Constraining predicate fronting*
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1 Introduction

1.1 VP-fronting in an SVO language

Some languages have been argued to employ an operation of VP-fronting to establish basic word order, particularly OVS and VOS languages (e.g. Pensalfini 1995; Massam 2001; Coon 2010a; Kalin 2014).

This talk first presents a novel case of VP-fronting in an SVO language, the Polynesian outlier Imere (Vanuatu).

Like many other Oceanic languages, Imere has a set of postverbal adverbial particles that occur before objects in inverse order:

(1) Postverbal particles in inverse order in Imere:

mii-nufine det.pl -woman rat 3nsg [VP kai-na eat-tr sorookina all kee neg oofi.

'The women didn’t eat all the yams.’ (∀ < ¬)

I use these facts to argue that Imere establishes basic word order through an operation of VP-fronting to a clause-medial position:

(2)

I am indebted to Serah Chilia for sharing her language with me. My thanks also to David Adger, Adam Chong, Daniel Harbour, Luisa Marti, Rob Truswell, everyone in LIN312, and audiences at CamCoS, Leipzig, Tromsø, and the LSA. The data reported here comes from a mix of elicitation sessions and the Spring 2018 field methods class LIN312. I largely stick to Imere orthography (g = [ŋj], j = [tʃ], k is variably realized as [y]).

1.2 The stranding problem

As in many VP-fronting analyses (see Chung 2005, Massam 2010), the proposal in (2) runs into “the stranding problem”: Imere VP-fronting must carry along adverbial particles, but strand objects, PPs, and CPs.

How do we ensure that the right VP-internal material vacates this VP?

I examine the stranding problem in nine VP-fronting languages, including Imere, from five language families (Oceanic, Mayan, Tsimshianic, Iupi-Guaraní, Zapotec).

In all these languages, what remains in the fronted VP is always a structurally reduced dependent:

– an adverbial particle,
– an object without DP layer,
– or a nonverbal element in a complex predicate

In contrast, DPs, PPs, and CPs are uniformly stranded.

Generalization: Languages with the stranding problem arrange dependents of the verb in order of increasing complexity (Behaghel 1932; Diks 1989l Hawkins 1994).

I argue that phaseness provides a way of accounting for the role of complexity in stranding across VP-fronting languages.

1.3 A distributed deletion analysis of stranding

To model obligatory stranding of other VP-internal elements, I propose a constraint that favors realizing only the verb, since the verb carries the movement-driving feature in VP-fronting (Massam and Smallwood 1997; Coon 2010a).

I implement this constraint in a distributed deletion analysis at PF, along the lines of Fanselow and Ćavar (2001):

(3) au [VP fago-na aia maruuruu] [VP fago-na aia maruuruu].

1sg wake.up-tr slowly 3sg

‘I woke him/her slowly.’
2  Word order in the Imere verb phrase

- Imere (or Mele-Fila) is a Polynesian language spoken in Vanuatu by about 3,500 people. The language has two varieties, one spoken in Mele village and one on Ifira island. Imere is the Mele variety.¹ Existing work is limited to notes and a brief sketch by Clark (1975, 2002).

- All data here comes from elicitation sessions with a speaker living in the UK and the Spring 2018 field methods class at Queen Mary.

2.1 Evidence for a head-initial verb phrase

Imere displays SVO word order and the organization of the verb phrase is familiar from other SVO languages.

- DP objects appear before adverbs and before PP modifiers:

  (4) Higher adverbs must follow objects in Imere:
  a. mii-nufine rat kai-na oofi naanaafi.
     DET.PL-WOMAN 3N SG EAT-TR YAM YESTERDAY
     ‘The women ate yams yesterday.’
  b. *mii-nufine rat kai-na naanaafi oofi.
     DET.PL-WOMAN 3N SG EAT-TR YESTERDAY YAM
     ‘The women ate yams yesterday.’
  c. au neaga meemea [pp gaia maaraa neaku].
     1SG PLANT FLOWER PP GARDEN POSS.
     ‘I planted flowers in my garden.’

- Imere also allows some verb-initial orders, in which the subject seems to remain low. Postverbal subjects in this context must come before any other elements:

  (5) Direct order in verb-initial contexts:
  a. lakina tagata i-fare.
     EXIST PERSON LOC-HOUSE
     ‘There is someone in the house.’
  b. *lakina i-fare tagata.
     EXIST LOC-HOUSE PERSON
     ‘There is someone in the house.’

⇒ These facts follow if DP arguments occupy familiar positions and PPs and adverbs attach on the right.

1Other names used by linguists include Fila-Mele and Ifira-Mele. I use the term Imere throughout, because this is what speakers themselves use.

