

Insights from transitive suffixes in Fijian*

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1 Introduction

1.1 Two types of transitive suffix in Oceanic

A number of Oceanic languages have a “short” monosyllabic suffix *-Ci* as well a “long” suffix *-Caki/-Cakini* (e.g. Clark 1973, Lynch et al. 2002, Naitoro 2018). The Fijian root *virī* ‘throw’ appears with at least three suffixes like this:

(1) *Different transitive suffixes for virī ‘throw’:*

- a. au a viri-ki iko.
1SG PST throw-TR 2SG
‘I threw at you.’
- b. iko viri-tak-a na cava?
2SG throw-REAS-3SG ART.N what
‘Why did you throw?’
- c. au a viri-tak-a na polo.
1SG PST throw-ACCOM-3SG ART.N ball
‘I threw the ball.’

1. A syntactic puzzle: Both suffix types are associated with applicative and transitive functions (e.g. Foley 1976, Schütz 1985, Evans 2003, Naitoro 2018):

- ▶ The short suffix *-Ci* is most commonly employed to form transitives, but, with some verbs, it reliably adds a goal/path argument (1a).
- ▶ The long suffix *-Caki* usually looks like an applicative (1b), but, with some roots, it adds a theme argument (1c).

At the same time, short and long suffixes **do not stack** and **all attach to bare intransitive roots**.

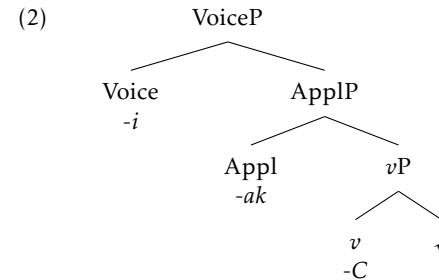
2. A morphophonological puzzle: All *-Ci* and *-Caki/-Cakini* suffixes start with an **idiosyncratic consonant**, which varies by root. A long-standing question is whether to treat these as part of the root or suffix underlyingly (e.g. Hale 1968, 1973; Kiparsky 1970; McCarthy 1981; Sanders 1990, 1991; De Lacy 2001).

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1.2 This talk: A Fijian case study

My proposal:

- ▶ Because of variation in consonants across suffixes and non-verbal contexts, I analyze the idiosyncratic consonant as **the realization of *v*** (cf. Lichtenberk 2001, Ashley 2012), much like theme vowels in Slavic.
- ▶ The idea that *-Ci* is a transitivity marker is captured by treating *-i* as **the exponent of transitive Voice**, taking *v* and Voice to be distinct functional heads (Pylkkänen 2002, Harley 2013).
- ▶ I propose that the long suffix *-Caki* incorporates an **additional argument-introducing Appl head *-ak***.



Why do some verbs depart from this pattern?

- ▶ I identify several subclasses of verbs like *virī* ‘throw’ in (1a–c) with which short and long suffixes show an unexpected alternation.
- ▶ On the basis of “accompaniment” readings that arise with verbs of motion, I propose that these verbs do not take DP objects directly, but a **hidden PP small clause complement**.
- ▶ This prepositional structure is sometimes realized as *-ak* also, giving rise to these apparently exceptional patterns.

⇒ In this way, the Oceanic pattern can be thought of in terms of **familiar syntactic ingredients**, provides insight into the range of functional heads that may appear to express transitivity.

2 Thematic consonants as *v*

2.1 Thematic consonants in Oceanic and their analysis

- ▶ A well-known feature of Oceanic languages is that many verbal suffixes start with an **apparently idiosyncratic consonant**.
- ▶ In Māori, many verb roots can surface with a passive suffix *-Cia*, whose consonant varies arbitrarily (e.g. Biggs 1961, Hohepa 1967):

(3) *Idiosyncratic consonant in Māori passive:*

inu	inu- <u>m</u> ia	'drink'
fau	fau- <u>f</u> ia	'tie'
apo	apo- <u>h</u> ia	'gather'
tu:	tu:- <u>r</u> ia	'begin'
tohu	tohu- <u>ng</u> ia	'show'

(De Lacy 2001:12)

⇒ These consonants derive from a **root-final consonant in Proto-Oceanic**, e.g. **inum* 'drink'. Modern Oceanic languages are vowel-final, so these consonants now surface only with a following suffix.

Two analyses

As famously discussed by Hale (1968, 1973), there are at least two plausible ways of approaching these consonants:

1. In the **"morphological analysis"**, the consonant has been reanalyzed to be part of the suffix, and variation in the consonant is just **allomorphy**.
2. In a **"phonological analysis"**, the consonant is underlyingly still part of the root, but undergoes deletion whenever it would appear in a word-final position.

Much has been written about which of these analyses should be preferred, especially focusing on the Māori data (e.g. Kiparsky 1971; McCarthy 1981; Sanders 1990, 1991; De Lacy 2001).

2.2 Thematic consonants in Fijian

- ▶ In this talk, I present evidence that the **"morphological" analysis** is correct, at least for Fijian.

- ▶ I argue for an analysis in which the **thematic consonant is a realization of *v*** (cf. Lichtenberk 2001, Ashley 2012), relying on the idea that *v* and Voice are distinct functional heads.

