Inheritance of Exceptionality by the Reduplicant in Palauan

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0. Introduction

(1) Reduplication

Has been important in OT in arguing…

- against serialism (no need for a "copying step" whose ordering w.r.t. rules may be paradoxical)
- for a similarity-enforcing relationship between related strings (correspondence).

(2) Faithful reduplicants

When *R* contains input material missing in *B* (i.e., *R* is more faithful to the input), it seems to need some way of "seeing" the input.

Most cases that have been discussed involve neutralizing vowel deletion or reduction in the base, but not in the reduplicant:

- Klamath (McCarthy & Prince 1995)
  /RED + mbody' + dk/ **mbo-mp**ditk 'wrinkled up'

  similarly for…
- Tohono O'odham (Fitzgerald 1999, 2000)
- Lushootseed (Struijke 2000)
- Kwakwala (Struijke 1998)
- Pima (Riggle 2002)
- Chamorro (Klein & Harris 2000)
- maybe Yapese (see data in Jensen 1997, p. 111)

  Kirundi (Brassil ms.) is a bit different: one copy displays the underlying tone, and the other copy displays the underlying vowel length.

(3) How to account for this?

- Full Model (McCarthy & Prince 1995)

  Input-Reduplicant correspondence allows reduplicant to "see" input.

- Broad Correspondence (Spaelti 1997, Struijke 2001)

  There are constraints that just require input material to have an output correspondent *somewhere*—whether in the reduplicant or in the base (so reduction or syncope in just one is OK).

- Infixation analysis (Riggle 2002)

  These apparently prefixing cases can be reanalyzed as having an *infixed* reduplicant. Then it's the reduplicant that's less faithful, as expected.

Faithful reduplicants have led some to question correspondence, parallelism.

- Double generation (Inkelas & Zoll 2000)—dispenses with B-R correspondence.

  Reduplicant and base are both morphologically generated from the input, but subject to different co-phonologies (one truncates, the other reduces or syncopates).

- Serialism (Raimy 2000)

  Let syncope follow "linearization" ≈ copying.

(4) This talk

- Goal: Present a different type of faithful reduplicant.
- Claim: Reduplicant inherits a stem's lexical exceptionality with respect to vowel reduction → aspects of the reduplicant in Palauan are not predictable from the base alone.

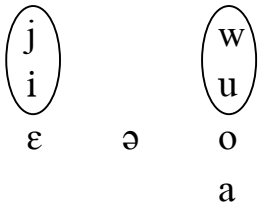
(5) Overview

- Palauan
- Vowel reduction: regular pattern and exceptions
- Reduplication
- Vowel reduction in reduplication: reduplicant inherits exceptionality

1. Palauan

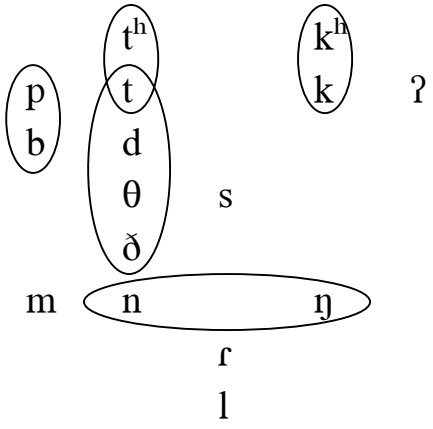
- Western Malayo-Polynesian
- 15,000 speakers in Palau/Belau and Guam (Grimes 2000)
- All data here from Josephs (1975, 1990), Flora (1974), and Wilson (1972). (Consonant allophonic detail not always transcribed in sources—I've tried to follow the descriptions' predictions)

(6) Vowel inventory



[ə] occurs only in unstressed syllables

(7) Consonant inventory



2. Vowel reduction: regular pattern and exceptions

- Unstressed vowels are reduced
- Synchronic chain shift
- Reduction is not fully predictable

See Zuraw (2001) for analysis based on Crosswhite's (1999) theory of vowel reduction.

