VP-fronting is different from PP- or DP-fronting, I posit that fronting of non-verbal predicates too is driven by a verbal feature. In

¹⁹That constructions with *añ* have the syntax of VP-fronting is evident from the fact that a bare object may be fronted alongside it (in which the predicative PP follows), just as with verbs.

section 3.1, I proposed that fronting of a PP or DP predicate is fronting of a PredP (Bowers 1993). Pred is a functional head that allows a non-verbal predicate to be embedded in the extended verbal projection, and I suggest introduces the verbal feature [*iV*] that drives predicate fronting.

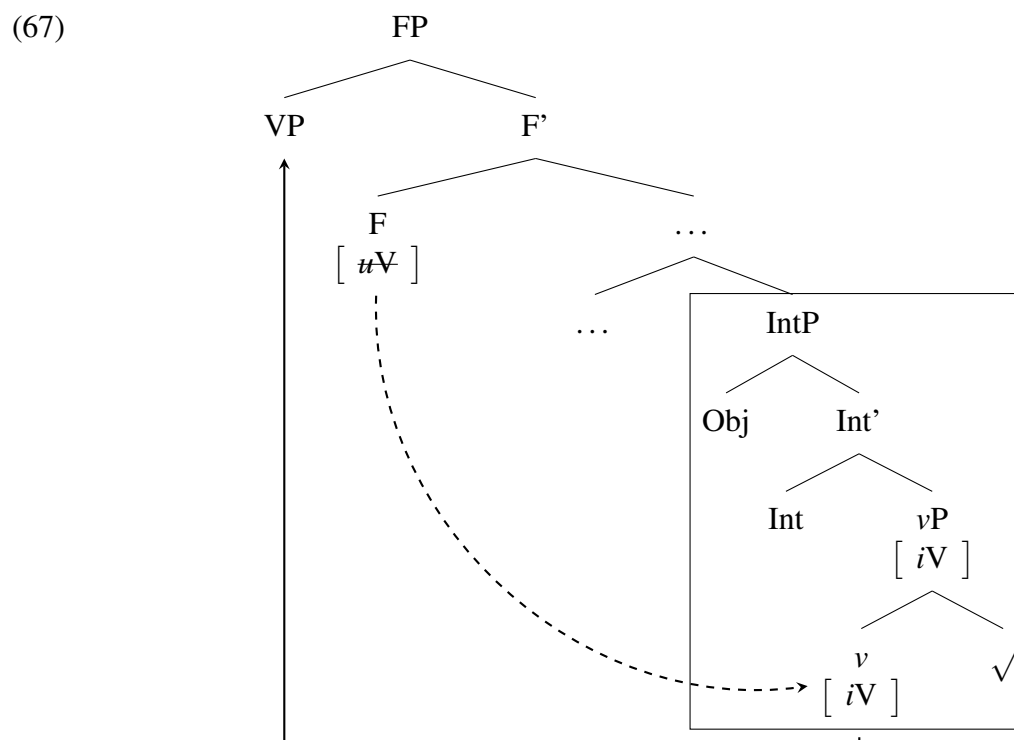
If fronting of a non-verbal predicate is movement of a verbal projection PredP, then we have a way of understanding the difference between verbal and non-verbal predicates, because the movement-driving feature is introduced at a different height in non-verbal predicates. With non-verbal predicates, the feature [*iV*] is introduced *above* the non-verbal predicate and all of its dependents, as schematized for the PP *gaia Ifate* ('from Efate') in (66).



I propose a key revision here to how the constituent relevant to **REALIZE GOAL** is determined. Suppose that the feature [*iV*] introduced by Pred is present both on Pred and on PredP, so that the label of a phrase is equivalent to the head (Chomsky 1994 et seq.), as in (66). As a result, the whole PredP is treated as the goal in an Agree relation with F, so that **REALIZE GOAL** does not require any subdeletion within this phrase.

This approach to fronting of non-verbal predicates allows for the differing behavior of verb phases to be captured. Suppose, in particular, that the category feature [*iV*] is introduced *below* all

objects and modifiers of the verb. Much recent work explores the idea that a categorizing functional head v is the first item to combine with a syntactically inert root, without category and without dependents (e.g. Borer 2005; Merchant 2018).²⁰ If correct, objects and modifiers are first Merged outside the phrase that introduces a V-feature, such as in the specifier of a dedicated head Int .²¹ As a consequence, the phrase that carries $[iV]$ in VP-fronting does not contain any objects or modifiers, in contrast to fronted non-verbal predicates. This view of VP-fronting is schematized in (67).



In this proposal, it is important that the goal for Agree need not be identical to the constituent that moves. To account for this pied-piping effect, I propose that heads in an extended projection share features (see Grimshaw 1990, Norris 2014). Every functional head above v inherits the same interpretable V-feature. I posit that, although the biggest constituent carrying the interpretable feature of the goal moves, a constraint such as **REALIZE GOAL** cares about the realization of the

²⁰I adopt Merchant's (2018) view that the selectional relationship between an internal argument and a root is mediated by v , but see Borer (2005) for an alternative approach.

²¹In this view then, all languages are underlyingly OV (if specifiers are linearized to the left). What it means for a language to be SVO is that the verb undergoes some short movement inside the verb phrase.

head that *introduces* the movement-driving feature, in this case *v*.²² In this way, the locus of the verbal feature relative to the predicate determines the outcome of distributed deletion.

This approach captures the absence of predicate fronting patterns in which only the preposition or highest nominal head moves, stranding their complements. In support of this view, note that fronted non-verbal predicates may be accompanied by a dedicated verbal morpheme, like *ko* and *hā* in Niuean (68a–b), which can be viewed as instantiations of the Pred head.

(68) *Ko and hā appear with fronted non-verbal predicates in Niuean:*

- a. [**Ko** [_{DP} e tau kamuta]] fakamua a lautolu.
 PRED ABS PL carpenter before ABS 3PL
 ‘They were carpenters before this.’
- b. [**Hā** [_{PP} he fale gagao]] a ia.
 PRED in house sick ABS 3SG
 ‘S/he is in the hospital.’

(Massam 2001:165)

A REALIZE GOAL analysis explains an important generalization about stranding in predicate fronting languages, the absence of stranding inside non-verbal predicates.²³ The key question that remains now is how to ensure that some material can survive distributed deletion, even if introduced above the categorizing head *v*. In the next section, I argue for a constraint that requires structurally reduced dependents of the verb to be realized adjacent to it, building on Clemens (2014, 2019).

