Fijian Reduplication

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1   Introduction

This paper examines reduplication systems in Fijian. Fiji is one of the Oceanian countries as Figure 1 shows. As Figure 1 indicates, Fiji is close to Australia and New Zealand. However, according to a language consultant, not only Fijian and English, but also Hindi and Urdu are spoken as official languages in Fiji since many immigrants moved from regions around India to Fiji. Most people use Standard Fijian also called Bauan, but there are also dialects such as Boumaa Fijian which is spoken in the eastern islands of Fiji.
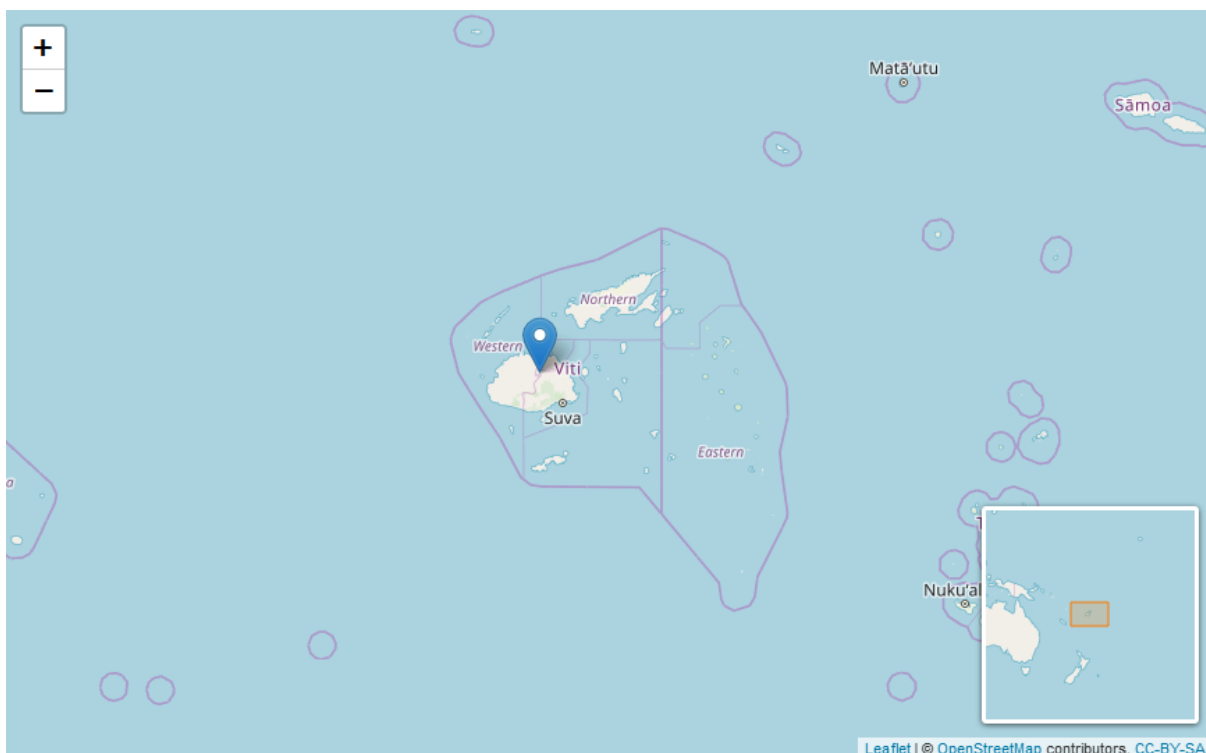

Figure 1: A map of Fiji (longitude=178.0650, latitude=-17.7134). Made by R (R core team 2018) using "leaflet" package (Cheng, Karambelkar and Xie 2018).

Although previous studies on Fijian grammar have already reported the reduplication patterns in Fijian, phonological accounts to those patterns have not been done. Thus, this paper investigates the phonological patterns of the phenomenon.

This paper is organized as follows. Section 2 reviews reported Fijian reduplication patterns by previous studies. Section 3 provides the data and section 4 analyzes the reduplication system of Fijian based on the obtained data. Section 5 discusses several points. Section 6 summarizes the main points and concludes the paper.

2   Literature Review

This section reviews previous works on Fijian focusing on the reduplication system.

2.1 *Milner (1972)*   Milner (1972) described the reduplication patterns based on the number of syllables consisting of the base. More precisely, when the base has two syllables and three syllables have been shown.

(1) Full reduplication, partial reduplication, no singular form

	Fijian	**English**	**Fijian**	**English**
a.	caka	doing, making	cakacaka	working
b.	qase	old, elder	qaseqase	cunning, clever
c.	liwa	blowing (of the wind)	liliwa	cold (of food, etc.)
d.	loma	loving	loloma	love
e.	vinaka	good	vīvinaka	good (plural)
f.	balavu	long	bababalavu	very long
g.	yagona	kava	yagoyagona	a plant related to kava
h.	calidi	kind of crackling noise	cacalidilidi	repeated crackling
i.			lailai	small
j.			manumanu	bird, animal

First, if the base has two syllables, reduplication can be either full or partial. (1a, b) show examples where the base is fully reduplicated, whereas (1c, d) indicate when the first syllable is reduplicated. Second, when a base has three syllables, reduplication can be one of the following ways: the first syllable is only reduplicated (=1e), the first syllable may occur three times (=1f), and the first two syllables are reduplicated (=1g). Although (1h) shows another type of full reduplication, Milner explained this might be an exception because "ca" could be a prefix. It was also reported that these methods of reduplication are not mutually exclusive. (1i, j) some bases do not have a singular form. However, these words are not reduplicated words based on (2) (Milner 1972).