(8) Several stress-shifting suffixes

-k, -m, -l, -d, -mam, -miu, -ɾ (possessive)
/buʔi/ (V → Ø / __#)

b**ú**ʔ	‘spouse’
b**ə**ʔi-m	‘your (sg.) spouse’
b**ə**ʔi-k^{h}	‘my spouse’
b**ə**ʔi-l	‘his/her spouse’

-állə (“anticipating state” verb)

mə-l**ú**ʔəs	‘write’
l**ə**ʔəs-állə	‘is to be written’

-ij (3rd person sg. object)

mə-l**ú**ʔəs	‘write’
l-il-**ə**ʔəs-íj	‘writes it’

2.1 Short vowels

(9) Most short vowels reduce to schwa (74%)[1]

ɾ**á**kt^{h}	ɾ**ə**kt-él	‘sickness’
s**é**səb	s**ə**səb-él	‘fire’
b**ó**tk^{h}	b**ə**tk-él	‘operation’
ɾ**í**ŋəl	ɾ**ə**ŋəl-él	‘pain’
k**ú**k-	k**ə**kú-l	‘nail’

(10) Some short vowels delete (19%)

ɾ**á**t^{h}	ɾ̩_tú-l	‘dry or withered state (of tree)’
ol**é**tem	ol_təm-él	‘index finger’’
kəɾ**ó**ðəl	kəɾ_ðəl-él	‘dock’
os**í**b	os_pú-l	‘pick’
k**ú**ðəm-	k_təm-él	‘interval’

[1] In a database of 1,019 nouns with suffixal possessives, from Josephs (1977). The database will be larger when I have added suffixed verbs.

(11) Trends in conditioning the ə/Ø difference

- High vowels delete more often (38%) than non-high vowels do (10%).
- Deletion is rare if it would create…
  - a CCC sequence (unless one can become syllabic: *klîðm, ḳl̩ðm-él* 'head')
  - an obstruent geminate
  - certain CC sequences (especially those including [ʔ])

(12) Still, it's not completely predictable

- *CCC
  - Blocks V deletion

    /ðVɾumk/ ðəɾ**ú**mk ðəɾəmk-él 'loud noise'

  - Resolved by V insertion

    /tVbtibi/ təbt**í**b- təbə̲t_bî-l 'small pieces'

- *GEMINATE
  - Blocks V deletion:

    /kuku/ k**ú**k- k**ə**kú-l 'nail'

    /sɛsVb/ s**é**səb s**ə**səb-él 'fire'

  - Resolved by C deletion:

    /tutu/ t**ú**t^{h} tú-l 'breast'

    /tɛti/ t**ɛ́**t^{h} tî-l 'bag for betel nut'

- CLUSTERCONDITIONS
  - No V deletion

bɾ	/b̲-l-ɛɾ̲Vk/	b-l-**é**ɾək^{h}	bəɾk-állə	'flattened'
bs	/b̲-l-us̲Vŋ/	b-l-**ú**s	bəsəŋ-állə	'pulled'
blt	/bl̲ut̲Vk/	bl**ú**tək^{h}	blətək-él	'canoe race'
klð	/k̲ul̲ð/	k**ú**lð	kəlð-él	'pinch mark'

  - Yes V deletion

bɾ	/b̲-l-uɾ̲Vʔ/	bl**ú**rəʔə	p_ɾəʔ-állə	'speared'
bs	/b̲-l-us̲Vʔ/	bl**ú**səʔə	p_səʔ-állə	'plucked'
blt	/b̲-l̲-as̲Vʔ/	bl**á**səʔ-	bl̩_səʔ-él	'time of event'
klð	/kl̲ub̲Vð/	kl**ú**bəð	kl̩_bəð-él	'boat landing'

→ There has to be some lexical information determining, at least in some cases, whether a short vowel reduces to *ə* or Ø.

(13) Further unpredictability in short vowels

- 5% of short vowels don't reduce at all: *ðîŋ*, *ðiŋá-l* 'ear'
- 2% change into a different vowel: *báb*, *bɛbú-l* 'surface'

2.2 Long vowels

(14) Most long vowels shorten (87%)

underlying Vs			
aa	*GAP*		
ɛɛ	ɾ**éj**k^{h}	ɾ**ɛ**k-él	'rustling sound'
oo	ðək**ów**l	ðək**o**l-él	'cigarette'
ii	ʔ**ij**s	ʔ**i**s-él	'escape'
uu	b**úw**ʔə	b**u**ʔ-él	'betel nut'

Note the counterfeeding: these don't reduce all the way to *ə* or Ø.