4 The role of complexity in the stranding problem

In this section, I turn to the question of how some dependents of the verb come to be fronted with the verb, escaping the effects of distributed deletion. I point out eight other languages for which VP-fronting analyses have been proposed, from five different languages families, all of which run

²²It is not necessary to adopt the notion of interpretability to make this cut (see, for instance, Preminger 2014 on the issue of whether interpretability is a property of features). An alternative is to say that *v* and Pred introduces a *valued* category feature and that all functional heads above them carry unvalued version of this feature that enter into an Agree relation. If we assume a difference between Agree-Link and Agree-Copy, in the sense of Arregi and Nevins (2012), so that unvalued features do not become valued until after copy deletion has occurred, REALIZE GOAL could be restricted to valued features.

²³It is worth noting that a remnant movement analysis based on REALIZE GOAL could in principle achieve the same results, if vacating movements can be triggered to avoid later violations of REALIZE GOAL.

into the stranding problem. What fronts with the verb is always either a reduced noun, an adverbial element, or part of a complex predicate, while PPs, CPs, and full DPs are uniformly stranded. On this basis, I argue for the generalization that all dependents that front with the verb are structurally less complex than stranded material. I follow Clemens (2014, 2019) in assuming that what is different about fronted dependents is that they are non-phasal. I adopt Clemens’s ARGUMENT- ϕ , a constraint that forces elements in a selectional relationship to be adjacent if they are spelled out in the same phase, which allows structurally reduced dependents to escape distributed deletion.

4.1 The stranding problem across languages

VP-fronting has been proposed for a range of languages. But, as mentioned previously, the stranding problem arises in many of these analyses. In addition to Imere, I have identified at least eight other languages in which the stranding problem can be found: Ch’ol (Mayan), Fijian, Hawaiian, Niuean, and Samoan (Oceanic), Gitksan (Tsimshianic), Santiago Laxopa Zapotec (Zapotec), and Tenetehára (Tupí-Guaraní). In all of these languages, a phrase containing the verb and some of its dependents undergoing fronting, motivating the idea of VP-movement. At the same time, some of the verb’s dependents are obligatorily stranded. Table 1 provides an overview of which dependents are fronted and stranded in all of these languages.

(69) **Table 1. Fronting and stranding in VP-fronting across languages.**

Language family	Language(s)	Fronted material	Stranded material
Mayan	Ch'ol	Adverbial particles, Articleless nouns	DPs, PPs, CPs
Oceanic	Fijian	Adverbial particles, pronouns/proper names	DPs, PPs, CPs
	Hawaiian, Niuean,	Adverbial particles,	DPs, PPs, CPs
	Samoan	Articleless nouns	
Tsimshianic	Gitksan	Adverbial particles	DPs, PPs, CPs
Tupí-Guaraní	Tenetehára	Articleless nouns	DPs, PPs, CPs
Zapotec	S. L. Zapotec	Adverbial particles, Adjectival predicates	DPs, PPs, CPs

For reasons of space, a fuller discussion of each pattern and the literature on it is relegated to the Appendix. But, as is clear from this table, the stranding problem in VP-fronting has a similar profile across languages. What fronts along with the verb is always either a reduced noun, an adverbial element, or part of a complex predicate. In contrast, PPs, CPs, or full DPs are always stranded. A generalization about stranding then is that material that fronts with the verb is always structurally less complex than stranded material. Following Clemens (2014), I will argue that this difference in complexity ultimately reflects a difference in phasal status.

Let me first briefly describe the findings summarized in Table 1 in more detail. First, in all languages in which some nouns move with the fronting VP, there is a correlation between the presence of DP structure and fronting, so that full DPs appear to be stranded. In Niuean, for instance, nominals without a case marker appear in the fronted VP, but nominals with a case markers are stranded (70a–b).

(70) *Reduced nouns and particles are not stranded in Niuean:*

- a. [VP Takafaga **ika tūmau nī**] a ia.
 hunt fish always EMPH ABS he

‘He is always fishing.’

- b. [VP Takafaga tūmau nī] e ia [DP e tau ika].
 hunt always EMPH ERG he ABS PL fish
 ‘He is always fishing.’

(Massam 2001:157)

Similar facts are found in Hawaiian and Samoan (e.g. Medeiros 2013; Collins 2017). In Ch’ol (Coon 2010a; cf. Clemens and Coon 2018a,b) and Tenetehára (Duarte 2012), nominals without determiners front, but nominals with a determiner are stranded. The same correlation obtains in Fijian, but in a way that provides key evidence that this generalization is syntactic, not semantic. In Fijian, object pronouns and proper names do not carry their article *ko/o* and they surface in the fronted VP (71a). In contrast, common nouns appear outside the VP with their article *na* (71b) (Alderete 1998, Aranovich 2013).

(71) *Fijian fronted VP contains articleless objects:*

- a. e a [VP kau-ti au/Jone mai] ko Eroni.
 3SG PST bring-TR.PR 1SG/Jone DIR DET.PR Eroni
 ‘Eroni brought me/Jone.’
- b. e a [VP kau-ta mai] na ilokoloko ko Eroni.
 3SG PST bring-TR.N DIR DET.N pillow DET.PR Eroni
 ‘Eroni brought the pillows.’

This pattern demonstrates that whether a noun is fronted is not determined by a semantic property of the object, but by whether there is DP structure. In all the other fronting patterns, only common nouns appear in the fronted VP, exactly those phrases that are stranded in Fijian.

A second crosslinguistic generalization in Table 1 is that fronted VPs contain adverbial elements in many languages, as in Imere. In the other Oceanic languages, these adverbs occur in the same position as in Imere, at the end of VP constituent, arranged in inverse order (e.g. Alderete 1998; Massam 2010; Aranovich 2013; Clemens 2014). In Ch’ol, Gitksan, and Santiago Laxopa Zapotec, some low adverbs also appear with the verb, but before it (72a–c).