- In addition to this, Imere has an alternation between a double object construction and a prepositional dative, following left-to-right order:²

  (6) 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.’
  c. *avau nagaia [dp atusi] [dp jii-nufine t-akia].
     1SG give BOOK AFF.SG-WOMAN SG-SOME
     ‘I gave a woman a book.’
  d. ??au nagaia [pp gaia jii-nufine t-akia] [dp atusi].
     1SG give AFF.SG-WOMAN SG-SOME BOOK
     ‘I gave a book to a woman.’

- Direct order is also evident in scope relations.³ I demonstrate with the adjective pisarasara (‘different’), which must be in the scope of a plural/quantified phrase.

  In the double object construction, the first object must scope over the second:

  (7) First object outscopes second object:
  a. au nagaia nufine eweji atusi pisarasara.
     1SG give WOMAN every book different
     ‘I gave every woman a different book.’
  b. *au nagaia nufine pisarasara atusi eweji.
     1SG give WOMAN different BOOK every
     (lit.) ‘I gave a different woman every book.’

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

  (8) 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.’
  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.’

²As in English, goals in the double object construction are always animate. But verbs like send do not seem to enter into the double object construction at all in Imere.

³Binding facts also accord with the conclusion that objects are in direct order. However, backwards coreference is degraded in Imere in general, making it hard to draw firm conclusions about c-command.
2.2 Inverse order in postverbal particles

Imere has a set of postverbal particles, like other Austronesian languages, which are organized in inverse order (Rackowski and Travis 2000; Massam 2010).

Postverbal particles appear after the verb and before any objects. They express a range of adverbial meanings:

(9) Imere has postverbal adverbial particles:
   a. ki 2sg tee-fano 3sg fut-go. NEG ‘You will not go.’
   b. au 1sg fago-na wake up-tr maruuruu slowly 3sg kee ‘I woke him/her slowly.’
   c. akoe 2sg ka 2sg.dep k-ounu 2sg.nfut -drink nefea when a-vai? pl -water ‘When did you drink water?’

Although these contribute adverbial meanings, I refer to them as particles to distinguish them from higher adverbs like naanaa ‘yesterday’.

When multiple postverbal particles appear, they occur in inverse order, taking scope in a right-to-left fashion:

(10) Imere adverbial particles are in inverse order:
   a. aia 3sg ee-goro 3sg mataakina 3sg kee ana. sing well still ‘S/he still doesn’t sing well.’
   b. mii-nufine aff.pl ra kai-na kee sorookina kee oofi. all 3sg eat-tr NEG yam ‘The women didn’t eat all the yams.’
   c. au 1sg kamoa mai ana furuti. 1sg bring our still fruit ‘I still brought fruit.’
   d. au ounu tlasia kee avai. 1sg drink enough neg PL-water ‘I didn’t drink enough water.’

Postverbal particles appearing in direct order are degraded (11a–c).

(11) Direct order of adverbial particles degraded:
   a. *mii-nufine ra kai-na kee sorookina oofi. aff.pl-women 3nsg eat-tr NEG all yam ‘The women ate didn’t all the yams.’
   b. *aia ee-goro ana mataakina. 3sg fut-sing still well ‘S/he still sings well.’
   c. *au ounu kee tlasia a-vai. 1sg drink neg enough PL-water ‘I didn’t drink enough water.’

⇒ These facts are surprising, because inverse order suggests an ascending verb phrase, with right-attaching adverbial particles.

But if (12) is correct, there is no space for a following left-to-right VP.

Reordering is sometimes possible, particularly with the negation particle kee, and seems to result in predictable semantic differences:

(i) Optional orderings follow right-to-left scope:
   a. au 1sg fago-na maruruuru kee aia. wake up-tr slowly neg 3sg ‘I didn’t wake him up slowly.’ (not > slowly)
   b. au 1sg kee maruruuru aia. wake up-tr NEG slowly 3sg ‘I slowly didn’t wake him up.’ (slowly > not)

I abstract away here from the issue of whether right-attachment can be base-generated or must be derived through roll-up movement, which should not affect the points made.
2.3 Postverbal particles are not adjoined heads

One solution to the existence of inverse order before direct order could be to assume that all postverbal particles are functional heads picked up by successive head movement of V (e.g. Clemens 2014, 2019, on Niuean):

(13)

But we can show that a head movement analysis is not correct!

