

Constraining predicate fronting*

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1 Introduction

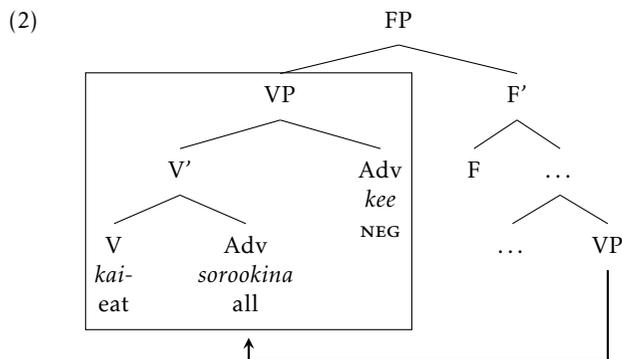
1.1 VP-fronting in an SVO language

- ▶ 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 rat [VP kai-na sorookina kee] oofi.
 DET.PL-woman 3NSG eat-TR all NEG yam
 'The women didn't eat all the yams.' (V < ¬)

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



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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, Tupí-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 1989; Hawkins 1994).

- ▶ In work on Niuean, Clemens (2014, 2019) proposes a constraint that requires **non-phasal dependents of a head to remain adjacent to it**.
- ▶ I argue that **phasehood** 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 Čavar (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:*

- mii-nufine rat kai-na oofi **naanafi**.
DET.PL-WOMAN 3NSG eat-TR yam yesterday
'The women ate yams yesterday.'
- *mii-nufine rat kai-na **naanafi** oofi.
DET.PL-WOMAN 3NSG eat-TR yesterday yam
'The women ate yams yesterday.'
- au neaga meemea [pp **gaia maaraa neaku**].
1SG plant flower P garden poss.1SG
'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:*

- lakina tagata **i-fare**.
EXIST person LOC-house
'There is someone in the house.'
- *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:*

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

- ▶ **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:*

- au nagaia nufine eweji atusi pisarasara.
1SG give woman every book different
'I gave every woman a different book.'
- *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:*

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

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

(9) *Imere has postverbal adverbial particles:*

- ki tee-fano **kee**.
2SG FUT-go.SG NEG
'You will not go.'
- au fago-na **maruuruu** aia.
1SG wake.up-TR slowly 3SG
'I woke him/her slowly.'
- akoe ka k-ounu **nefea** a-vai?
2SG 2SG.DEP 2SG.NFUT-drink when 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 *naanafi* '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:*

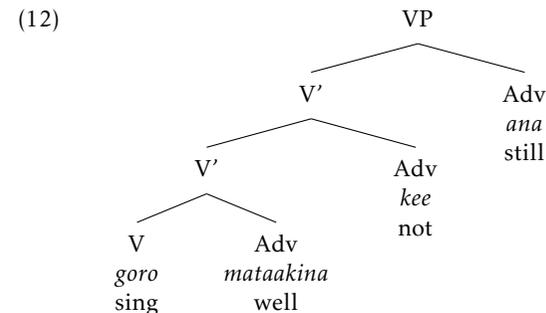
- aia ee-goro **mataakina kee ana**.
3SG NFUT-sing well NEG still
'S/he still doesn't sing well.'
- mii-nufine rat kai-na **sorookina kee** oofi.
AFF.PL-woman 3NSG eat-TR all NEG yam
'The women didn't eat all the yams.'
- au kamoā **mai ana** furuti.
1SG bring DIR still fruit
'I still brought fruit.'
- au ounu **tlasia kee** avai.
1SG drink enough NEG water
'I didn't drink enough water.'

- Postverbal particles appearing in **direct order** are degraded (11a–c).⁴

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

- *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.'
- *aia ee-goro **ana mataakina**.
3SG NFUT-sing still well
'S/he still sings well.'
- *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**.⁵