(72) *Low adverbs before the verb in predicate fronting:*

- a. Tyi k-[_{VP} **wiñ** cha`le soñ].
 PRF A1 a.lot do dance
 ‘I danced a lot.’ (Ch’ol; Coon 2010a:373)
- b. [_{VP} **t’ek’il** **suwi** k’eeqw] =hl xpts’exw-it hlgu gyet.
 curled.up away flee =CN afraid-SX little man
 ‘The frightened little guy took off right away.’ (Gitksan; Forbes 2018:147)
- c. [_{VP} **Chintje**’ bta] Sonia=’n zah.
 just stir.COM Sonia=DEF bean
 ‘Sonia just stirred the beans.’ (SLZ; Adler et al. 2018:39)

A consistent picture of the stranding problem comes out of this crosslinguistic comparison. What fronts with the verb is a reduced noun or an adverbial element, in Oceanic languages, Ch’ol, and Tenetehára, or a nonverbal element, as in Santiago Laxopa Zapotec. Full DPs, PPs, and CPs are never stranded. Material that moves with the verb is structurally less complex than stranded material. All dependents that front can be realized as a single word, at least sometimes, while all material that is always a phrase is also always stranded. In the next section, I propose that this generalization reflects a difference in phasehood, following Clemens (2014, 2019).

4.2 Phasehood and stranding

The difference in structural size between fronted and stranded material evident in the previous section cannot be treated as a difference between heads and phrases. It might seem tempting to account for this difference by treating all apparent VP-fronting as head movement, which may pick up other heads and form a complex word. But we have already seen for Imere that the initial VP is a phrasal constituent and not a complex word. Similarly, in Ch’ol, Hawaiian, and Niuean, the reduced noun in the fronted VP can be a phrase, modified by adjectives and other elements (73a–d).

(73) *Reduced noun in Ch’ol, Hawaiian, and Niuean is phrase:*

- a. Tyi i- [_{VP} tsāñ-s-ä **cha`-kojty** **kolem wakax**] k-papa.
 PRF A3 die-CAUS-TV two-NC.4legs big cow A1-father
 ‘My father killed two big cows.’ (Ch’ol; Coon 2010a:361)
- b. [_{VP} Inu **kope** **hu’ihu’i**]’o Noelani.
 drink coffee cold SUBJ Noelani
 ‘Noelani is drinking cold coffee.’ (Hawaiian; Medeiros 2013)

- c. Ne [VP inu **kofe kono**] a Mele.
 PST drink coffee bitter ABS Mele
 ‘Mary drank bitter coffee.’
- d. Ne [VP kai **sipi mo e ika mitaki**] a Sione.
 PST eat chip COM ABS fish good ABS Sione
 ‘Sione ate good fish and chips.’ (Niuean; Massam 2001:158,160)

The same effect can be found in Fijian. Pronoun and proper name objects inside the fronted VP can be part of complex constituents, like a disjunctive phrase or an appositive construction (74a–b).

(74) *Common noun in disjunct inside fronted VP:*

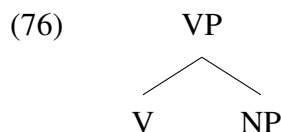
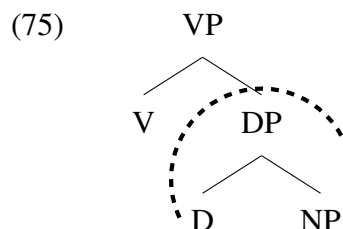
- a. iko a [VP rai-ci [**Eroni se na koli**] tiko]
 2SG PST see-TR.PR Eroni or ART.N dog PROG
 ‘You were seeing Eroni or the dogs.’
- b. e a [VP diri-ki [**rau_i na niu_i**] ko Eroni.
 3SG PST crack-TR.PR 3DU ART.N coconut ART.PR Eroni
 ‘Eroni cracked the coconuts (dual).’

Finally, many of these languages allow fronted non-verbal predicates, like Imere, which may be phrasal and so cannot have undergone head movement. Any structural difference between fronted and stranded material must be about different types of phrases rather than a distinction between phrases and heads.

Following Clemens (2014), I propose to understand the role of structural complexity as a difference in phasehood (Chomsky 2001), so that all stranded material corresponds to a phase and all fronted material is non-phasal. Phasehood is a structural property of phrases that allows us to understand what it means for one type of phrase to be more complex than another. More complex phrases are more likely to include a phasal boundary. In addition, DPs, PPs, and CPs are commonly thought to constitute phases. Finally, an approach based on phases may provide an understanding of why some adverbial elements front with the verb in Ch’ol, Fijian, Gitksan, Imere, and Niuean, while other adverbs are stranded, if it is assumed that adverbs too come in phasal and non-phasal variants.

To see how phasehood can play a role in VP-fronting, let me review Clemens’s (2014, 2019) account of the correlation between the presence of articles and stranding. As we saw in section 4.1,

nominals with articles must be stranded in Ch’ol, Fijian, Hawaiian, Niuean, Samoan and Tenetéhara, while nominals without a DP layer are fronted. Clemens proposes that this correlation reflects a difference in phasehood, on the assumption that the DP layer contributes a phasal boundary (75). Nominals without articles lack a DP layer and are non-phasal (76).



The second ingredient of Clemens’s account is a constraint ARGUMENT- ϕ , which forces a head and its complement to be adjacent, stated in (77).²⁴

- (77) **Argument condition on phonological phrasing (ARGUMENT- ϕ):** A head and its internal argument(s) must be adjacent sub-constituents (of a phonological phrase).

ARGUMENT- ϕ is a PF constraint, evaluated at Spell-Out. It encodes the intuition that languages generally prefer for elements in a selectional relationship to remain adjacent. ARGUMENT- ϕ also explains why reduced objects should be able to survive distributed deletion, if a constraint like ARGUMENT- ϕ outranks REALIZE GOAL in languages in which the object is fronted with the verb. The tableau in (79) illustrates for the Ch’ol VOS example in (78).

- (78) *VOS in Ch’ol:*

Tyi [VP i-kuch-u si`] aj-Maria.
 PRF A3-carry-TV wood DET-Maria
 ‘Maria carried wood.’

(Ch’ol; Coon 2010a:355)

(79)

Input: [V NP _{OBJ}] DP _{SUBJ} [V NP _{OBJ}]	ARG- ϕ	REALIZEG	CONTIGUITY
a. [V NP] DP [V NP]		*	
b. [V NP] DP [V NP]	*!		*

²⁴As Clemens notes, ARGUMENT-*varphi* is similar in spirit to Richards’s (2016) Selectional Contiguity.

By assumption, the object *si'* ('wood') in (78) is an NP, since no determiners are allowed in VOS word order. The candidate (b) with distributed deletion then violates ARGUMENT- ϕ , because the verb and object are not adjacent. As a result, despite the violation of REALIZE GOAL incurred by candidate (a), the VP is faithfully realized.