What thematic consonants look like in Fijian

- ▶ Fijian (Central Pacific) is spoken by about 700,000 people. Data here comes from elicitation sessions with three speakers of Standard Fijian, and two field methods classes at Queen Mary.
- ▶ In Fijian too, all verbal suffixes contain an initial idiosyncratic consonant. The "short suffix" *-C(i)* (4a–b), for instance, permits the variation in Table 1.¹

(4) *Transitive with short suffix -C(i):*

- a. e a kau-ti au mai ko Eroni.
3SG PST bring-TR 1SG DIR ART.PR Eroni
'Eroni brought me/Jone.'
- b. au a rai-ci au.
1SG PST see-TR 1SG
'I saw myself.'

Table 1. Idiosyncratic consonants in the *-C(i)* suffix.²

Consonant	Examples
<i>c</i> [ð]	<i>rai</i> 'see', <i>tagi</i> 'cry', <i>vunau</i> 'preach'
<i>t</i>	<i>caqe</i> 'kick', <i>kau</i> 'bring', <i>kaasivi</i> 'spit'
<i>v</i>	<i>gunu</i> 'drink', <i>dola</i> 'open', <i>kalu</i> 'whistle'
<i>r</i>	<i>koto</i> 'lie', <i>gito</i> 'play', <i>cobo*</i> 'cover'
<i>k</i>	<i>viri</i> 'throw', <i>vacu</i> 'punch', <i>voro</i> 'break'
<i>m</i>	<i>sili</i> 'wash', <i>canu*</i> 'gather', <i>cedru*</i> 'slurp'
<i>g</i> [ŋ]	<i>bili*</i> 'push', <i>cece*</i> 'lift', <i>lili*</i> 'hang up'
<i>y</i>	<i>boro*</i> 'paint', <i>vakacegu</i> 'retire', <i>kabu*</i> 'scatter'
<i>n</i>	<i>buka*</i> 'add (to a fire)', <i>caba*</i> 'join', <i>cauve*</i> 'carry'
∅	<i>voli</i> 'buy', <i>solu</i> 'give', <i>tara</i> 'build'

- ▶ As in Māori, some of these can be reconstructed to Proto-Oceanic (e.g. **taŋis* 'cry', **poli* 'buy').

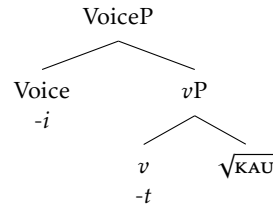
¹The following consonants do not seem to appear in *-C(i)* suffixes: *s*, *b* [β], *w*, *l*, and the prenasalized voiced stops *b*, *d*, and *q* [ʎg] (see Milner 1972:27,89), largely reflecting restrictions on root-final consonants in the proto-languages (see Arms 1973, 1974). The *l* does appear in the transitive suffix *laki*, which has an intensity reading.

²Verbs with a * come from the Gatty (2009) dictionary. All other verbs come from my notes.

A morphological solution for Fijian

- In Fijian too, Hale’s analytical question arises. I argue that these thematic consonants are **independent morphemes** (Lichtenberk 2001; Ashley 2012), realizations of *v*, as has been suggested for thematic vowels in Slavic.

(5) Structure of *kau-ti*:



- I treat variation in the thematic consonant as allomorphy, conditioned by the root and the following suffix:

(6) Vocabulary Insertion rules for thematic consonant:

- $v \rightarrow -t / \text{BRING } ___ \text{Voice}_\varphi$
- $v \rightarrow -v / \text{DRINK } ___ \text{Voice}_\varphi$
- $v \rightarrow \emptyset$
- ...

(There is some evidence in the next section that the following suffix is part of the conditioning environment at least with some verbs.)

2.3 Evidence for a morphological analysis

Different consonants with the same root

- One argument for this analysis comes from the distribution of these consonants across different verbal suffixes. With some verbs, the **same thematic consonant can always appear**, such as with the root *qalo* ‘swim’ (7a–c).

(7) Same thematic consonant across suffixes with *qalo* ‘swim’:

- a. au a qalo-v-a.
1SG PST swim-TR-3SG
‘I swam to it.’
- b. ko Eroni e a qalo-vak-a na koli.
ART.PR Eroni 3SG PST swim-ACCOM-3SG ART.N dog
‘Eroni swam with the dog.’

- c. na cava iko qalo-vak-a?
ART.N what 2SG swim-REAS-3SG
‘Why did you swim?’

- But many verbs allow for some variation (see also Table 2 and 3). The verb *lua* ‘vomit’ appears with three distinct thematic consonants (8a–c).

(8) Thematic consonants across suffixes with *lua* ‘vomit’:

- a. au a lua-c-a na moce-moce.
1SG PST vomit-TR-3SG ART.N NMLZ-sleep
‘I vomited onto the bed.’
- b. au lua-raki dalo.
1SG vomit-ACCOM taro
‘I vomited up taro.’
- c. iko lua-tak-a na cava?
2SG vomit-REAS-3SG ART.N what
‘Why did you vomit?’