(15) Exceptions among long vowels

- 6% of long vowels overreduce to schwa: *rúwl, rəll-él* 'something made'
- 4% overreduce to zero: *sîjk^{h}, s_k-él* 'search'
- 3% do something unexpected: *îj, jəŋ-él* 'cave'

→ Some lexical information necessary.

2.3 Diphthongs

(16) Diphthongs simplify to front member

underlying Vs			
ɛa	b**ɛ́**ʔəð	b**ɛ**ʔəð-él	‘tin’
ɛo	oɾ**ɛ́**məl	oɾ**ɛ**məl-él	‘forest’
ɛu	t**é**w	t**ɛ**ŋ-él	‘width’
aɛ	b**áɛ**b	b**ɛ**b-él	‘pipe’ (English)
oɛ	bəɾ**óɛ**l	bəɾ**ɛ**l-él	‘spears’
uɛ	*GAP? (found only word-initial examples)*		
ia	ð**já**llə	ð**i**ll-él	‘ship’
io	ŋ**jó**kl-	ŋ**i**kl-él	‘cooking starchy food’
iu	ʔ**jú**kl	ʔ**i**kl-él	‘good voice’
ai	b**áj**s	b**i**s-él	‘action of wandering around’
oi	b**ój**ð	b**i**ð-él	‘chant about travelers’
ui	t**új**ʔ	t**i**ʔ-él	‘torch’

Word-initial facts may be different—few examples and sources disagree on those examples’ pronunciations.

(17) If equal advancement, higher vowel is retained

underlying Vs			
ua	t**wá**ŋəl	t**u**ŋəl-él	‘door’
uo	ʔ**wó**ðəl	ʔ**u**ðəl-él	‘older sister of female’
au	s**áw**l	s**u**l-él	‘tiredness; trouble’
ou	ɾ**ów**s-	ɾ**u**s-él	‘distribution’
iɛ	bab**jé**ɾ	bab**i**lŋ-él	‘paper’ (German)
ɛi	*GAP? (found only 4 examples, all word-final; seem to reduce to [i], but hard to tell because of suffix)*		
oa	om**oá**ʔəl	om**o**ʔəl-él	‘river’
ao	t**áo**ð	t**o**ð-él	‘fork’

(18) Exceptions among diphthongs
71% of diphthongs reduce as described above.

- 3% fail to reduce: *k-l-**îw**t, k**iw**t-állə* ‘clean up’
- 9% reduce to the ‘wrong’ member: *b**óɛ̯**s, b**o**s-él* ‘gun’
- 6% reduce to a different vowel entirely: ***láj,** **lɛɪ**-él* ‘section (of cane)’
- 6% overreduce to schwa: *l**áo̯**k*^{h}*, l**ə**k-él* ‘fat’
- 1% overreduce to zero: *blə**báo̯**l, bləb_l-él* ‘present’
- 3% treat the glide portion as a consonant: *t**já**kl, t**jə**kl-él* ‘knot to record date’
- 1% do something else: *ʔ**îw**s, ʔ**iwə**s-él* ‘seed’

→ Again, some lexical information is necessary.

(19) Section summary
Vowel reduction is largely, but not entirely predictable.

3. Reduplication (2 kinds)

(20) Cɛ- (sometimes Ci-)

bətók^{h}	‘many’	**bɛ**-bətók^{h}	‘just more than enough’
ɾəgós	‘sweet’	mə-**ɾɛ**-ɾəgós	‘rather sweet’
mə-təmállə	‘get broken’	mə-**tɛ**-təmállə	‘easily broken’
mə-ɾəʔóɾəʔə	‘steal’	mə-**ɾɛ**-ɾəʔóɾəʔə	‘keep stealing’
klów	‘big’	**ki**-klów	‘a little bigger’
o-bəʔáklə	‘go adrift’	om-**bi**-bəʔáklə	‘drifting’

Not clear whether *Cɛ-* contrasts with *CV(C)-* reduplication; I won’t discuss it further.