All else being equal, ARGUMENT- ϕ should have the same effect for DP objects. To understand the role of phasehood, however, Clemens proposes that ARGUMENT- ϕ is only evaluated by phase, on the assumption that every phase triggers Spell-Out. Because a DP object introduces its own phasal boundary, the verb and DP are not evaluated for ARGUMENT- ϕ in the same phasal domain.²⁵ As a result, ARGUMENT- ϕ is satisfied vacuously in each phase in which it is evaluated, both the DP and ν P.²⁶ Concretely, Clemens suggests that the selectional relations visible to ARGUMENT- ϕ are kept track of by looking at syntactic objects that share a categorial feature (on the assumption that selection is featural). Since the selectional features on DP will no longer be accessible in the ν P phase, the verb and DP are treated as if they are not in a selectional relationship. In this architecture then, ARGUMENT- ϕ will only enforce adjacency of a head and any non-phasal complements.

I propose to generalize this account to adverbial particles as well, on the assumption that these too are non-phasal dependents of the verb. Clemens's (2014, 2019) constraint is restricted to head-complement structures, but I suggest that the same pressure affects the relationship between a verb and its adjuncts. Specifically, I adopt the idea that adjuncts select for the phrase they attach to (e.g. Ernst 2001), mediated by a featural relationship analogous to the one that holds between a verb and an internal argument. An alternative is Cinque's (1999) cartographic approach to adverbials, in which they are specifiers of dedicated functional heads. In this view too, adverbial elements are in a selectional relationship with the extended verbal projection. If correct, then a constraint like ARGUMENT- ϕ will also apply to this relationship. Note finally that Clemens's constraint

²⁵See also Compton and Pittman (2010) for the role of phases in determining where dependents of the verb are realized.

²⁶It is important in this approach that Spell-Out of a phasal domain includes the head, so that the entirety of the DP is spelled out in the DP phase, at least for the purposes of realization. See Simpson and Wu (2002), Fox and Pesetsky (2005), and Sato and Dobashi (2016) for relevant discussion.


is stated in terms of prosodic structure. Clemens (2021) provides an overview of evidence that, in verb-initial languages with predicate fronting, the verb and fronted dependents indeed form a prosodic constituent. In Imere too, there is evidence that adverbial particles may be prosodically weak constituents (see section 4.3).

This account allows us to explain why adverbial particles survive deletion, while objects and modifiers are stranded, as in examples like (80). I propose that Imere has the ranking ARGUMENT- ϕ >> REALIZE GOAL >> CONTIGUITY, as demonstrated in (81).

(80) *Imere VP with adverbial particle before object:*

au fago-na maruuruu aia.
 1SG wake.up-TR slowly 3SG
 ‘I woke him/her slowly.’

(81)

Input: [V Obj Prt] ... [V Obj Prt]	ARG- ϕ	REALIZEG	CONTIGUITY
 a. [V Obj Prt] ... [V Obj Prt]		*	*
b. [V Obj Prt] ... [V Obj Prt]		**!	
c. [V Obj Prt] ... [V Obj Prt]	*!		*

Candidate (b), with faithful realization of the fronted VP violates REALIZE GOAL, because neither the DP object or adverbial particle carries the movement-driving feature. On the assumption that Imere adverbial particles are non-phasal, candidate (c), with deletion of both the adverbial particle and the object, violates ARG- ϕ , because the adverbial particle must be realized adjacent to the verbal constituent it selects for. Deletion of the object, however, does not violate ARG- ϕ , on the assumption that copy deletion is assessed on a phase-by-phase basis. As in Clemens (2014, 2019), the DP object is a phase, and so has already undergone Spell-Out.²⁷ Note that candidates with multiple postverbal particles will work much the same way. The selectional relationship relevant to ARGUMENT- ϕ is the one between the adverbial element and the verbal phrase it attaches to. An

²⁷It is important in this account, as in Clemens (2014, 2019), that predicate fronting does not cross a phase boundary.

adverbial particle must then be adjacent merely to the phrase that it Merged to, which may include other postverbal particles without violation of ARGUMENT- ϕ .

The fact that bare objects and adverbial particles that front with the verb can be phrasal follows under this approach, as long as the object or particle is not a phase. An interesting property of NP objects that front in some languages, however, is that they can contain material that would otherwise be stranded. In Niuean and Fijian, as noted in section 4.1, a fronted determinerless object can contain an object with article, in the appositive in (82a) or the comitative construction in (82b).

(82) *Fijian/Niuean articleless objects can be modified by DP:*

- a. e a [VP diri-ki [rau_i na niu_i]] ko Eroni.
 3SG PST crack-TR.PR 3DU ART.N coconut ART.PR Eroni
 ‘Eroni cracked the coconuts (dual).’ (Fijian)
- b. Ne [VP kai sipi mo e ika mitaki] a Sione.
 PST eat chip COM ABS fish good ABS Sione
 ‘Sione ate chips with good fish.’ (Niuean; Massam 2001:158,160)

The DPs *na niu* (‘the coconuts’) and *e ika mitaki* (‘good fish’) would be stranded if in object position. This effect is surprising, since REALIZE GOAL should in principle force these DPs to be stranded.

There is some evidence that stranding of complex material is also possible in a similar configuration. We saw previously that, in Imere, an adverbial particle can modify another (83).

(83) *Wh-particle fefea can modify other particles:*

- Ka fee-fe [maruuruu fefea] atusi?
 DEP.2SG read-TR slowly how book
 ‘How slowly did you read the book?’

Imere adverbs also combine with a comparative phrase, using the verb *siria* ‘exceed’ (84).²⁸

(84) *Comparative modifying adverb maruuruu:*

- Au fago-na aia maruuruu siri-a akoe.
 1SG wake.up-TR 3SG slowly exceed-TR 2SG
 ‘I woke her/him up more slowly than you did.’

²⁸As discussed in section 4.2, *maruuruu* can be an adverbial particle or an adverb that is stranded.

When a comparative phrase modifies an adverbial particle, it must be stranded (85a), and cannot appear with the adverbial particle (85b).

(85) *Comparative phrase modifying adverbial particle must be stranded:*

- a. *Au fago-na maruuruu **siri-a** **akoe** aia.
1SG wake.up-TR slowly exceed-TR 2SG 3SG
‘I woke her/him up more slowly than you did.’
- b. Au fago-na maruuruu aia **siri-a** **akoe**.
1SG wake.up-TR slowly 3SG exceed-TR 2SG
‘I woke her/him up more slowly than you did.’