1. Postverbal particles are not affixes.
   - Prefixes and suffixes on the Imere verb shift stress (to the antepenultimate mora) (14a–b), but not postverbal particles (14c–d):

(14) **Affixes shift stress, but particles do not:**
   a. aia éé-kai.
      3sg NFUT-eat
      ‘S/he ate.’
   b. aia kái-na manioka.
      3sg eat-TR cassava
      ‘S/he ate cassava.’
   c. aia éé-kai kee.
      3sg NFUT-eat NEG
      ‘S/he didn’t eat.’
   d. aia kái-na kee manioka.
      3sg eat-TR NEG cassava
      ‘S/he didn’t eat cassava.’

   - Also, prefixes and suffixes on the Imere verb help satisfy a trimoraic word minimality requirement (see appendix), but particles don’t.

2. Postverbal particles can come after phrasal predicates.
   - Like verb-initial languages, Imere allows clauses headed by phrasal non-verbal predicates (Clark 2002):

(15) **Imere allows non-verbal predicates without auxiliary:**
   a. avau [pp gaia Ifate] 1sg from Efate
      ‘I am from Efate.’
   b. atusi [pp na tagata raa] book poss man nst
      ‘The book is that man’s.’

   - Such predicates are also followed by adverbial particles (cf. Massam 2001):

(16) **Phrasal predicate can be modified by particles:**
   a. au gaia Ifate ana 1sg from Ifate still
      ‘I am still from Efate.’

   - Since these predicates are clearly phrasal, successive head movement cannot be the explanation here!

3. Postverbal particles can modify each other and form a phrase.
   - The wh-particle fefea ‘how’ can combine with other adverbial particles, like mataakina ‘well’ or pelepele ‘fast’ (17a–b).

(17) **Wh-particle fefea can modify other particles:**
   a. ka dep.2sg fee-fe pelepele fefea read-TR fast how
      ‘How fast did you read the book?’
   b. ka dep.2sg mataakina fefea lora te-mate?
      ‘How well did you lock the door?’

4. Postverbal particles can double a true functional head.
   - The negative particle kee is optionally doubled by a prefix on the verb, s-:

(18) **Negation can involve prefix and postverbal particle:**
   a. au s-ounu kee a-vai.
      1sg NEG-drink NEG PL-water
      ‘I am not drinking water.’
3 A VP-fronting analysis

I interpret the existence of inverse order before direct order as evidence for VP-fronting, so that a VP constituent as in (19), containing all adverbial particles, moves to a clause-medial position (say, Spec-FP): (19)

3.1 Distributed deletion and the stranding problem

Problem: How do we ensure that all objects, PPs, and CPs are not inside the fronting VP?

- Like objects, PPs and CPs must be stranded:

  (20) PP and CP arguments appear after particles:
  a. au fanaga kee [pp gaia nuane].
     1sg talk NEG to man
     ‘I didn’t talk to the man.’
  b. 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.’

- Common solutions to the stranding problem in the literature are to adopt remnant movement or a different base-generated structure (e.g. Massam 2001, 2010; Coon 2010; Collins 2017).
  - Imere offers no obvious evidence for remnant movement in word order (and there is no additional scopal flexibility, in ditransitives, for instance).
  - Postverbal particles scope over following objects and modifiers (see section 3.3), arguing against an approach that base-generates all stranded material in a high position.

- Instead, I propose that VP-fronting is accompanied by distributed deletion at PF (Fanselow and Cavar 2001). The VP fronts intact, containing all complements, and apparently stranded material is spelled out in the lower copy:

(21) au fago-na maruuruu aia.
    1sg wake-up-tr slowly 3sg
    ‘I woke him/her slowly.’

(22)

3.2 A distributed deletion analysis

What motivates distributed deletion?

- Following Massam and Smallwood (1997), Coon (2010a) and Collins (2017), I propose that VP-fronting is driven by features of the verb. In particular, I propose that the attracting head F carries an uninterpretable [V]-feature:

(23)
Following Coon (2010a), I suggest that, in instances of predicate fronting, the verb cannot move on its own (e.g. because head movement is not available). As a result, only phrasal movement can be triggered, resulting in movement of a projection of the predicate.

**Realize Goal**

Complements of the verb or adjuncts inside the VP can be dragged along by this movement, but it is the verb that carries the feature driving movement. I propose a PF constraint that effectively undoes this pied-piping, which I call **Realize Goal** (see also Fanselow and Cavar 2001):[6]

(24) \[
\text{Realize Goal} \\
\text{For an instance of movement triggered by the feature } F, \text{ spell out only material that carries the interpretable feature } F. \\
\]

Following Nunes (2004) and Landau (2006), I take it that PF constraints can influence the outcome of copy deletion, in an OT calculus.