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

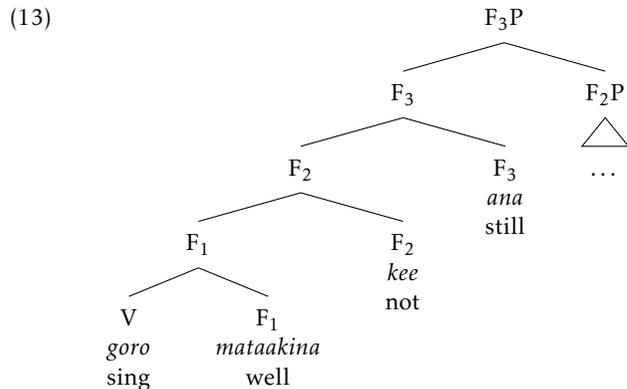
⁴Reordering is sometimes possible, particularly with the negation particle *kee*, and seems to result in predictable semantic differences:

- (i) *Optional orderings follow right-to-left scope:*
- au fago-na **maruuruu kee** aia.
1SG wake.up-TR slowly NEG 3SG
'I didn't wake him up slowly.' (not > slowly)
 - au fago-na **kee maruuruu** aia.
1SG wake.up-TR NEG slowly 3SG
'I slowly didn't wake him up.' (slowly > not)

⁵I 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):



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:*

- aia **ée-kai**.
3SG NFUT-eat
'S/he ate.'
- aia **kái-na** manioka.
3SG eat-TR cassava
'S/he ate cassava.'
- aia **ée-kai** kee.
3SG NFUT-eat NEG
'S/he didn't eat.'
- 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:*

- avau [pp gaia Ifate]
1SG from Efate
'I am from Efate.'
- atusi [pp na tagata raa]
book POSS man DIST
'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:*

- 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:*

- ka fee-fe [**pelepele fefea**] atusi?
DEP.2SG read-TR fast how book
'How fast did you read the book?'
- ka loro [**mataakina fefea**] te-mate?
DEP.2SG lock well how SG-door
'How well did you lock the door?'

4. Postverbal particles can double a true functional head.

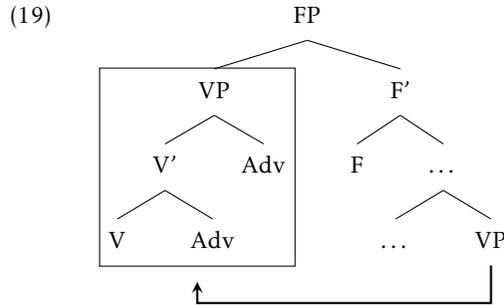
- The negative particle *kee* is optionally doubled by a prefix on the verb, *s-*:

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

- 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):



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:*

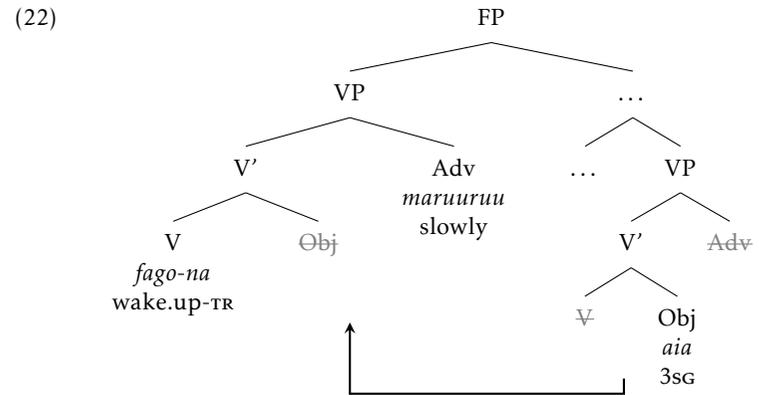
- a. au fanaga kee [PP gaia nuane].
1SG talk NEG to man
'I didn't talk to the man.'
- b. au mantua kee [CP ta Touravea kai-na manioka].
1SG think NEG c Touravea eat-TR cassava
'I didn't think that Touravea ate cassava.'

► 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 Ćavar 2001). The VP fronts intact, containing all complements, and apparently stranded material is spelled out in the lower copy:

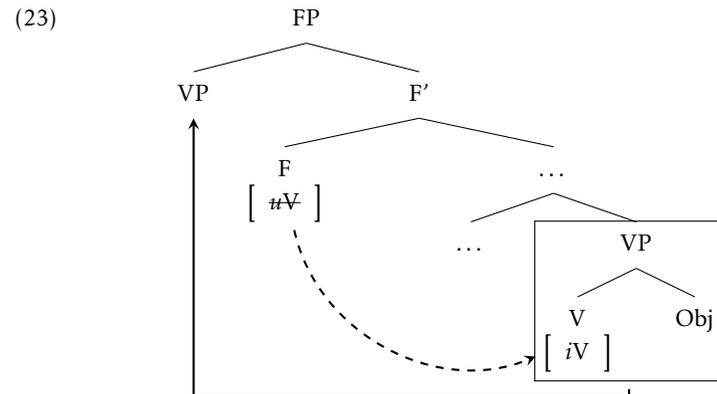
(21) au fago-na maruuruu aia.
1SG wake.up-TR slowly 3SG
'I woke him/her slowly.'