The availability of stranding the comparative follows from a distributed deletion account. The adverbial particle and the comparative phrase form a constituent, but are pronounced in different copies of the fronting VP, to minimize violations of REALIZE GOAL. A question is how to allow for cases in which material inside a fronted object is not stranded, as in (82a–b). I propose that CONTIGUITY constraints can be category-specific, so that it is possible to rank a CONTIGUITY constraint specific to NPs (CONTIGUITY-NP) differently to one for VPs. As long as CONTIGUITY-NP outranks REALIZE GOAL, keeping a determinerless object intact is preferred to stranding.

In this way, an approach that is sensitive to the structural complexity of dependents of the verb accounts for the profile of the stranding problem across VP-fronting languages and explains what type of material can appear fronted alongside the verb.

4.3 Word minimality and phasehood in Imere

The account developed here posits a difference in phasehood between an adverbial particle that fronts with the verb and an adverb that is stranded. This section presents independent evidence for this difference in complexity. Although it is difficult to probe this question with syntax-internal diagnostics, since we are dealing with small structures, I demonstrate in this section that there is morphophonological evidence that adverbial particles are less complex, which I link to phasehood.

Imere words must generally be at least trimoraic (Clark 1975, 2002). Many roots in Imere are CVV or CVCV in shape and so always appear with an affix (86a–b).

(86) *CVV or CVCV roots are affixed:*

- a. au **tee**-kai totea.
1SG FUT-eat afternoon
'I will eat in the afternoon.'
- b. au **kuu**-fano gaia i-Mere.
1SG PERF-go.SG to LOC-Mele
'I have been to Mele.'
- c. avau rogo-**na** akoe.
1SG listen-TR 2SG
'I am listening to you.'

We can demonstrate that trimoraicity is the result of a minimality requirement because of affixes that only appear when a word would otherwise have less than three moras. On verbs, the non-future prefix is obligatory on bimoraic verbs (87a–b):

(87) *Non-future prefix obligatory on bimoraic verbs:*

- a. au **wee**-nofo.
1SG 1SG.NFUT-stay
'I am staying.'
- b. mateu mat **ee**-fura gaia te-stoa.
1EXCL.PL 1EXCL.NSG NFUT-run.NSG to DET.SG-store
'We (exclusive, plural) will go to the store.'

But verbs with more than three moras, usually affixed forms, cannot surface with the prefix (88a–b).

(88) *No non-future prefix on verbs with at least three moras:*

- a. avau **rogo-na** akoe.
1SG listen-TR 2SG
'I am listening to you.'
- b. au **torotoro**.
1SG sweat
'I sweated.'

The locative prefix *i-* and plural prefix *a-*, which appear on nouns, have the same distribution.

This minimality requirement provides a way of diagnosing prosodic words. Interestingly, a number of functional items do not need to be trimoraic, like subject clitics and demonstratives. The

table in (89) divides constituents in Imere by word minimality.

(89)	Must be trimoraic	Not always trimoraic
	Verbs	Subject clitics
	Nouns/Pronouns ²⁹	Conjunctions
	Adjectives	Demonstratives
	Prepositions	Complementizers
	Adverbs	Adverbial particles

As evident in this table, of all VP-internal material, only adverbial particles do not need to obey word minimality. A representative sample of adverbial particles is given in (90).

(90) **Imere adverbial particles**

<i>sorookina</i>	‘all’	<i>mataakina</i>	‘well’	<i>nefea</i>	‘when’
<i>mai</i>	DIR.SP	<i>kee</i>	NEG	<i>fefea</i>	‘how’
<i>atu</i>	DIR.ADDR	<i>age</i>	DIR	<i>pelepele</i>	‘fast’
<i>ana</i>	‘still’	<i>soina</i>	‘also’	<i>fooki</i>	‘again’
<i>tlasia</i>	‘enough’	<i>maruuruu</i>	‘slowly’	<i>faariki</i>	‘soon’

Some adverbial particles are longer than three moras, like *sorookina* or *maruuruu*, but there are a number of bimoraic particles, such as the negative particle *kee* and the directional particles *mai*, *age*, and *atu*. In contrast, pronouns, nouns, prepositions, and adverbs all obey minimality, so that all other dependents of the verb contain at least a trimoraic prosodic word.³⁰

Recall that I argued that adverbial particles are non-phasal, while all other VP-internal material is associated with phasal architecture. I propose to understand the difference in word minimality by linking it to phasehood (see also Piggott 2010). Many researchers have explored the idea that phases map systematically onto prosodic domains (see Kahnemuyipour 2004, Adger 2007, Ishihara 2007, Kratzer and Selkirk 2007 for similar proposals). Suppose that Imere has a constraint requiring that a phase must minimally correspond to a prosodic word (91).

(91) **MATCH-PHASE: A phase must correspond (at least) to a prosodic word.**

³⁰There is one exception in the subject pronouns. The 1SG pronoun *avau* alternates with the form *au*. Since all other pronouns do obey word minimality, I treat this as an exceptional form.

The constraint MATCH-PHASE ensures that DPs, PPs, and CPs, always contain a prosodic word, a trimoraic word. Adverbial particles are non-phasal, and so may consist of smaller prosodic constituents, like feet. In this view, adverbial particles are associated with two prosodic structures. Bimoraic particles are feet, while larger particles, like *pelepele* ('fast'), are prosodic words.

Evidence for the suggested relationship between stranding and the word minimality requirement comes from the observation that many trimoraic particles are also capable of being stranded. The manner adverb *maruuruu* 'slowly' can be an adverbial particle, but also a stranded adverb (92a–b).

(92) *Maruuruu can be adverbial particle and stranded adverb:*

- a. au fago-na **maruuruu** aia.
1SG wake.up-TR slowly 3SG
'I woke her/him up slowly.'
- b. au fago-na aia **maruuruu**.
1SG wake.up-TR 3SG slowly
'I woke her/him up slowly.'

Similar freedom is observed with other trimoraic particles, such as *fefea* 'how' and *nefea* 'when' (93a–b), and also *faariki* 'soon', *pelepele* 'fast', and *fooki* 'again'.³¹

(93) *Trimoraic particles can be stranded:*

- a. akoe ka k-ounu a-vai **fefea**?
2SG DEP 2SG-drink PL-water how
'How do you drink water?'
- b. akoe ka k-ounu a-vai **nefea**?
2SG DEP 2SG-drink PL-water when
'When did you drink water?'