(2) Bases having both full and partial reduplication

	Fijian	**English**	**Fijian**	**English**	**Fijian**	**English**
a.	levu	large	lelevu	large	levulevu	fat
b.	leka	dwarf	leleka	short	lekaleka	short

Table (2) demonstrates the examples showing both full and partial reduplication. According to Milner (1972), however, levu is the common singular form, lelevu is the plural and levulevu corresponds to the English "fat". For (2b), lekaleka is the common singular form and the plural form is leleka. The base leka corresponds to the English "dwarf". Similarly, it was reported that (1i) lailai is the common singular form and plural is lalai.

2.2 *Shütz (2014)*   Schütz (2014) also reported similar patterns reported by Milner (1972).

(3) Examples of full reduplication and having no singular form

	Fijian	**English**	**Fijian**	**English**
a.	beka	(general name for 'bat')	bekabeka	(specific type of beka)
b.	wai	water	waiwai	oil
c.			sokisoki	baloonfish
d.			galegale	teeth (molars)

Although examples of partial reduplication are not provided, Schütz described that reduplication can be divided into full and partial. (3a,b) are examples of full reduplication. Both of the bases having two syllables are fully reduplicated. Schütz also showed that many animal names, plant names, and body parts names are reduplicated root without single-root counterpart as shown in (3c, d).

3   Data

This section shows the data derived from the elicitation session with one Fijian native speaker FIJ001 done in spring 2019. The recording sessions were done using a head-worn microphone and a recorder TASCAM. The following data related to reduplication are divided into methods of reduplication. (4) demonstrates the examples of the base that are fully repeated.

(4) Full reduplication

	Fijian	**IPA**	**English**	**Fijian**	**IPA**	**English**
a.	drē	ⁿdɹeː	pulling	drēdrē	ⁿdɹeːⁿdɹeː	hard, difficult
b.	wai	wai	water	waiwai	waiwai	oil
c.	dua	ⁿdua	one	duadua	ⁿduaⁿdua	only one
d.	sua	sua	stab a person	suasua	suasua	wet
e.	leka	leka	dwarf	lekaleka	lekaleka	short
f.	vola	βolá	to write	volavola	βolaβola	writing
g.	vula	βula	moon	vulavula	βulaβula	white
h.	tina	tʰina	mother	tinatina	tʰinatʰina	female animal
i.	qiri	ŋiɽi	to stram	qiriqiri	ŋiɽiŋiɽi	writing
j.	toro	toro	to shave	torotoro	torotoro	act of shaving
k.	caka	ðaka	doing, making	cakacaka	ðakaðaka	working
l.	qase	ŋase	old, older	qaseqase	ŋaseŋase	cunning, clever
m.	rawa	ɹawa	getting, achieving	rawarawa	ɹawaɹawa	easy, light
n.	calidi	ðaliⁿdi	kind of crackling noise	cacalidilidi	ðaðaliⁿdiliⁿdi	repeated crackling

(4) includes data having different numbers of syllables. (4a) has one syllable, (4b-d) have diphthong, (4e-m) consist of two syllables and (4n) has three syllables. Although most of the example are simply repeated twice, the base in (4n) is separately reduplicated. As Milner (1972) described, this might be because the first syllable ða in (4n) ðaliⁿdi is a prefix and repeated independently from the base.

   Next, (5) illustrates the pattern where the bases are partially repeated.

(5) Partial reduplication

	Fijian	**IPA**	**English**	**Fijian**	**IPA**	**English**
a.	liwa	liwa	blowing	liliwa	liliwa	cold
b.	loma	loma	loving	loloma	loloma	love
c.	lili	lili	hanging	līlili	liːlili	the act of hanging
d.	dredre	ⁿdɹeⁿdɹe	laughing	drēdredre	ⁿdɹeːⁿdɹeⁿdɹe	N/A
e.	cere	ðeɹe	height	cēcere	ðeːðeɹe	high, awesome, great
f.	maca	maða	empty, dry	māmaca	maːmaða	absence of wetness
g.	raba	ɹamba	width	rāraba	ɹaːɹamba	wide
h.	sili	sili	to bath	sīsili	siːsili	bathing
i.	balavu	ᵐbalaβu	long	balabalavu	ᵐbalaᵐbalaβu	very long
j.	(same)			babalavu	ᵐbambalaβu	very long
k.	yagona	jaŋona	kava	yagoyagona	jaŋojaŋona	a plant related to kava

(5a-h) consist of two syllables and (5i-k) have three syllables. When the number of syllables is two, there are two methods of reduplicating the base. One way is that only the first syllable is repeated (=5a,b) and another one is that not only repeating the first syllable but also lengthening the first syllable of reduplicated words (=5c-h). When the base consists of three syllables, there are some ways of repeating the base as Milner (1972) said. Based on the obtained data, these are either reduplicating the first two syllables (=5i,k) or reduplicating the first syllable (=5j). It was confirmed that *balavu* can be reduplicated using both ways.