- A morphological analysis captures both patterns, since it allows for the root alone or the root and the suffix together to condition the form of *v*:

(9) Vocabulary insertion rules for *qalo* ‘swim’ and *lua* ‘vomit’:

- $v \rightarrow -v / \text{SWIM } ___$
- $v \rightarrow -c / \text{VOMIT } ___ \text{Voice}_\varphi$
- $v \rightarrow -r / \text{VOMIT } ___ \text{ACCOM}$
- $v \rightarrow -t / \text{VOMIT } ___ \text{REAS}$

Idiosyncratic consonants determined by suffix

- Some suffixes too are reliably associated with particular thematic consonants.
- The applicative reason *-taki* usually surfaces with the thematic consonant *-t*, as discussed in section 4.
- A similar lesson emerges from the intensity suffix *-laki*. This suffix can be added to a transitive to create an intensity reading, as in (10a–b).

(10) Intensity suffix *-raki/laki*:

- a. ko Eroni a saba-ki au.
ART.PR Eroni PST slap-TR 1SG
‘Eroni slapped me.’
- b. ko Eroni a saba-laki au.
ART.PR Eroni PST slap-INT 1SG
‘Eroni slapped me repeatedly.’

- ▶ The default form of this suffix is clearly *-laki*. But a small set of verbs surfaces with *-raki* instead (e.g. Schütz 2014:162).
- ▶ As noted by Arms (1973), there are also number of cases in which either the thematic consonant of the short suffix is preserved, or an entirely different thematic consonant appears:

(11) *Variation in thematic consonants with intensity suffix:*

Transitive	Intensity form	Root
mere- <u>k</u> i	mere- <u>k</u> aki	'crumble'
sosi- <u>i</u>	sosi- <u>k</u> aki	'scratch'
tavu- <u>n</u> i	tavu- <u>k</u> aki	'char'
wiri- <u>c</u> i	wiri- <u>c</u> aki	'turn, revolve'
moi- <u>c</u> i	moi- <u>t</u> aki	'twist'
cegu- <u>v</u> i	cegu- <u>v</u> aki	'breathe on'

(Arms 1973:514–515)

⇒ An allomorphy analysis can capture these patterns if *-l* is conditioned by the intensity suffix, with lexical exceptions conditioned by root and suffix.

But do we know that these are *v* heads?

- ▶ One argument comes from the formation of adjectives. A productive way of forming adjectives is through reduplication and attachment of the suffix *-(C)a* (Schütz 1985:17.9; Dixon 1988:232).
- ▶ The suffix can be attached to some of the same roots, but in this context, the idiosyncratic consonant associated with the *-(C)i* suffix does not appear (12).³

(12) *Adjectival suffix -(C)a does not appear with idiosyncratic consonant:*

qaro-ti	'prick'	qaroqaro-a	'prickly'
sava-ti	'wash'	savasava-a	'clean'
tubu-ri	'grow'	tubu-a	'overgrown'
varo-ti	'saw (wood/planks)'	varovaro-a	'rough, unplanned'

(Schütz 1985:17.9; Dixon 1988:232, Gatty 2009)

- ▶ These facts follow if the consonant is no longer synchronically part of the root, but a *v* morpheme, which is naturally absent in adjectival structures.

³The adjectivizing suffix may have its own idiosyncratic consonant, which may be distinct from the one that appears with verbs, as in pairs like *waki-i* 'mix (of viscous/solid materials)' and *wakiwaki-ta* 'viscous' or *laga-ti* 'to wave a war club assertively' and *lagalaga-wa* 'assertive', from Gatty (2009). Such facts could be interpreted as evidence that the adjectival suffix *-(C)a* is also composed of two morphemes, with the consonant a realization of an *a* head.

3 The short suffix as Voice

3.1 The short suffix

What are the other components of the verbal suffixes?

- ▶ I first present evidence that the "short suffix" *-(C)i* also realizes a Voice head, taking *v* and Voice to be distinct functional heads (e.g. Pylkkänen 2002, 2008; Harley 2013).
- ▶ In intransitives, Fijian verbs are usually bare, so only the (typically bisyllabic) root surfaces:

(13) *Fijian verb is intransitive without suffixes:*

- au a **bale**.
1SG PST fall
'I fell.'
- keimami **cabe** tiko.
1EXCL.PL sit PROG
'We all (exclusive) are sitting.'

- ▶ To form a transitive, the most common strategy is to add the **short suffix** *-Ci*. The short suffix can be added to an unergative (14a) or an unaccusative (14b):

(14) *Unergative gunu 'drink' forms transitive with -vi:*

- au a gunu.
1SG PST drink
'I drank.'
- au a gunu-**v**-a na yaqona.
1SG PST drink-TR-3SG ART.N kava
'I drank the kava.'

(15) *Unaccusative kau 'take' forms transitive with -ti:*

- e a kau yani na i-vola.
3SG PST take DIR ART.N NMLZ-book
'The book was taken.'
- e a kau-**t**-a yani na i-vola na cauravou.
3SG PST take-TR-3SG DIR ART.N NMLZ-book ART.N youth
'The youth took the book.'

Note: Deletion of final *-i* is obligatory before 3rd person singular object clitic *-a* (but not in Western Fijian, Pawley and Sayaba 1971:424). See Aranovich (2013) and Van Urk (2020) on the distribution of *-a*.

3.2 The short suffix as Voice

Generalization: the short suffix appears whenever there are **two full nominal arguments in the clause**, regardless of thematic roles.