In contrast, none of the bimoraic particles ever tolerate stranding (94a–c).

(94) *Bimoraic particles cannot be stranded:*

- a. *Au ounu a-vai **ana**.
1SG drink PL-water still
'I still drink water.'

³¹The correlation is not perfect, though. *Mataakina* 'well', *sorookina* 'all', and *tlasia* 'enough' resist stranding.

- b. *Avau toova akoe **mai** gaia kina.
 1SG bring 2SG DIR.SP to 3SG.LOC
 ‘I brought you here.’
- c. *Aia pilti fare **kee**.
 3SG build house NEG
 ‘S/he doesn’t build houses.’

This difference between bimoraic and longer particles follows if an adverb in Imere may optionally be associated with a phasal structure (independently necessary for adverbs that must be stranded, like *naanafi* ‘yesterday’). Particles that are prosodic words are capable of surfacing in a full phasal structure, because they can satisfy MATCH-PHASE. Bimoraic particles, however, cannot satisfy MATCH-PHASE without violating constraints on word minimality.³² In this way, Imere morphophonology provides independent evidence for the underlying difference in phasal status proposed here.

4.4 \bar{A} -movement of VPs

Before concluding, let me briefly discuss whether distributed deletion derivations of the type suggested for predicate fronting here might be expected in other contexts. This paper has focused so far on instances of VP-fronting that establish basic word order. However, it is well-known that many languages appear to movement of the VP into the left periphery as well, with familiar information-structural consequences, as in Hebrew or Limbum (95a–b).

(95) *VP-fronting into the left periphery:*

- a. Liknot et ha-praxim, hi kanta.
 buy.INF ACC the-flowers she bought
 ‘As for buying the flowers, she bought them.’ (Hebrew; Landau 2006:37)
- b. á r-[yū msāg] njígwè fō bí gī.
 FOC 5-buy rice woman DET FUT1 do
 ‘The woman will BUY RICE.’ (Limbum; Hein 2018:3)

³²In this view, there is no fundamental difference between what I have called adverbial particles and adverbs. All are adverbs categorically, but some may appear with less functional structure. A prediction of this account is that there may be adverbial particles that are introduced too high to be in the fronting phrase. Indeed, Clark (2002) identifies the polar question particle *pe*, which appears sentence-finally and does not obey the word minimality requirement.

In principle, distributed deletion could be available for VP-fronting of this sort. However, an important difference between VP-fronting cases like (95a–b) and predicate fronting is the fact that the information-structural effects of VP-fronting are typically associated with the whole VP. For example, in (95b), it is the whole VP that is in focus. If focus is taken to be the movement-driving feature, then that feature is presumably associated with the whole VP. As a result, the constraint that achieves distributed deletion in the current proposal, *REALIZE GOAL*, should not affect such constructions.

Remnant VP-fronting derivations have been proposed for verb-fronting constructions, as in German or Hebrew (96a–b) (e.g. Den Besten and Webelhuth 1990, Müller 1998; Hein 2018).

(96) *V-fronting into the left periphery:*

- a. **lirkod**, Gil lo yirkod ba-xayim.
 dance.INF Gil not will.dance in.the-life
 ‘As for dancing, Gil will never dance.’ (Hebrew; Landau 2006:6)
- b. **Gelesen** hat das Buch keiner.
 read has the book no.one
 ‘As for reading, no one has read the book.’ (German; Müller 1998)

Under the current account, some of these constructions could make use of distributed deletion.

A question that arises is whether there are languages in which a reduced object or adverb fronts with the verb as well, when it can be shown that it is only the verb that is associated with the topic/focus interpretation. I offer one possible explanation of why V-fronting may not run into the same distributed deletion problem. A number of authors have argued that constructions like (96a–b) involve long verb movement instead (e.g. Landau 2006; Vicente 2007; Harizanov 2016). Cable (2007, 2010) develops a theory in which all \bar{A} -movement involves Merge of a topic/focus particle with the phrase that will undergo movement, a Q particle. In this view, all \bar{A} -movement is in fact QP movement, triggered by features of the Q head. If this perspective on \bar{A} -dependencies is correct, it would predict no stranding problem with VP/V-fronting that is analogous to VP-fronting for basic word order. The constituent that is Merged with a Q particle will always move without violating *REALIZE GOAL*. In cases like (96a–b), the Q particle would attach directly to the verb, with no

intervening material.³³

There are a number of other questions that I will leave for future research, but briefly note here. One prediction of the current account is that there may be alternations in the DP domain as well that reflect NP-movement and distributed deletion. Some of the mismatches between scope and word order attributed by Belk and Neeleman (2017) to an independent constraint forcing adjacency of adjectives and nouns look like possible candidates. Another prediction is that distributed deletion in a domain without reduced dependents could deliver phrasal movement that looks like head movement. Such an account is promising for verb-initial languages in which only the verb moves, but non-verbal predicates may front as phrases, like Irish (*cf.* Carnie 1995, Legate 1996).

Concluding remarks

This paper has addressed a problem in the literature on crosslinguistic variation in word order, the observation that some VP-internal material cannot be fronted in many VP-fronting languages. I first presented a new case of VP-fronting, in the SVO language Imere, motivated by the placement of adverbial particles. I argued for a distributed deletion approach to stranding (Fanselow and Ćavar 2001), driven by a constraint which favors realization only of the main predicate. This approach provides a way of understanding the stranding problem and derives the generalization that stranding is not found internal to fronted non-verbal predicates. In addition, this proposal extends to eight other VP-fronting languages and can account for a crosslinguistic correlation between complexity and stranding, building on Clemens (2014, 2019). The account developed here may offer insight into other cases in which surface order seems to conflict with well-established assumptions about underlying structure.

³³This perspective essentially inverts the traditional description of pied-piping, in the sense that there is no true pied-piping in \bar{A} -movement in Cable's approach. In contrast, VP-fronting for word order in my approach involves a kind of pied-piping, through feature sharing between heads in the same extended projection.

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Appendix: Overview of predicate fronting languages

In this appendix, I provide a detailed look at the stranding problem in other languages for which VP-fronting has been proposed. Let me start by looking at a number of other Oceanic languages, Fijian, Hawaiian, Niuean, and Samoan. As mentioned several times, Niuean allows nominals without a case marker to appear in the fronted VP. In addition, as in Imere, a range of adverbial particles surface in the fronted VP (97a), arranged in inverse order (Massam 2010). However, any nominal with a case marker is obligatorily stranded (97b). Similarly, PP and CP complements and modifiers must be stranded (97c–d).