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:



- ▶ 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 Ćavar 2001):⁶

(24) **REALIZE GOAL**
For an instance of movement triggered by the feature F, 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 Ćavar 2001 and Johnson 2012):

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

- ▶ The ranking **REALIZE GOAL** >> **CONTIGUITY** generates distributed deletion:

(26) au fago-na maruuruu aia.
1SG wake.up-TR slowly 3SG
'I woke him/her slowly.'

Input: [V Obj Adv] ... [V Obj Adv]	REALIZE GOAL	CONTIGUITY
\mathbb{E} a. [V \emptyset Obj Adv] ... [∇ Obj Adv]		*
b. [V Obj Adv] ... [∇ Obj Adv]	*!	

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

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

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) *Scope domain (boxed) of a particle Part_x:*
... [Part₁ ... Part_{x-1}] **Part_x** Part_{x+} [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) *Imere indefinite articles behave as NPIs:*

- *au seia **se**-tama.
1SG see INDEF.SG-child
'I saw children.'
- au seia kee **se**-tama.
1SG see NEG INDEF.SG-child
'I didn't see any child.'
- au seia kee akoe **se**-fare.
1SG see NEG 2SG INDEF.SG-house
'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 It can modify the object of a transitive (29a), but not a subject.

(29) *Postverbal particle sorookina acts as floating quantifier:*
au ounu **sorookina** a-vai.
1SG drink all PL-water
'I drank all the water.'

⁷See Seiter (1980) and Massam (1998) for discussion of *oti*, a similar particle in Niuean.

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 Urk 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 adverbial 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} fakahū] he ekekafo [_{DP} e tohi] [_{PP} he vakalele].
PRF 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. 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.' (Fijian)
- d. Choñkol [VP i-ch'il ja'as] aj-Doris [CP **cheñak tyi**
PROG A3-fry banana DET-Doris when PRF
k'oty-i-yoñ].
arrive.there-ITV-B1
'Doris was frying bananas when I arrived.' (Ch'ol; Coon 2010b:42)
- e. Tyi [VP i-julu bajlum aj-More [PP **tyi matye'el**].
PRF A3-shoot jaguar DET-More PREP jungle
'More shot a jaguar in the jungle.'
(Ch'ol; Clemens and Coon 2018b:9)
- f. [VP 'Min lux-lukw] =hl gyat [CP **win=t gya'a-diit**
upward PL-surprise =CN people COMP=3I see-3PL.II
sii-sgals-m gayt-t=s Michael].
new-purchase-ATTR hat-3II=DN Michael
'The people were surprised when they saw Michael's new hat-buy.'
- g. 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 2018:119,160)
- h. w-ekar teko wakara [PP **ita r-ehe**].
3-get people catfish stone OBL-in
'The people get the catfish in the stone.'
- i. 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)
- j. 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.'
- k. 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.'
(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:*

- a. [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)
- 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.' (Fijian)

- c. Mi [VP j-k'ux] tyi otyoty **jiñi waj**
IMPF A1-eat P house DET tortilla
'I eat the tortillas in the house.' (Ch'ol; Coon 2010a:367)
- d. [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.' (Gitksan; Forbes 2018:22)
- e. 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)
- f. Ba be Maria **beku'** bidao' ni.
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:*

- a. Ne [VP holoholo **kapiniu kiva** fakaeneene] a Sione.
PST wash dish dirty carefully ABS Sione
'Sione washed dirty dishes carefully.' (Niuean; Massam 2001:158)
- b. e a [VP kau-ti **au mai**] ko Eroni.
3SG PST bring-TR.PR 1SG DIR DET.PR Eroni
'Eroni brought me.' (Fijian)
- c. Mi [VP j-k'ux **waj**] tyi otyoty.
IMPF A1-eat tortilla P house
'I eat tortillas in the kitchen.' (Ch'ol; Coon 2010a:367)
- d. [VP u-dapo **týram**] teko kury
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:*