(21) CV(C)-

CV	mə-sáoð	‘explain’	mə-**so**-sáo̯ð	‘try to explain’
	búw-	‘explosion’	o-**bu**-búw	‘keep getting exploded’
CəC	tóɾð	‘frustration’	bəkə-**təɾ**-tóɾð	‘easily frustrated’
	sîkt^{h}	‘cluster of fruit’	mə-**sək**-sîkt^{h}	‘covered with fruit’
CCə	ol-dúm	‘make appear’	ol-**dmə**-dúm	‘keep bobbing up’
	ðə-kîməs	‘wet’	ðə-**kmə**-kîməs	‘(clothes) wet in places’
CəCə	ʔáb	‘ashes’	**ʔəbə**-ʔáb	‘dust’
	ɾ-u-ɛ́bət^{h}	‘fall’	mə-**ɾəbə**-ɾɛ́bət^{h}	‘fall one by one’

First-pass description: reduplicant is vowel-reduced form of base’s first syllable

- *CV* pattern: long vowel or diphthong in base reduces to short vowel.
- *CəC* pattern: short vowel in base reduces to schwa; reduplicant is allowed up to one mora, so (assuming schwa is non-moraic) another *C* is copied.

CəC vs. *CCə* not predictable, except that certain clusters are avoided
e.g. *Cʔə-CV….

CəC vs. *CəCə*: why second schwa?

- To break up consonant cluster? Not necessarily.
  *ka-**bəɾə**-bárt^{h}* ‘hide things from each other’ vs. *ti-**bəɾ**-bɛ́ɾək^{h}* ‘flat’
- To better satisfy MAX-BR? Maybe.
  In 73% of *CəCə* words (and 62% of *CCə*), base has a second vowel (**ɾəbə**-ɾɛ́bətʰ), vs. 18% of *CəC* words.[2]

4. Vowel reduction in reduplication: reduplicant inherits exceptionality

(22) Reduplicant is reduced
Because the reduplicant is unstressed, it’s generally reduced with respect to the base:

CV-CVV…
C*ə*C-CVC…

[2] In a database of 608 reduplicated words, from Josephs (1977).

(23)But it's not always predictable!
Remainder of section examines four areas of unpredictability, and shows that reduplicant's behavior is inherited from lexical entry.

- *CCə-* vs. *CəC-*
- Reduction to unexpected vowel
- Unstressed base vowel
- Nasal substitution (not related to vowel reduction, but works the same way)

4.1 *CCə-* vs. *CəC-*

(24) CCə- *pattern can't be entirely dependent on what the Cs are*

	CCə → C_1C_2 cluster		*CəC → C_2C_1 cluster*	
bɾ	ka-pɾə-búɾəʔə	'spear each other'	ti-bəɾ-pɛ́ɾək	'(land) flat'
bs	o-psə-búsəʔə	'easy to pluck'	ka-bəs-pús	'pull from each other'

(25) Compare other reduced forms of the same stems

CCə	b**ú**rəʔə	'spearing'	p_ɾəʔ-él	'its spearing'
			p_ɾəʔ-állə	'is to be speared'
	b**ú**səʔə	'feathers; fur'	p_səʔ-él	'feathers; fur'
			p_səʔ-állə	'is to be plucked'
CəC	b-l-**ɛ́**ɾək^h	'flattened'	bəɾk-állə	'is to be flattened'
	b-l-**ú**s	'pulled'	bəsəŋ-állə	'is to be pulled'

Reduplicant matches other reduced forms of the stem.

→ Reduplicants inherit stems' unpredictable behavior w.r.t. deletion vs. reduction.

(26) CCə *in bases with deleted vowels*
In stems that begin with *underlying* CC, the reduplicant is always *Cɛ* or *Ci*:

ptáɾ, pterŋ-él 'swing' om-**bi**-ptáɾ 'keep swinging'

When it's not, the base has always had a vowel deleted:

/RED+b**u**suʔ+əl/ psə-p_súʔ-əl 'furry; hairy'
(expect *bɛ-* or *bi-*)

4.2 Reduction to unexpected vowel

(27) Reduplicant looks like other unstressed allomorphs

stressed		*unstressed*		*reduplicated*	
ɾ**á**e̯l	‘road’	ɾ**o**l-él	‘its road’		
mə-ɾ**á**e̯l	‘travel’	ɾ-iɾ-**o**l-íj (expect [ɛ])	‘traveled it’	mə-ɾ**o**-ɾ**á**e̯l	‘stroll’
mə-l**é**w	‘bend’	d-il-**ú**ɾ (expect [ɛ])	‘bend (perf.)’	mə-l**u**-d**é**w	‘bend in many places’

→ Reduplicants inherit stems’ exceptional reduction properties.