   (6) indicates the example that can show both partial and full reduplication.

(6) Full and partial reduplication

Fijian	**IPA**	**English**	**Fijian**	**IPA**	**English**	**Fijian**	**IPA**	**English**
levu	levu	large	lelevu	lelevu	large	levulevu	levulevu	fat

Although (6) shows both patterns, based on Milner (1972), *lelevu* is the plural form of *levu*, but *levulevu* is not.

   Examples in (7) do not have single forms but only reduplicated forms.

(7) No single form

	Fijian	**IPA**	**English**
a.	lailai	ɹaiɹai	small
b.	manumanu	manumanu	bird, animal
c.	yamuyamu	jamujamu	island
d.	kalokalo	kalokalo	star
e.	loaloa	loaloa	black
f.	vulavula	vulavula	white
g.	damudamu	^{n}damu^{n}damu	red

Even though data in (7) look like reduplicated forms, it is possible to hypothesize that these are single forms rather than repeated forms since *lailai* is reported to be a single form and *lalai* is the reduplicated form. Indeed, this is not always the case for all of the examples in (7), but it is not clear based on the current data.

4   Analysis

This section analyzes the Fijian reduplication system based on the data in the previous section. The following analyses focus on full and partial reduplication shown in (4) and (5) since the patterns of (6) and (7) are ambiguous.

4.1   *Prosodic Size*   This subsection examines whether any restriction exists on the prosodic length of the reduplicated items. Table (8) and (9) indicate how reduplications occur in examples (4) and (5).

(8) Full reduplication

	Single form	**Reduplicated form**
a.	σ_1	$\sigma_1\sigma_1$
b.	$\sigma_1\sigma_2$	$\sigma_1\sigma_2\sigma_1\sigma_2$

(9)   Partial reduplication

	Single form	**Reduplicated form**
a.	$\sigma_1\sigma_2$	$\sigma_1\sigma_1\sigma_2$
b.	$\sigma_1\sigma_2$	$\sigma_1{:}\sigma_1\sigma_2$
c.	$\sigma_1\sigma_2\sigma_3$	$\sigma_1\sigma_1\sigma_2\sigma_3$
d.	$\sigma_1\sigma_2\sigma_3$	$\sigma_1\sigma_2\sigma_1\sigma_2\sigma_3$

When full reduplication happens, one or two syllables are repeated twice. At the same time, a case of three syllables being fully repeated was not found in this study. The method of partial reduplication similar to full reduplication in this point of view since it happens by repeating the first syllable (9a-c) or first two syllables (9d) though the repeated syllable is lengthened in (9b). From these observations, the items that can be reduplicated must be two syllables at most, in other words, it must be a foot.

4.2   *Direction of Reduplication*   The direction of the reduplication process can also be analyzed from the data above. Although (8) do not clarify this point, (9) implies that the direction of the reduplication should be right to left since only the first one or two syllables are repeated but not the third syllable. If the reduplication happens from left to right, the process is more difficult than another option. For example, if left to right is the case, (9a) has $\sigma_1\sigma_2\sigma_1\sigma_2$ structure, and then deletes the second syllable σ_2. This is more complicated than right to left process which is only repeating the first syllable. The same explanation can be applied to (9b-d). As a result, the direction of the reduplication process can be regarded as right to left.

5   Discussion

One of the challenges in investigating the Fijian reduplication system is to clarify how types of reduplication are decided, in other words, in what condition do full and partial reduplication happen. Consonants and vowels contained in examples are divided by the position (C_1, V_1, C_2, V_2) to examine the pattern for this phenomenon. Table (10) demonstrates those segments (overlapping segments are bolded).

(10) Segments contained in bases consisting of two syllables

Position in Base ($C_1V_1C_2V_2$)	Full reduplication	Partial redulication
C_1	β, t, **ð**, **ɭ**, ŋ	m, dɭ, **ð**,s, l, ɭ
V_1	**a, i**, u, **e, o**	**a, i, e, o**
C_2	n, s, l, k, **ɭ**, r, w	m, b, ð, dɭ, ɭ
V_2	**a, i, e**, o	**a, i, e**

(10) indicates that at least one segment is overlapping in both types of reduplication based on the obtained data. This means that there is no complementary distribution in a segment level and the pattern cannot be drawn. At the same time, it might also be possible that this reduplication pattern is associated with pitch accents, though this study does not have enough data to discuss that point.

6 Conclusion

This paper has investigated the Fijian replication system. Although the reduplication pattern was not found at a segmental level, this paper reported that the maximal prosodic size to be reduplicated is a foot and the direction of the reduplication process is from right to left.

7 References

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