- ▶ The short suffix is absent in noun incorporation (Alderete 1998, Aranovich 2013, Van Urk 2020), in which the verb root is adjacent to an articleless noun:

- (16) *No short suffix in noun incorporation:*
- e a gunu **yaqona** ko Eroni.
3SG PST drink kava ART.PR Eroni
'Eroni drank kava.'
 - e dau kau **ilokoloko** tuga mai ko Eroni.
3SG HAB take pillow always DIR ART.PR Eroni
'Eroni always brings pillows.'

- ▶ In addition, Fijian allows the causative prefix *vaka/vā-* to attach to intransitives. In causatives, the short suffix also marks transitivity:

- (17) *Short suffix appears in causative:*
- e a vā-gunu-**vi** au na marama.
3SG PST CAUS-drink-TR 1SG ART.N WOMAN
'The woman made me drink.'
 - e a vaka-kau-**t-a** yani na ivola na marama.
3SG PST CAUS-take-TR-3SG DIR ART.N BOOK ART.N WOMAN
'The woman sent the book.'

Proposal: The short suffix is the realization of a Voice head with a valued φ -probe, and so appears whenever object agreement is successful.

- (18)
1. Intransitives lack object agreement and so there is no short suffix.⁴
 2. In noun incorporation, the object is reduced and ineligible for φ -agreement (Baker et al. 2005).
 3. The causative structure comes with own Voice head, which can target the causee DP.

⁴In unergatives, the φ -probe will fail to find a goal. In unaccusatives, I posit that Voice is absent.

4 Reason *-taki*

4.1 A reason applicative

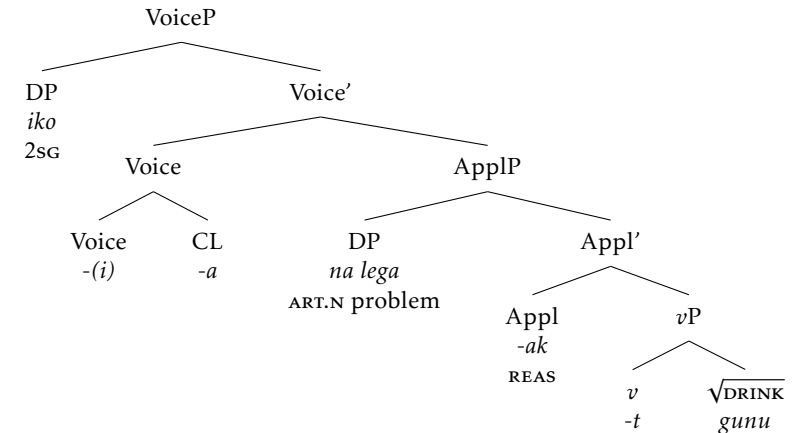
- ▶ Another verbal suffix is reason *-taki*, which combines with most intransitive verb roots to introduce a reason argument (19a–b).⁵

- (19) *Suffix -taki introduces a reason argument:*
- iko a gunu-**tak**-a na lega.
2SG PST drink-REAS-3SG ART.N problem
'You drank because of a death.'
 - na cava iko a sa-kure-**tak**-a?
ART.N what PST 2SG SPONT-shake-REAS-3SG
'Why were you shaking?'

- ▶ Reason *-taki* shows no obvious selectional restriction: it combines with unergatives like *gunu* 'drink' (19a) and unaccusatives like *kure* 'shake' (19b).

Proposal: Reason *-taki* involves a high applicative head *-ak* in the sense of Pytkänen (2008), which can appear in the extended projection of any root:

- (20) *Representation of reason -taki in (19a):*



⇒ I propose that *-t* is an allomorph conditioned by $\text{Appl}_{\text{REAS}}$, blocking forms conditioned by the root and Voice jointly. In support, some verbs with the same consonant across suffixes permit variation (*qalo-vaki/qalo-taki* 'swim because of').

⁵See Massam (1998) on the cognate *aki* in Niuean, which also has an applicative function.

4.2 The restriction to intransitives

Question: If *-taki* is a high applicative, why is it not found on transitive verbs?

- ▶ Fijian maintains a **ban on more than two DP arguments in the same clause**.
 - There are no double object ditransitives.
 - The causative prefix *vaka/vā-* must attach to intransitives.
 - Reason *-taki* attaches only to intransitives.
- ▶ I attribute this ban to a **Distinctness requirement**, in the sense of Richards (2010), which prevents multiple DP objects in the same VoiceP phase.
- ▶ As evidence for this idea, note that reason *-taki* can be added to a verb with an incorporated object (see also Schütz 1985:157 and Aranovich 2013):⁶

(21) *Reason -taki can surface after incorporated noun:*

- a. na cava iko a soko-wasa-tak-a?
ART.N what 2SG PST sail-ocean-REAS-3SG
'Why did you sail oceans?'
- b. e a gunu-yaqona-tak-a na siga ni sucu na marama.
3SG PST drink-kava-REAS-3SG ART.N day LNK birth ART.N woman
'The woman drank kava because of a birthday.'

Since an incorporated noun is not a full DP, Distinctness is satisfied.

Arguments introduced by reason *-taki* are not regular objects

- ▶ Examples like (21a–b) also reveal that *-taki* is Merged above the position of a regular object, as in an applicative analysis.
- ▶ In addition, arguments introduced by *-taki* fail to undergo noun incorporation:⁷

(22) *Objects introduced by reason -taki cannot incorporate:*

- a. *iko a gunu-(taki) lega.
2SG PST drink-REAS problem
'You drank because of problems.'
- b. *iko a dabe-(taki) mosi ni daku-mu.
2SG PST sit-REAS pain LNK back-2SG
'You sat because of back pain.'