I adopt a faithfulness constraint **Contiguity** that penalizes distributed deletion (see also Fanselow and Cavar 2001 and Johnson 2012):

(25) \[
\text{Contiguity:} \\
\text{All elements in a moved phrase should form a contiguous string in the output.} \\
\]

The ranking **Realize Goal >> Contiguity** generates distributed deletion:

(26) \[
\text{au fago-na maruuruu aia.} \\
\text{1sg wake.up-TR slowly 3sg} \\
\text{‘I woke him/her slowly.’} \\
\]

**Note:** I will return to the question of why adverbial particles are not deleted.

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### 3.3 The scope of postverbal particles

Evidence for distributed deletion comes from postverbal particles, which have a discontinuous scope domain, scoping over particles to their left, but objects and modifiers to the right:

(27) \[
\text{Scope domain (boxed) of a particle } \text{Part}_X: \\
\text{... [Part}_{1} \ldots \text{Part}_{X-1}] \quad \text{Part}_X \quad \text{Part}_{X+} \quad \text{Obj+ Mod+} \\
\]

We can capture this scopal behavior if the underlying structure is the one predicted by a distributed deletion approach.

**Diagnosing the scope of postverbal particles**

1. **NPI licensing.**

Martí (2018) shows that Imere has a series of indefinite articles that act as NPIs. An object or modifier NPI can be licensed by the negative particle **kee** (28a–b).

(28) \[
\text{Imere indefinite articles behave as NPIs:} \\
a. \quad \text{au seia se-tama.} \\
\text{1sg see INDEF.SG-child} \\
\text{‘I saw children.’} \\
b. \quad \text{au seia kee se-tama.} \\
\text{1sg see NEG INDEF.SG-child} \\
\text{‘I didn’t see any child.’} \\
c. \quad \text{au seia kee akoe se-fare.} \\
\text{1sg see NEG 2sg INDEF.SG-house} \\
\text{‘I didn’t see you in any house.’} \\
\]

2. The floating quantifier **sorookina**.

The particle **sorookina** is a floating quantifier modifying a DP it c-commands.[7]

(29) \[
\text{Postverbal particle sorookina acts as floating quantifier:} \\
\text{au ounu sorookina a-vai.} \\
\text{1sg drink all PL-water} \\
\text{‘I drank all the water.’} \\
\]

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6This constraint could be understood as a version of Richards’s (2016) Probe-Goal Contiguity, but one that influences the outcome of copy deletion.

That sorookina has a c-command requirement is evident in the fact that it can modify the subject of an unaccusative, but not of an unergative:

(30)  
Sorookina can modify subject of unaccusative:

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

(31)  
Sorookina cannot modify subject of unergative:

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

⇒ Postverbal particles outscope postverbal arguments/modifiers to the right! This follows from a distributed deletion analysis.

4 The stranding problem crosslinguistically

Why do postverbal particles front with the verb?

The stranding problem arises in at least eight other VP-fronting languages, from four other languages families:

- Niuean, Fijian, Samoan, Hawaiian (also Oceanic) (e.g. Massam 2001; Van Uerk 2019; Medeiros 2013; Collins 2017)
- Ch’ol (Mayan) (Coon 2010a; cf. Clemens and Coon 2018a)
- Gitksan (Tsimshianic) (Forbes 2018)
- Tenetehára (Tupí-Guaraní) (Duarte 2012)
- Santiago Laxopa Zapotec (Adler et al. 2018)

Crosslinguistic observations about stranding:

- Full PPs, DPs, and CPs are always stranded.
- What fronts with the verb is either:
  - A articleless object
  - An adverbial particle
  - A nonverbal element in a complex predicate

⇒ What fronts with the verb is structurally less complex than material that is stranded, so that the effect of VP-fronting is always to arrange dependents of the verb in order of increasing complexity.

How can we understand the role of complexity?

- Clemens (2014, 2019) presents an account of the correlation between stranding and articles on objects. She proposes a prosodic constraint Argument-ϕ that forces a verb and an object that spell out in the same phase to be adjacent.
- Since only non-phasal dependents will be realized in the same phase as the verb, and non-phasal elements tend to be less complex, this idea captures the relationship between stranding and complexity.
- I propose to generalize this account to modifiers, on the assumption that adver- 
  bial particles, like reduced object, are non-phasal.

4.1 PPs, CP, and DPs are stranded

- Across all VP-fronting languages, PP and CP modifiers and arguments are always stranded:

(32)  
PPs and CPs never front with the VP:

  a. Kua [VP fakahā] he ekekafo [DP e tohi] [PP he vakalele]. 
     PREF send ERG doctor ABS letter LOC airplane 
     ‘The doctor sent the letter on the airplane.’
     (Niuean; Clemens 2014:16)
  b. e a [VP vosa tiko] [PP vei Jone] ko Eroni. 
     3SG PST talk PROG to.PR Jone DET.PR Eroni 
     ‘Eroni talked to Jone.’
c. The same pattern is found with full DPs.