4.3 Unstressed base vowel

(28) Unstressed base vowel

If reduplicant is in correspondence with the base, it should be reduced with respect to the base

Instead it can be the same…

	unreduplicated		*reduplicated*	
/sau(a?)/	so-kól	‘has come to like’	s**o**-s**o**kól	‘has come to like somewhat’
cf. sáw-**,** soá-l ‘liking’			(expect *sək-*)	

…or even less reduced:

	unreduplicated		*reduplicated*	
/ɾ**ú**təʔ/	mə-ɾ**ú**təʔə	‘try out’	ɾ**u**tə-ɾ_təʔ-íj	‘inefficient’
			(expect *ɾɛ-* or *ɾi-*)	

→ Reduplicant is reduced with respect to the underlying form, not with respect to the base.

4.4 Nasal substitution

(29) Nasal substitution

In various related languages,

maN- { t…. / d… / s… } → ma-n…

(and similarly at other places of articulation)

In Palauan, **n* became *l*, so:

məN- { t…. / d… / s… } → mə-l…

tábək^{h}	‘patch’	me-**l**ábək^{h}	‘to patch’
ðáləm	‘sapling’	me-**l**áləm	‘to plant’
skóɾs	‘cane’	me-**l**kóɾs	‘walk with a cane’

(30) Nasal substitution in reduplication

Usually only reduplicant changes (no Tagalog-style overapplication):

/**d**obs/

mə-**l**óps ‘be negative about’ mə-**l**əb-**d**óps ‘keep being negative about’

But in a couple of cases, only the base changes:

/**s**aul/

mə-**s**áwl ‘tired’ mə-**s**u-**l**áwl ‘sleepy’

Because nasal substitution is neutralizing, the reduplicant has to know what the underlying C was.

(31) Section summary

The reduplicant looks like *other unstressed allomorphs* of a stem, not like a reduced version of the base.

5. Conclusions

(32) Significance

This is a different kind of 'faithful reduplicant": the reduplicant is being faithful not to segments or features, but to exceptionality.

How can it be captured?

(33) Correspondence

I-R correspondence: works only if constraints are sensitive to exceptionality:

	/ðaɛs/	CORR
☞*a*	ðɛ-ðaɛs	
b	ðo-ðaɛs	*!

	/ɾaɛl/ (exceptional)	CORR
c	ɾɛ-ɾaɛl	*!
☞*d*	ɾo-ɾaɛl	

(There are probably various ways to do this, e.g. listing allomorphs.)

Broad correspondence: similarly, correspondence constraints must want to see the exceptionally-reduced allomorph appear somewhere in the word, instead of being content with the unreduced allomorph in the base.

(34) Anything special about this Palauan reduplicant?

See appendix: may be low-productivity (not inflectional), may be stem-internal.

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Appendix: anything special about this reduplicant?

(35) Productivity

- Found only two reduplicated loans:
  bánd ‘bounce’ bədə-bánd ‘bouncy’ (English: *bound*)
  bulîs ‘police’ bɛ-bulîs ‘half-witted’ (English: *police*)

(36) Predictability

- Whether a word takes *Cɛ-*, *CV(C)-*, or *Cɛ-CVC-* is not always predictable.
- Moderative vs. repetitive meaning not always predictable.
- Some meanings are entirely unpredictable, though connection is obvious:
  mə-táŋ ‘forked’ təŋə-táŋ ‘starfish’

(37) Stem-internal

Finer (1986) analyzes *CV(C)*- (unlike *Cɛ*-) reduplicant as part of the stem

- Infixes appear inside bare stem or *CV(C)*-, but not *Cɛ*-:

  bl̰íj ‘sort’

  bl̰i-bîj ‘sorted’

vs. ŋl̰əmúllə ‘cut’

  ŋɛ-ŋl̰əmúllə ‘not well cut’

- Nasal substitution applies to bare stem or *CV(C)*-, but not *Cɛ*-:

  bálə ‘slingshot’

  o-**m**álə ‘shoot with slingshot’

  o-**m**ələ-bálə ‘play around with slingshot’

vs. bájl ‘clothing’

  o-**m**ájl ‘clothe’

  o**m**-**b**ɛ-bi-bájl ‘clothe’

Is inheritance of exceptionality related to stem-internalness?