(97) *Reduced nouns and particles are not stranded in Niuean:*

- a. [VP Takafaga **ika tūmau nī**] a ia.
 hunt fish always EMPH ABS he
 ‘He is always fishing.’
- b. [VP Takafaga tūmau nī] e ia [DP **e tau ika**].
 hunt always EMPH ERG he ABS PL fish
 ‘He is always fishing.’ (Massam 2001:157)
- c. Ne [VP tala aga] e ia e tala [PP **ke he tagata**].
 PST tell DIR ERG 3SG ABS story GOAL LOC man
 ‘S/he told the story to the man.’ (Massam 2010:274)
- d. [VP Gagoa foki nī] a au [CP **he hifo a Maka ki tahi**].
 sick also EMPH ABS 1SG C go.down ABS Maka to sea
 ‘I’m also sick of Maka going down to the sea.’ (Massam 1995:86)

Similar facts are found in Hawaiian and Samoan (e.g. Medeiros 2013; Collins 2017).

As noted in the main text, a variant of this pattern is found in Fijian, which highlights the role of structural complexity in stranding. Like the other Oceanic languages described here, Fijian has a series of adverbial particles that attach in inverse order, commonly assumed to be part of an initial VP constituent (e.g. Alderete 1998; Aranovich 2013) (98a–b).

(98) *Fijian adverbial particles attach to fronted VP in inverse order:*

- a. e a [VP moce **tiko**] ko Eroni.
 3SG PST sleep PROG ART.PR Eroni

‘Eroni was sleeping.’

- b. e a [VP tu **cake tiko**] o Koini.
 3SG PST stand up PROG ART.PR Koini
 ‘Koini was standing up.’

In addition, Fijian also requires that all PPs and CPs are stranded, as diagnosed by the fact that such elements must follow adverbial particles (99a–d).

(99) *Fijian PPs and CPs vacate the VP:*

- a. e a [VP vosa tiko] [PP **vei Jone**] ko Eroni.
 3SG PST talk PROG to.PR Jone DET.PR Eroni
 ‘Eroni talked to Jone.’
- b. *e a [VP vosa [PP **vei Jone**] tiko] ko Eroni.
 3SG PST talk to.PR Jone PROG ART.PR Eroni
 ‘Eroni talked to Jone.’
- c. au [VP kila-a tiko] [CP **ni o iko vuku**].
 1SG think-TR.N PROG C DET.PR 2SG smart
 ‘I am thinking that you are smart.’
- d. *au [VP kila-a [CP **ni vuku ko Eroni**] tiko].
 1SG know-TR.N C smart ART.PR Eroni PROG
 ‘I am thinking that Eroni is smart.’

As in Niuean, Hawaiian, and Samoan, the fronted VP can also contain a reduced object, depending on the absence or presence of an article. But in Fijian pattern it is pronouns and proper names that appear in the fronted VP, not common nouns. In object position, proper names and pronouns surface in the fronted VP without their article (*ko/o*) (100a), as diagnosed by their position relative to adverbial particles. In contrast, common nouns must appear outside the VP with their article (*na*) (100b).

(100) *Fijian fronted VP contains articleless objects:*

- a. e a [VP kau-ti **au/Jone mai**] ko Eroni.
 3SG PST bring-TR.PR 1SG/Jone DIR DET.PR Eroni
 ‘Eroni brought me/Jone.’
- b. e a [VP kau-ta **mai na ilokoloko**] ko Eroni.
 3SG PST bring-TR.N DIR DET.N pillow DET.PR Eroni

‘Eroni brought the pillows.’

Across Oceanic languages then, the stranding problem takes a similar shape. There is a clear correlation between stranding and the absence of an article. Nominals without an article front with the verb, whether they are common nouns or pronouns/proper names, and nominals with an article are always stranded. In addition, all Oceanic languages require that adverbial particles move with the verb, while PPs and CPs are stranded.

The stranding problem arises in other language families as well, however, specifically Ch’ol (Mayan), Gitksan (Tsimshianic), Santiago Laxopa Zapotec (Zapotec), and Tenetehára (Tupí-Guaraní). As we will see, stranding has a similar profile. Let me start with Coon’s (2010a) VP-fronting analysis of Ch’ol (*cf.* Clemens and Coon 2018a,b). Like Oceanic languages, Ch’ol shows a correlation between VOS/VSO and the presence of a determiner on the object, as demonstrated in (101a–b).

(101) *Ch’ol has VOS/VSO alternation based on article:*

- a. Tyi i-[_{VP} kuch-u **si`**] aj-Maria.
PRF A3- carry-TV wood DET-Maria
‘Maria carried wood.’
 - b. Tyi i-[_{VP} kuch-u] aj-Maria **jiñi si`**.
PRF A3- carry-TV DET-Maria DET wood
‘Maria carried the wood.’
- (Ch’ol; Coon 2010a:355)

As in the other VP-fronting languages discussed, CPs and PPs surface outside the VP, in a stranded position (102a–b).

(102) *CPs and PPs are stranded in Ch’ol:*

- a. Choñkol i-[_{VP} ch’il ja`as] aj-Doris [_{CP} **cheñak tyi k’oty-i-yoñ**].
PROG A3- fry banana DET-Doris when PRF arrive.there-ITV-B1
‘Doris was frying bananas when I arrived.’
 - b. Tyi i-[_{VP} julu bajlum aj-More [_{PP} **tyi matye’el**].
PRF A3- shoot jaguar DET-More PREP jungle
‘More shot a jaguar in the jungle.’
- (Clemens and Coon 2018b:9)

Coon also points out that, as in Oceanic languages, some low adverbial elements can surface alongside the verb, as demonstrated in (103a–b). Unlike in Oceanic, these adverbs surface before the verb.

(103) *Low adverbs in fronted VP in Ch'ol:*

a. Tyi i-[_{VP} **cha`** boñ-o otyoty] jiñi wiñik.
PRF A3- again paint-TV house DET man
'The man painted the house again.'

b. Tyi k-[_{VP} **wiñ** cha`le soñ].
PRF A1 a.lot do dance
'I danced a lot.'

(Ch'ol; Coon 2010a:373)

Gitksan is a VSO Tsimshianic language spoken in British Columbia. Forbes (2018) proposes that verb-initial order is established through remnant VP-fronting, on the basis of the observation that the initial verb is preceded by a set of low adverbs (104a–b).