⁶The same strategy allows causative *vaka/vā-* to attach to a verb with two arguments.

⁷Note that incorporated nouns may be phrasal in Fijian, interestingly.

5 The *-Caki* suffix

5.1 Introducing the long suffix

- ▶ A number of Fijian verbs show an unusual alternation between the short suffix and a bisyllabic suffix *-Caki*, which is used to introduce a “different type of object” than the short suffix (Arms 1974; Schütz 1985; Dixon 1988).
- ▶ The *-Caki* suffix is distinct from reason *-taki* in function and variation in the consonant. I refer to *-Caki* as the **long suffix**.
- ▶ With a number of verbs, the short suffix introduces a goal/path argument (23a–b), while the long suffix adds a theme (24a–b):

(23) *Goal argument added by short suffix*

- a. au a viri-k-a na tagane.
1SG PST throw-TR-N ART.N man
'I threw at the man.'
- b. e a kalu-v-a na tagane na marama.
3SG PST whistle-TR-3SG ART.N man ART.N woman
'The woman whistled at the man.'

(24) *Theme argument added by long suffix:*

- a. au a viri-tak-a na polo.
1SG PST throw-ACCOM-3SG ART.N ball
'I threw the ball.'
- b. e a kalu-vak-a na sere na tagane.
3SG PST whistle-ACCOM-3SG ART.N song ART.N man
'The man whistled the song.'

⇒ This pattern is **surprising** for a number of reasons:

- Applicatives do not usually add themes and it is unclear why they would be restricted to a specific set of roots.
- The short suffix isn't otherwise associated with a specific type of thematic argument.

5.2 Verbs of motion

- ▶ I will argue for an analysis of these verbs in which they do not combine with their arguments directly, but always involve a PP small clause complement.
- ▶ To motivate this approach, I start by analyzing **verbs of motion**, with which the long suffix gives rise to a distinctive “accompaniment” interpretation.

- ▶ Many verbs of motion combine with both the short and long suffix. The short suffix **adds a goal/path** (25a–b). The long suffix produces what I will call an **“accompaniment” reading** (25c–d).

(25) *Verbs of motion with short and long suffix:*

- au a qalo-**v**-a na yanuyanu.
1SG PST SWIM-TR-3SG ART.N island
'I swam to the island.'
- au a qasi-**v**-a na sala.
1SG PST CRAWL-TR-3SG ART.N path
'I crawled the path.'
- ko Eroni e a qalo-**vak**-a na koli.
ART.PR Eroni 3SG PST SWIM-ACCOM-3SG ART.N dog
'Eroni swam with the dog.'
- au a qasi-**vak**-a na gone.
1SG PST CRAWL-ACCOM-3SG ART.N child
'I crawled with the child.'

- ▶ I refer to this reading as **accompaniment** because (25c–d) describe scenarios in which the agent is leading the object along (e.g. the child is on my back).
- ▶ As Schütz (1985:200) notes, “[the] accompanying object (in both senses!) never refers to another actor, but to something that can be carried.”
- ▶ These interpretations are available with a wide range of motion verbs, as evident in the overview in Table 2.

Table 2. Motion verbs with short and long suffixes.

Root	Meaning	Short suffix	Long suffix
<i>qalo</i>	‘swim’	- <i>vi</i> (goal)	- <i>vaki</i> (accompaniment)
<i>ova</i>	‘swim’	- <i>ci</i> (goal)	- <i>taki</i> (accompaniment)
<i>kada</i>	‘run’	- <i>vi</i> (goal)	- <i>vaki</i> (accompaniment)
<i>cici</i>	‘run’	- <i>vi</i> (goal)	- <i>vaki</i> (accompaniment)
<i>yaqa</i>	‘creep’	- <i>vi</i> (goal)	- <i>vaki</i> (accompaniment)
<i>cabe</i>	‘go up’	- <i>ti</i> (path)	- <i>taki</i> (accompaniment)
<i>qasi</i>	‘crawl’	- <i>vi</i> (path)	- <i>vaki</i> (accompaniment)
<i>dolo</i>	‘crawl’	- <i>vi</i> (goal)	- <i>vaki</i> (accompaniment)
<i>kevu</i>	‘climb down’	- <i>ti</i> (path)	- <i>taki</i> (accompaniment)
<i>lade</i>	‘jump over’	- <i>vi</i> (path)	- <i>vaki</i> (accompaniment)

(26) *English verbs of motion do not take direct object:*

- I crawled (*the child).
- Fatima swam (*the dog).

- ▶ But, as noted by Hoekstra and Mulder (1990) and Folli and Harley (2006), it is often possible **to add an object inside a PP small clause**:

(27) *Small clause structure provides accompaniment reading:*

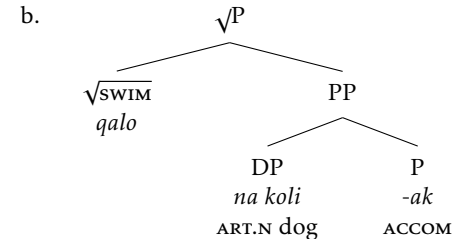
- I crawled [the child around the garden].
- Fatima swam [the dog to the shore].