Full DPs never front with the VP:

(33) 

\[ \text{VP} \text{ kila-a tiko} [\text{CP} \text{ ni o iko vuku}] \]

1stsg think-tr.n prog c det.pr 2ndsg smart

'I am thinking that you are smart.' (Fijian)

d. Chonkol [\text{VP} \text{ i-ch'il ja'as}] aj-Doris [\text{CP} \text{ che nephew tyi}]

\[ \text{prog} \text{ A3-fry banana det-Doris when prf k'oty-o-yo'] \]

arrive.there-rv-n1

'Doris was frying bananas when I arrived.' (Ch'ol; Coon 2010b:42)

e. Tyi [\text{VP} \text{ i-julu bjamum aj-More} [\text{pp} \text{ tyi matyee']e}]

\[ \text{prf} \text{ A3-shoot jaguar det-More prep jungle} \]

'More shot a jaguar in the jungle.' (Ch'ol; Clemens and Coon 2018b:9)

f. [\text{VP} \text{ Min lux-lukw} =hl gyat [\text{CP} \text{ win=t gya-a-dit}]

\[ \text{upward pl-surprise =cn people comp=3i see-3pl.hi sii-sgals-m gayt-t=s Michael] \]

new-purchase-attr hat-3i=dn Michael

'The people were surprised when they saw Michael's new hat-buy.'

g. Gi'nam-i-'y=hl majagalee [\text{pp} \text{ a-t=s Michael}]

give-tr-1sg.ii=cn flower prep-3i=dn Michael

'I gave flowers to Michael.' (Gitksan; Forbes 2018:119,160)

h. W-e'kar teko wakara [\text{pp} \text{ ita r-cho}]

3-get people catfish stone obl-in

'The people get the catfish in the stone.'

i. W-e'ax awa [\text{CP} \text{ ure-o-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)

j. Blo'ed Maria bidao ni bek'u' [\text{pp} \text{ lo' yo'o}]

\[ \text{show.comp Maria child this dog in house} \]

'Maria showed the dog to the child in the house.'

k. Dze Pedro Maria [\text{CP} \text{ bdii'inn bek'u xna'a=za}]

\[ \text{tell.conv Pedro Maria bite.comp dog mother=1sg} \]

'Pedro told Maria that the dog bit my mother.'

(SLZ; Adler et al. 2018:36)

The same pattern is found with full DPs (but not reduced objects, section 4.2):

(33) Full DPs never front with the VP:

\[ \text{a. [VP} \text{ Takaflaga t?amau ni]} e ia [\text{DP} \text{ e tau ika}] \]

\[ \text{hunt always emph erg he abs pl fish} \]

'He is always fishing.' (Niuean; Massam 2001:157)

\[ \text{b. e a [VP kau-ta mai} \text{ na ilokoloko ko Eroni]} \]

\[ \text{3sg pst bring-tr.n dir det.n pillow det.pr Eroni} \]

'Eroni brought the pillows.' (Fijian)

c. Mi [\text{VP} \text{ j-k'ux} tyi ototyty jini waj]

\[ \text{impf 1sg-eat p house det tortilla} \]

'I eat the tortillas in the house.' (Ch'ol; Coon 2010a:367)

d. [\text{VP} \text{ Gi'nam->t} =a] [\text{pp} \text{ =hl winaex} a-t=s Aidan] give-tr-3i=dn Henry =cn food obs-3i=dn Aidan

'Henry gave food to Aidan.' (Gitksan; Forbes 2018:22)

e. u-zuka Xegi amo tazahu a'e mehe

3sg-kill Sergio other pig this time

'Sergio killed another pig in that time.' (Tenetehára; Duarte 2012:372)

f. Ba be Maria bek'u bidao ni.

\[ \text{already give-comp Maria dog child this} \]

'Maria already gave the dog to this child.'

(SLZ; Adler et al. 2018:36)

4.2 Bare objects and adverbial particles front

Fronted material comes in at least two types:

1. **Determinerless objects:** In a number of languages, an object without an article/determiner can appear alongside the verb.

(34) **Determinerless objects in fronted VP:**

\[ \text{a. Ne [VP holoholo kapinui kiva fakaeneene] a Sione.} \]

\[ \text{pst wash dish dirty carefully abs Sione} \]

'Sione washed dirty dishes carefully.' (Niuean; Massam 2001:158)

\[ \text{b. e a [VP kau-ti} \text{ au mai} \text{ ko Eroni.} \]

\[ \text{3sg pst bring-tr.pr 1sg dir det.pr Eroni} \]

'Eroni brought me.'