(104) *Low adverbs in fronted VP in Gitksan:*

a. [_{VP} **sagayt** ixsda-in-ə-'y] =hl hun k'uxhl gan-t=hl laaxw.
together tasty-CAUS-TR-1SG.II =CN salmon halibut PCNJ-3II-CN trout
'I like to eat salmon, halibut, and trout.'

b. [_{VP} **t'ek'il** **suwi** k'ee kw] =hl xpts'exw-it hlgu gyet.
curled.up away flee =CN afraid-SX little man
'The frightened little guy took off right away.' (Gitksan; Forbes 2018:23,147)

These adverbs encode meanings typical of VP-internal adverbs, but appear in the left periphery with the verb, before all other arguments and modifiers. To capture this pattern, Forbes suggests low adverbs are included in a VP constituent that fronts.

In this analysis, all DPs are stranded (105a). In addition, as shown in (105b–c), CPs and PPs must also be stranded.

(105) *DPs, CPs, and PPs stranded in Gitksan:*

a. [_{VP} Gi'nam-ə-t] =s Henry [_{DP} =hl **wineex**] a-t=s Aidan.
give-TR-3II =DN Henry =CN food OBL-3II=DN Aidan
'Henry gave food to Aidan.'

- b. [VP 'Min lux-lukw] =hl gyat [CP win=t gya'a-diit sii-sgals-m
upward PL-surprise =CN people COMP=3I see-3PL.II new-purchase-ATTR
gayt-t=s Michael.
hat-3II=DN Michael
'The people were surprised when they saw Michael's new hat-buy.'
- c. Gi'nam-i-'y=hl majagalee [PP a-t=s Michael].
give-TR-1SG.II=CN flower PREP-3II=DN Michael
'I gave flowers to Michael.' (Gitksan; Forbes 2018:22,119,160)

Santiago Laxopa Zapotec (SLZ) is a Zapotec language spoken in Mexico. Adler et al. (2018) propose that verb-initial word order is derived through VP-fronting (see also Lee 2006). SLZ displays rigid VSO order (106a–b).

(106) *VSO word order in Santiago Laxopa Zapotec:*

- a. Dzut nu'ule='n bene' xyage'=n.
hit.CONT woman=DEF CL man=DEF
'The woman is hitting the man.'
- b. Udoo Juan=a' yet=e'n xtido'-yes.
eat.COMP Juan=DEF tortilla=DEF quickly-INT
'Juana ate tortillas quickly.' (SLZ; Adler et al. 2018:32,34)

Adler et al. motivate a VP-fronting analysis of SLZ with the observation that a number of dependents of the verb can appear alongside it. As in Gitksan, there is a class of low adverbs that obligatorily appear just before the verb, like *chintje* ('just') (107a–c).

(107) *Some low aspectual adverbs appear just before the verb in SLZ:*

- a. [VP **Chintje'** bta] Sonia='n zah.
just stir.COM Sonia=DEF bean
'Sonia just stirred the beans.'
- b. *[VP bta] Sonia='n zah **chintje'**.
stir.COMP Sonia=DEF bean just
'Sonia just stirred the beans.'
- c. ***Chintje'** nu nule'n ble'e Sonia='n?
just which girl see.COMP Sonia=DEF
'Which girl did Sonia just see?' (SLZ; Adler et al. 2018:39,41)

These adverbs are usually thought to be VP-internal, and so Adler et al. propose that they attach low in the VP and are dragged along by VP-fronting.

In addition, Adler et al. identify a range of other elements that can occur with the fronted VP. Adjectival predicates can optionally be fronted alongside the copula *-sua* ('be/live') (108a–b), and a nonverbal element fronts with the VP in some light verb constructions (108c–d).

(108) *SLZ adjectival predicates optionally front with copula:*

- a. [VP Zua] Pedro **wen**.
be.CONT Pedro good
'Pedro is well.'
- b. [VP Zua **wen**] Pedro.
be.CONT good Pedro
'Pedro is well.'
- c. [VP Dzun **yeze'**] Pedro kar tse=ba'=n.
do.CONT boastful Pedro car of=3.HU=DEF
'Pedro is boasting about his car.'
- d. [VP Dzon **lazhe**] Pedro nada'.
do.CONT lying Pedro 1SG
'Pedro is lying to me.'

(Adler et al. 2018:42,44)

However, all objects, PPs, and CPs must be stranded (109a–c).

(109) *DPs, PPs, and CPs are stranded in SLZ:*

- a. Ba be Maria **beku'** bidao' ni.
already give.COMP Maria dog child this
'Maria already gave the dog to this child.'
- b. Blo'ed Maria bidao' ni beku' [PP **lo' yo'o**].
show.COMP Maria child this dog in house
'Maria showed the dog to the child in the house.'
- c. Dze Pedro Maria [CP **bdi'inn beku' xna'=a'**].
tell.CONT Pedro Maria bite.COMP dog mother=1SG
'Pedro told Maria that the dog bit my mother.'

(Adler et al. 2018:36)

Tenetehára is a Tupí-Gauraní language of Brazil that has been argued to employ VP-fronting by Duarte (2012). Duarte's argument for VP-fronting comes from the observation that bare NPs can

appear in VOS order, while nouns with determiners appear in VSO (110a–b).

(110) *Tenetehára* allows VOS with bare NPs:

- a. u-dapo **tỳram** teko kury
3SG-make cassava people now
'The people made cassava now.'
- b. u-zuka Xegi **amo tazahu** a'e mehe
3SG-kill Sérgio other pig this time
'Sérgio killed another pig in that time.'

(Tenetehára; Duarte 2012:372)

As in all the other languages reviewed, PPs and CPs are necessarily stranded (111a–b).

(111) *Tenetehára* strands PPs and CPs:

- a. w-ekar teko wakara [PP **ita r-ehe**].
3-get people catfish stone OBL-in
'The people get the catfish in the stone.'
- b. w-exak awa [CP **ure-Ø-zur mehe kwez**].
3SG-see man we-ABS-come COMP 1PAST
'The man has seen that we have just come.'

(Tenetehára; Duarte 2012:365–366)

A consistent picture of the stranding problem comes out of this crosslinguistic comparison. What fronts with the verb is a reduced noun or an adverbial element, in Oceanic languages, Ch'ol, and Tenetehára, or a nonverbal element, as in Santiago Laxopa Zapotec. Full DPs, PPs, and CPs are never stranded.