⇒ These constructions have the same accompaniment interpretation!

Proposal: Fijian motion verbs have a similar structure! What looks like a transitive structure in (28a) actually involves a PP small clause (28b):

(28) *Small clause analysis of long suffix:*

- ko Eroni e a qalo-**vak**-a na koli.
ART.PR Eroni 3SG PST SWIM-ACCOM-3SG ART.N dog
'Eroni swam with the dog.'



I propose to identify *-Caki* with this additional prepositional structure. In this view, *-ak* in all of its guises spells out **an argument-introducing head**.

This preposition **incorporates into the verb**, through head movement, so that it looks similar to the applicative suffix..⁸

⁸One key question is how to treat the thematic consonant, since analyzing it as *v* ends up putting it in the wrong position after successive head movement (Root-P-*v*). One option is that the thematic consonant in this case spells out a functional head inside the PP, *p*. See also footnote 9.

5.3 A small clause analysis

- ▶ Motion verbs in many languages do not usually combine with a direct object (e.g. Hoekstra 1984; Folli and Harley 2006):

Evidence for a complementation structure

Objects introduced by *-Caki* suffixes may incorporate, unlike reason objects:

(29) *Objects introduced by long suffixes may incorporate:*

- a. ko Eroni e a qalo-**vaki** koli.
ART.PR Eroni 3SG PST SWIM-ACCOM dog
'Eroni swam with dogs.'
- b. au lua-**raki** dalo.
1SG vomit-ACCOM taro
'I vomited up taro.'
- c. e a kalu-**vaki** sere na tagane.
3SG PST whistle-ACCOM SONG ART.N man
'The man whistled songs.'

- ▶ *-Caki* suffixes are **obligatorily preserved** in noun incorporation, surfacing inside of the incorporated noun. Reason *-taki*, in contrast surfaces **outside** an incorporated noun.
- ▶ As a result, it is possible for reason *-taki* and *-Caki* to co-occur with noun incorporation:⁹

(30) *Reason -tak(i) can co-occur with long suffix:*

- na cava iko a qalo-**vaki**-koli-**tak**-a?
ART.N what 2SG PST SWIM-ACCOM-dog-REAS-3SG
'Why did you swim with dogs?'

Verbs of motion with a short suffix

- ▶ I adopt the same structure for verbs of motion with a short suffix, but **without an overt realization of the small clause**.
- ▶ In this view, the goal/path argument is not added by the short suffix, but this covert PP structure.
- ▶ These small clauses will usually only add one object, because of the Distinctness requirement discussed in section 4.2, unless one argument incorporates:

(31) *Noun incorporation with alternating verbs:*

- e a cabe-**uli-ni-vanua**-tak-a na **beki** na tagane.
3SG PST go.up-head-POSS-place-ACCOM-3SG ART.N bag ART.N man
'The man went up the mountain with a bag.'

⁹Note that such examples provide evidence too for two distinct sources of the thematic consonant, *v* associated with the long suffix and *t* associated with the reason suffix.

5.4 Other verb classes with *-Caki* suffixes

What about verbs that appear to take themes?

- ▶ I'll argue that this analysis extends to these cases as well, and that these verbs **do not in fact take themes in a regular way**.
- ▶ There are two relevant subclasses of verbs. With **verbs of ballistic motion**, the short suffix marks a goal (32a–b), and the long suffix the theme (32c–d).

(32) *Verbs of ballistic motion with short and long suffix:*

- a. au a kolo-**v**-a na tagane.
1SG PST THROW-TR-3SG ART.N man
'I threw at the man.'
- b. au a vana-**Ø**-a na tagane.
1SG PST SHOOT-TR-3SG ART.N man
'I shot at the man.'
- c. au a kolo-**tak**-a na polo.
1SG PST THROW-ACCOM-3SG ART.N ball
'I threw the ball.'
- d. e a vana-**tak**-a na dakai na marama.
3SG PST SHOOT-ACCOM-3SG ART.N gun ART.N woman
'The woman shot the gun.'

- ▶ With **verbs of (bodily) emission**,¹⁰ the short suffix marks a goal (33a–b), and the long suffix introduces the emission/theme (33c–d).¹¹

(33) *Verbs of emission with short and long suffix:*

- a. au a lua-**c**-a na moce-moce.
1SG PST vomit-TR-3SG ART.N NMLZ-sleep
'I vomited onto the bed.'
- b. e a mimi-**ci** au na gone.
3SG PST urinate-TR 1SG ART.N child
'The child peed on me.'
- c. au a lua-**rak**-a na dalo.
1SG PST vomit-ACCOM-3SG ART.N taro
'I vomited up the taro.'
- d. au a mii-**cak**-a mai na dra.
1SG PST urinate-ACCOM-3SG DIR ART.N blood
'I peed blood.'

¹⁰Note that I include in this class verbs that describe emission of sound, particularly *kalu* 'whistle' and *kaci* 'call'. With these, the short suffix marks the goal, as with verbs of bodily emission, and the long suffix the message or song communicated.

¹¹Note that the verb 'urinate' surfaces as *mii* and *mimi*, apparently interchangeably.

- ▶ A full list of these verbs appears in Table 3, based on lists in Foley (1976), Dixon (1988), and Schütz (2014), and a manual search of Gatty’s (2009) dictionary.