(Fijian)

\[ \text{c. Mi [VP j-k'ux waj] tyi ototyty.} \]

\[ \text{impf 1sg-eat tortilla p house} \]

'I eat tortillas in the kitchen.'

(Ch'ol; Coon 2010a:367)

\[ \text{d. [VP u-dapo tyram] teko kury} \]

\[ \text{3sg-make cassava people now} \]

'The people made cassava now.' (Tenetehára; Duarte 2012:372)

2. **Adverbial elements:** As in Imere, a number of languages allow adverbial particles to surface alongside the verb.

(35) **Adverbial elements can appear with the verb:**

\[ \text{a. Ne [VP holoholo kapinui kiva fakaeneene] a Sione.} \]

\[ \text{pst wash dish dirty carefully abs Sione} \]

'Sione washed dirty dishes carefully.' (Niuean; Massam 2001:158)
b. e a [VP tu cake tiko] 0 Koini.
3SG PST stand up PROG ART.PR Koini
‘Koini was standing up.’ (Fijian)

c. Tyi [VP k-wiñ cha le soñ].
PRF A1-a.lot do dance
‘I danced a lot.’ (Ch’ol; Coon 2010a:373)

d. [VP sagayt ixsda-in-o-y] =hl hun kuxhl gan-t=hl
together tasty-CAUS-TR-1SG.1I =CN salmon halibut PCN=3h-CN laaxw.
‘I like to eat salmon, halibut, and trout.’ (Gitksan; Forbes 2018:23)

e. [VP Chintje’ bta] Sonia=’n zah.
just stir.com Sonia=DEF bean
‘Sonia just stirred the beans.’ (SLZ; Adler et al. 2018:39)

4.3 The role of structural complexity

Generalization about the stranding problem: The effect of VP-fronting is to arrange dependents of the verb in order of increasing complexity, with less complex elements inside more complex ones.

- There is a clear correlation between stranding and the presence of an article in DPs, across Oceanic, in Ch’ol, and in Tenetéhara.
- In each language, dependents of the verb that are always phrasal (DPs, PPs, and CPs) do not front with the verb.
- All material that fronts with the verb can at least in principle be realized as a single word.

Are we dealing with a distinction between heads and phrases?

- It is not the case that fronted material cannot be phrasal. As Massam (2001) notes, articleless nouns in the fronted VP can be complex (36a–b). This is true in Ch’ol and Hawaiian as well (36c–d).

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

a. Ne [VP iku si amo] a Mele.
PST eat chip com ABS fish good ABS Sione
‘Sione ate good fish and chips.’ (Niuean; Massam 2001:158,160)

b. 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)

c. Tyi i- [VP tsañ-s-a 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)

d. [VP inu kope hu’hu’l] o Noelani.
drink coffee cold subj Noelani
‘Noelani is drinking cold coffee.’ (Hawaiian; Medeiros 2013)

⇒ Similarly, in Fijian, Pronoun and proper name objects can be part of complex constituents, like a disjunctive phrase or an appositive construction (37a–b).

(37) Common noun in disjunct inside fronted VP:

a. iko a [VP rai-ci [Eroni se na koli] tiko]
2SG PST see-TR.PR Eroni of ART.N dog PROG
‘You were seeing Eroni and the dogs.’

3SG PST crack-TR.PR 3DU ART.N coconut PROG ART.PR Eroni
‘Eroni was cracking the coconuts (dual).’

⇒ And, as we saw in Imere, adverbial particles can form a phrase. Also, in other Oceanic languages, the same adverbial particles can be preceded by a complex object like the ones in (36a–d) and (37a–b).

⇒ We need a more abstract notion of complexity that distinguishes between more and less complex phrases, which does not simply count nodes or words.

4.4 Clemens (2014, 2019)

- Clemens (2014, 2019) presents an account of the correlation between stranding and the presence of articles in Niuean.
- She proposes that DPs with an article are phases, while the absence of an article results in a non-phasal nominal.
- Phasehood provides of understanding the distinction between more and less complex phrases.

Why should the phasal nature of a dependent of a verb matter?
Clemens (2014, 2019) proposes the constraint Argument-ϕ, which forces a head and a dependent to be adjacent:

\[(38) \text{Argument condition on phonological phrasing:}\]

A head and its internal argument(s) must be adjacent sub-constituents of a phonological phrase (ϕ-phrase).

Crucially, Clemens suggests that Argument-ϕ is evaluated on a phase-by-phase basis, after spell-out.

Because a DP object spells out in a different phase than the verb, as in (39), Argument-ϕ has no effect.

\[(39) \text{VP} \quad \text{VP} \]

\[\text{V} \quad \text{DP} \quad \text{V} \quad \text{NP} \]

In contrast, an NP object spells out in the same phase as the verb (40). As a result, Argument-ϕ dictates that the two must be prosodically adjacent and form a prosodic phrase.