- a. Ne [VP holoholo kapiniu kiva **fakaeneene**] a Sione.
PST wash dish dirty carefully ABS Sione
'Sione washed dirty dishes carefully.' (Niuean; Massam 2001:158)

- b. e a [VP tu **cake tiko**] o 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-ə-'y] =hl hun k'uxhl gan-t=hl
together tasty-CAUS-TR-1SG.II =CN salmon halibut PCNJ-3II-CN
laaxw.
trout
'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)

- 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 tsāñ-s-ä **cha`-kojty kalem 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`ihu`i**] '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 OR ART.N dog PROG
'You were seeing Eroni and the dogs.'
- b. e a [VP diri-ki [**rau_i na niu_i**] tiko] ko Eroni.
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.

4.3 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 inu **kofe kono**] a Mele.
PST drink coffee bitter ABS Mele
'Mary drank bitter coffee.'

4.4 Clemens (2014, 2019)

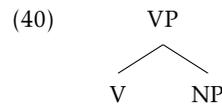
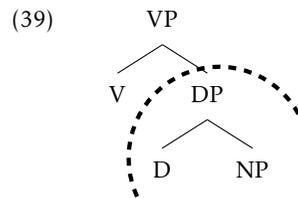
- Clemens (2014, 2019) presents an account of the correlation between stranding and the presence of articles in Niuean.
- She proposes that DPs with an article are **phases**, while the absence of an article results in a **non-phasal nominal**.
- Phasehood provides of understanding the distinction between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



- ▶ 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) *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)

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

(Supporting evidence for the predicted prosodic structure is found for Niuean in Clemens (2014, 2019) and for Ch'ol in Clemens and Coon (2018b).)

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**:⁸

(42) **SELECTIONAL ADJACENCY:**
A head H must be adjacent to any dependent in a selectional relationship with H.⁹

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

Input: [V Obj Adv] ... [V Obj Adv]	SELADJ	REALIZEG	CONTIG
a. [V Obj Adv] ... [V Obj Adv]		*	*
b. [V Obj Adv] ... [V-Obj-Adv]	*!	**	
c. [V Obj Adv] ... [V Obj Adv]	*!		*

⇒ 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.

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".

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:*

- au [PP gaia **Ifate**] ana
1SG from Ifate still
'I am still from Efate.'
- 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. 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:*

- [Ko [DP **e tau kamuta**]] fakamua a lautolu.
PRED ABS PL carpenter before ABS 3PL
'They were carpenters before this.'
- [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.'
(Samoa; 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.

- ▶ In some predicate fronting languages, the way non-verbal predicates are expressed avoids the stranding problem.
- ▶ In Fijian, for instance, a PP predicate is stranded, with the verb *tiko* appearing in initial position (47a–b).

(47) *Fijian PP stranded with verb tiko:*

e [VP **tiko**] na apolo [PP iloma ni kateni].
3SG stay ART.N apple inside LINK box
'The apple is inside of the box.'

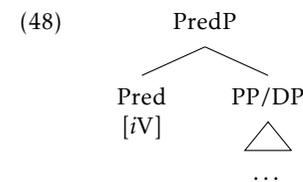
- ▶ Similar constructions are found in Imere and Ch'ol.

⇒ 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):



- ▶ 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 in 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).

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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:*

- a. 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.’
- b. avau rogo-na akoe.
1SG listen-TR 2SG
 ‘I am listening to you.’

The following table divides constituents in Imere by word minimality:

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

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

(51) **Imere adverbial particles**

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

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:*

- a. akoe ka k-ounu a-vai **fefea**?
2SG 2SG.DEP 2SG-drink PL-water how
 ‘How do you drink water?’
- b. au fago-na aia **maruuruu**.
1SG wake.up-TR 3SG slowly
 ‘I woke her/him up slowly.’

- In contrast, none of the bimoraic particles ever tolerate stranding (53a–c).¹⁰

(53) *Bimoraic particles cannot be stranded:*

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

⇒ 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.

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