Table 3. Verbs of ballistic motion and emission.

Root	Meaning	Short suffix	Long suffix
<i>virir</i>	‘throw’	- <i>ki</i> (goal)	- <i>taki</i> (theme)
<i>coka</i>	‘spear’	- <i>i</i> (goal)	- <i>taki</i> (theme)
<i>kolo</i>	‘throw’	- <i>vi</i> (goal)	- <i>taki</i> (theme)
<i>ula</i>	‘toss’	- <i>ki</i> (goal)	- <i>taki</i> (theme)
<i>vana</i>	‘shoot’	- <i>i</i> (goal)	- <i>taki</i> (theme)
<i>kaci</i>	‘call’	- <i>vi</i> (goal)	- <i>vaki</i> (emission)
<i>kalu</i>	‘whistle’	- <i>vi</i> (goal)	- <i>vaki</i> (emission)
<i>kaasivi</i>	‘spit’	- <i>ti</i> (goal/emission)	- <i>taki</i> (emission)
<i>mii/mimi</i>	‘urinate’	- <i>ci</i> (goal)	- <i>caki</i> (emission)
<i>veka</i>	‘poop’	- <i>ci</i> (goal/emission)	- <i>taki</i> (emission)
<i>lua</i>	‘vomit’	- <i>ci</i> (goal)	- <i>raki</i> (emission)

Proposal: Like verbs of motion, these verbs in fact only combine with a small clause. Variations in small clause structure yield the alternation between short and long suffix.

Why treat these verbs the same way?

- ▶ With these verbs too, the short suffix marks a goal/path.
- ▶ All of these verbs are unergative (in contrast to the other suffixes), which follows if what distinguishes them is that they take a small clause complement in the transitive.
- ▶ These themes are not as different from the accompaniment reading as they may seem. All three verbs classes **describe movement**, and the long suffix **always introduces the entity that travels along this trajectory** (see also Hill 2002:547).

Independent evidence for unusual themes

- ▶ The idea that apparent themes of verbs of ballistic motion and emission may involve additional hidden structure comes from the distribution of **dative case in Icelandic**.
- ▶ A well-known problem in the study of quirky case is that some verbs exceptionally take dative themes (e.g. Einarsson 1945; Jóhannsdóttir 1996; Svenonius 2002; Jónsson 2012):

- (34) *Dative themes in Icelandic:*
- Nautið meig þá öllu vatninu.
bull.DEF urinated then all.DAT water.DEF.DAT
‘The bull then urinated all the water.’
 - Einar kastaði spjótinu 70 metra.
Einar threw javelin.DEF.DAT 70 meters
‘Einar threw the javelin 70 meters.’
 - Barnið hellti mjólkinni á gólfíð.
child.DEF spilled milk.DEF.DAT on floor.DEF
‘The child spilled the milk on the floor.’
(Jónsson 2012:147)

- ▶ Jónsson (2012) identifies the following three verb classes:

- (35) *Verb classes that take dative objects in Icelandic:*
Emission verbs: *blikka* ‘blink’, *blæða* ‘bleed’, *endurvarpa* ‘relay’, *gjòsa* ‘erupt, spew’, *gubba* ‘vomit’, *hringja* ‘ring’, *hrækja* ‘spit’, *leka* ‘leak’, *míga* ‘urinate’, ...
Verbs of ballistic motion: *bomba* ‘hit hard, blast’, *dúndra* ‘hit hard, blast’, *fleygja* ‘toss’, *henda* ‘throw away’, *kasta* ‘throw’, *skjóta* ‘shoot’, ...
Pour verbs: *ausa* ‘scoop, ladle’, *demba* ‘spill, pour out’, *hella* ‘pour’, *skvetta* ‘splash’, *sletta* ‘splash’, *sulla* ‘splash (around)’
 (Jónsson 2012:146)

- ▶ We can make sense of these patterns if emission verbs and verbs of ballistic motion may involve **additional prepositional structure that assigns dative**.
- ▶ (Pouring verbs seem to appear with short suffixes in Fijian (e.g. *sova-ri* ‘pour’, *savu-yi* ‘pour water on’) although I found at least one case with a long suffix (*to-vaki* ‘to be filled with (liquid)’).

Concluding remarks

- ▶ This paper has presented a syntactic analysis of the properties of *-Ci* and *-Caki* suffixes in Fijian.
- ▶ I argued for an analysis of thematic consonants as **realizations of *v***, taking them to be independent morphemes (Lichtenberk 2001; Ashley 2012).
- ▶ In addition, I proposed an account of apparent departures from the transitivizing function of *-Ci* and applicative function of *-Caki* by arguing that the relevant verbs combine with a **small clause complement**.

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Appendix A: Patterns of verbalization

► A more complex argument for identifying thematic consonants with *v* comes from **verbalization**.

► The most common suffix on verbalized roots is in fact the **suffix -taki** (e.g. Arms 1973, Schütz 1985:sec. 12.3.5). Loanwords usually appear with *-taki*, for instance.¹²

- (36) *Loanwords appear with -taki:*
- | | |
|---------------------|-----------------------|
| barasi- taki | ‘brush’ |
| vurumu- taki | ‘sweep using a broom’ |
| mop- taki | ‘mop (the floor)’ |
| polisi- taki | ‘polish’ |
- (Tamata 2003: p. 219)

► Similarly, *-taki* combines with nouns to form verbs, such as *bai-taki* ‘to put a fence around’ from *bai* ‘fence’ and *gato-taki* ‘to speak in a glottal stop dialect’ from *gato* ‘glottal stop’ (Schütz 1985: p. 164–165).