This view explains why reduced objects survive distributed deletion, if Argument-ϕ >> Realize Goal in these languages. Here is a tableau for a Ch’ol VOS example:

\[(41) \text{VOS in Ch’ol:}\]

\[\text{Tyi [VP i-kuch-u si’] aj-Maria.} \quad \text{Prf A3-carry-TV wood det-Maria}\]

‘Maria carried wood.’ (Ch’ol; Coon 2010a:355)

\[(42) \text{Selectional Adjacency:}\]

A head H must be adjacent to any dependent in a selectional relationship with H.

\[\text{SelAdj >> Realize Goal >> Contiguity.}\]

\[(43) \text{au fago-na maruuruu aia.} \quad 1sg \text{ wake.up-trr slowly} \quad 3sg \text{ ‘I woke him/her slowly.’}\]

⇒ The pressure of Selectional Adjacency will exempt non-phasal dependents from distributed deletion, explaining the correlation between complexity and stranding in many VP-fronting languages.

4.5 Extending Argument-ϕ to adverbial particles

⇒ I suggest generalizing this account to adverbial particles, on the assumption that adverbs are also in a selectional relationship with the verb. I call this constraint Selectional Adjacency:

\[(42) \text{Selectional Adjacency:}\]

A head H must be adjacent to any dependent in a selectional relationship with H.

\[\text{Note: Clemens’s constraint is stated in terms of prosodic structure, and it might be possible to view this constraint the same way.}\]

⇒ I propose that adverbial elements that front with the verb, like Imere postverbal particles, are non-phasal, just like reduced nouns. In contrast, PP and CP adjuncts are all phases, like DPs.

⇒ In this view, an Imere example like (43) has the tableau below, with the ranking Selectional Adjacency >> Realize Goal >> Contiguity.

\[(43) \text{au fago-na maruuruu aia.} \quad 1sg \text{ wake.up-trr slowly} \quad 3sg \text{ ‘I woke him/her slowly.’}\]

\[
\begin{array}{|c|c|c|c|}
\hline
\text{Input:} & \text{[V Obj Adv]} & \ldots & \text{[V Obj Adv]} \\
\text{SelAdj} & \text{RealizeG} & \text{Contig} \\
\hline
\text{a.} & \text{[V Obj Adv]} & \ldots & \text{[V Obj Adv]} & \ast & \ast & \ast \\
\hline
\text{b.} & \text{[V Obj Adv]} & \ldots & \text{[V Obj Adv]} & \ast! & \ast! & \ast! \\
\hline
\text{c.} & \text{[V Obj Adv]} & \ldots & \text{[V Obj Adv]} & \ast! & \ast! & \ast! \\
\hline
\end{array}
\]

⇒ The pressure of Selectional Adjacency will exempt non-phasal dependents from distributed deletion, explaining the correlation between complexity and stranding in many VP-fronting languages.

10

8As Clemens notes, Richards’s (2016) Selectional Contiguity is very similar in spirit.

9A more precise formulation of this constraint is necessary to deal with multiple adverbial particles. One option is to state this constraint in gradient terms, so that adjacency is understood as “as close as possible to H”. Another is to define adjacency as “spelled out in the same minimal constituent that contains both H and the dependent”.

(Supporting evidence for the predicted prosodic structure is found for Niuean in Clemens (2014, 2019) and for Ch’ol in Clemens and Coon (2018b).)
5 Non-verbal predicates and stranding

5.1 No stranding with 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.

Imere allows fronting of DPs and PPs. But these predicates differ in that they move intact, without stranding!

(44) Object of V, but not P, stranded in fronting:
   a. au [PP gaia Ifate] ana
      1sg     from Efate     still
      ‘I am still from Efate.’
   b. au [VP sei-a ana] Ifate
      1sg     see-ra 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. When the same PPs and DPs are part of a non-verbal predicate, they do front (45a–b).

(45) PPs and DPs front as 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.’
      (Niuean; Massam 2001:165)

In Samoan, PPs are stranded by VP-fronting, but move intact when they act as the main predicate of the clause (46) (Collins 2017).

(46) 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.’
      (Samoan; Mosel and Hovdhaugen 1992, cited in Collins 2017:7)

These facts reveal a key crosslinguistic generalization about predicate fronting: there is no “stranding problem” internal to non-verbal predicates.

⇒ These facts reveal a key crosslinguistic generalization about predicate fronting: there is no “stranding problem” internal to non-verbal predicates.