► When a causative is added to a non-verbal predicate or a verb that lacks a transitive, *-taki* appears, as in *vaka-levu-taki* ‘increase’ from *levu* ‘big’.

⇒ To capture these facts, I propose that *-tak* is the default form of *v* in plain transitives, used whenever a root-specific allomorph is unavailable:

- (37) *Insertion rule for -tak*
v → *-tak* / ___ Voice_φ

It may seem odd for *-tak* to be the default form, but nothing prevents *v* from spelling out a larger morpheme. The default use of *-taki* is widely recognized in work on Fijian (e.g. Arms 1973, Foley 1976, Schütz 1985, Dixon 1988, Tamata 2003).¹³

¹²There are a small number of loans with *-Ci* suffixes, such as *kisi-vi* ‘kiss’ and *loka-ti* ‘lock’.

¹³In support of this idea, note that there appears to be no variation in the initial consonant of default *-taki*, since *-tak* is one morpheme. In her survey of transitive endings on loaned verbs, for instance, Tamata (2003) notes that only *-taki* and *-Ci* suffixes appear. When a *-Caki* suffix is possible, it reflects the intensity suffix (e.g. *kisi-laki* ‘to kiss repeatedly’ from *kisi-vi* ‘to kiss’).

-tak as elsewhere form

► Morphological evidence for the rule in (37) comes from noun incorporation in causatives. When the causative prefix *vaka-/vā-* is added to a root, the short suffix *-C(i)* appears (38a–b).

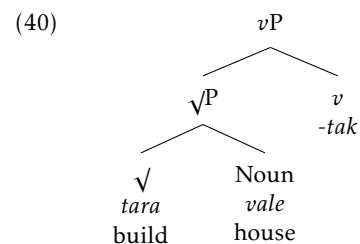
- (38) *Short suffix appears in causative:*
- | | | | | | | |
|----|----------------------------|-----|--------------------|------|-------|------------------|
| a. | e | a | vā-gunu- vi | au | na | marama. |
| | 3SG | PST | CAUS-drink-TR | 1SG | ART.N | woman |
| | ‘The woman made me drink.’ | | | | | |
| b. | e | a | vaka-kau-t-a | yani | na | ivola na marama. |
| | 3SG | PST | CAUS-take-TR-3SG | DIR | ART.N | book ART.N woman |
| | ‘The woman sent the book.’ | | | | | |

► Noun incorporation is possible in this configuration, but the incorporated noun intervenes in between the root and the transitive suffix:

- (39) na turaga e a vaka-**tara-vale-taki** ira na lewe ni koro.
 ART.N chief 3SG PST CAUS-build-house-TR 3PL ART.N villager
 ‘The chief made the villagers build houses.’

► The thematic consonant usually associated with *tara* ‘build’ is $-\emptyset$.

► But, in this situation, the suffix *-tak(i)* must be used, because the presence of the noun **blocks adjacency between root and v**:



- (41) *v* → $-\emptyset$ / BUILD ___ Voice_φ

⇒ In this way, evidence from verbalization too suggests a link between these transitive suffixes and *v*.

Appendix B: Thematic consonants and meaning

Could thematic consonants represent contentful morphemes?

- ▶ Arms (1973) identifies a number of **semantic generalizations** that go together with the choice of thematic consonant.
- ▶ Motion verbs commonly appear with a *-v* suffix (*qasi-vi* ‘crawl along’, *kada-vi* ‘run to’), and verbs that express forceful contact often surface with *-k* (*saba-ki* ‘slap’, *viriki* ‘throw’).
- ▶ The full list of semantic associations proposed by Arms is in (42).

(42) *Semantic associations suggested by Arms (1973):*

- c ‘pliancy, gentle contact, bodily experience’
- g ‘X-ify, form, support’
- k ‘hardness, force, opening out’
- m ‘insertion, going inside’
- n ‘X-ify, form, support’
- r ‘location, posture, change of state’
- t ‘use of limb or instrument, moderately force, performative’
- v ‘motion to, motion for, motion over’
- ∅ ‘mild force, miscellaneous’

- ▶ A first objection is that **there are many exceptions** (e.g. *viriki* vs. *kolo-vi* ‘throw’ or *qalo-vi* vs. *ova-ci* ‘swim to’). Arms points out that only 60% of the 1009 endings fit these semantic classes (p. 522).
- ▶ Second, some of the categories identified by Arms are **relatively broad** (e.g. ‘mild force’, ‘pliancy’), and do not obviously correspond to differences in argument structure.
- ▶ Finally, Arms notes that native speakers **do not seem to generalize these patterns** to nonce forms or loanwords (sec. 2.4) and also the discussion above).

⇒ There may have been a stage of the language at which this system was productive, but I take this picture to suggest that thematic consonants are best treated as **lexically arbitrary in principle**.¹⁴

¹⁴There may be some syntactic or semantic features, however, that are picked out by some of these allomorphy rules, such as motion. Similarly, Arms notes that *-n* and *-g* often form denominal verbs.