⇒ These strategies use a verbal syntax, and so are still consistent with the generalization that there is no stranding internal to DP and PP predicates.

5.2 Predicate fronting is always VP-fronting

The facts described above suggest that fronting of verbal and non-verbal predicates cannot make use of a fully analogous syntax.

⇒ Instead, I propose that predicate fronting is always VP-fronting, or fronting of a verbal projection.

⇒ Non-verbal predicates combine with a functional head that connects them to the verbal extended projection, which I will assume is Pred (e.g. Bowers 1993):

(48) PredP

⇒ The result is an asymmetry between verbal and non-verbal predicates. In (48), the goal for Agree is PredP and not the lexical head directly.

Key idea: Since the movement-driving feature is associated with the whole PredP, Realize Goal does not trigger subdeletion like it does in VP-fronting.
Concluding remarks

▷ In this talk, I presented a novel case of **VP-fronting in an SVO language**, Imere, with an otherwise familiar SVO VP.

▷ I demonstrated that the effect of VP-fronting is many verb-initial languages is to arrange constituents in **order of increasing complexity**, based on a comparison of Imere with eight other VP-fronting languages.

▷ Building on Clemens (2014, 2019), I proposed a constraint that forces **non-phasal dependents** of a head to remain adjacent to it.

▷ To solve the “stranding problem”, I argued that VP-fronting is accompanied by **distributed deletion at PF**, in order to realize only the moving predicate.

⇒ The account developed here may offer insight into other cases in which surface order seems to conflict with well-established assumptions about underlying structure (e.g. Bobaljik 1999; Svenonius 2002; Abels 2016; Belk and Neeleman 2017).

References


Appendix: Word minimality and phasehood

The account sketched above posits a difference in phasehood between adverbial particles and other VP-internal material, in Imere and a number of other languages.

*Can we find independent evidence for differences along these lines?*

As noted by Clark (1975, 2002), Imere prosodic words must be at least trimoraic.

(49) CVV or CVCV roots are affixed:

<table>
<thead>
<tr>
<th></th>
<th>Must be trimoraic</th>
<th>Not always trimoraic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbs</td>
<td>Subject clitics</td>
<td></td>
</tr>
<tr>
<td>Nouns/Pronouns</td>
<td>Conjunctions</td>
<td></td>
</tr>
<tr>
<td>Adjectives</td>
<td>Demonstratives</td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>Complementizers</td>
<td></td>
</tr>
<tr>
<td>Adverbs</td>
<td>Adverbial particles</td>
<td></td>
</tr>
</tbody>
</table>

Observation: Of all VP-internal material, only adverbial particles do not need to obey word minimality:

(50) *Imere adverbial particles*

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>sorookina</td>
<td>‘all’</td>
<td></td>
</tr>
<tr>
<td>mai</td>
<td>DIR.SP</td>
<td>kee</td>
</tr>
<tr>
<td>atu</td>
<td>DIR ADDR</td>
<td>age</td>
</tr>
<tr>
<td>ana</td>
<td>‘still’</td>
<td>soina</td>
</tr>
<tr>
<td>tlasia</td>
<td>‘enough’</td>
<td>maruuruu</td>
</tr>
<tr>
<td>nefeea</td>
<td>‘when’</td>
<td>fefea</td>
</tr>
</tbody>
</table>

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.

Word minimality and phasehood

- In the prosodic hierarchy (Selkirk 1978, 1984; Nespor and Vogel 1986), a prosodic phrase must contain a prosodic word.
- If adverbial particles are not associated with a prosodic phrase, then they can be smaller prosodic constituents, like feet (e.g. kee, mai).

Why do adverbial particles not need to project a prosodic phrase?

- Most categories subject to word minimality in Imere are typically associated with phasal structure (e.g. VP, PP, DP).
- I propose that a phase (in Imere at least) always corresponds at least to a prosodic phrase (see also Kahnemuyipour 2004, Adger 2007, Ishihara 2007, Kratzer and Selkirk 2007).
- In support of a correlation between stranding and minimality, a number of trimoraic particles can also be stranded:

(52) *Trimoraic particles can be stranded:*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. akoe k-ounu a-vai fefea?</td>
<td>2sg 2sg.DEP 2sg-drink pl water how</td>
</tr>
<tr>
<td>b. au fago-na aia maruuruu.</td>
<td>1sg wake up tr 3sg slowly</td>
</tr>
</tbody>
</table>

⇒ The correlation between word minimality and stranding follows directly from the proposed account, if it is in principle possible for an adverbial element to be introduced as a phasal or non-phasal dependent.

10 The correlation is not perfect, though. *Mataakina* (‘well’) and *sorookina* (‘all’) resist stranding, as does *tlasia* (‘enough’).