

Workshop on phonology of Australian languages  
Latrobe University, 3<sup>rd</sup> December 2007  
Butcher, Birch, Evans & Fletcher:  
Stopped laterals(?) in Iwaidja - handout supplement

## Iwaidja flapped laterals: phonological patterning

### 1. Synchrony

#### 1.1 Frequency: hi-frequency /lʰ/ vs. low-frequency /l̥/

/lʰ/ is a high-frequency phoneme: begins 23.5% of bound roots, and 1.3% of free roots

Word-initially it is the commonest lateral phoneme in Iwaidja.

Words beginning with the plain alveolar later /l/ are almost all loans, mostly from Makassarese or Malay (e.g. lama ‘shovel-nosed spear’ < Malay *lamang* ‘a short sabre’, *lanjirrang* /lanciranj/ ‘lantern’ < Makassarese *lantéra* < Portuguese *lanterna*) – see Evans 1992 for further examples.

In Mawng the /lʰ/ phoneme has been merged with /l/ in favour of the latter:

Iw *lʰalku* ‘cut’; Mawng *lalku*.<sup>1</sup>

/l̥/ is much lower-frequency, but still found in around 40 roots, always medially and nearly always root-internally. The only non-root-internal occurrence results from contact between the phonemes /l/ and /lʰ/ in a couple of old N+ V compounds whose first element is /lʰauʎa/ ‘foot’:

/l/ + /lʰ/ > /l̥/

e.g. /lʰauʎa/ [l̥alku/ ‘cut on foot’ < lʰauʎa/ ‘foot’ + lʰalku ‘cut’

/lʰauʎa/ [l̥u]ku/ ‘get one’s foot stuck’ < lʰauʎa/ ‘foot’ + lʰu]ku ‘be tight, stuck’<sup>2</sup>

#### 1.2 Phonotactics

Six relevant phonotactic positions:

Non-clustered positions: C<sub>i</sub>VC<sub>m</sub>VC<sub>f</sub>

Initial; medial; final

Subtype: C<sub>i</sub>V-C<sub>v</sub><sub>m</sub>VC<sub>f</sub> (word-medial, root-initial)

Initial; root-initial medial; final

Clustered positions: C<sub>i</sub>V-C<sub>c</sub>C<sub>ci</sub>VC<sub>f</sub>

Initial; word-internal coda<sup>3</sup>; word-internal initial; final

<sup>1</sup> Evans (1997) proposed the opposite directionality, i.e. that original /l/ developed to /lʰ/ through ‘lateral flapping’ (with the Mawng forms then being original rather than the result of de-flapping). Our increased understanding of the Iwaidjan languages since then suggests this proposal was incorrect.

<sup>2</sup> Teo 2007:25

## General distribution

	C <sub>i</sub> word-initial	C <sub>m</sub> word-medial intervocalic	C <sub>√m</sub> word-medial intervocalic, root- initial	C <sub>c</sub> word-internal, coda in cluster	C <sub>ci</sub> word-internal, syllable initial in cluster
stops	+	+	-	+ (except p)	+
l <sup>r</sup>	+	+	+	-	-
l <sup>ɹ</sup>	-	+	-	-	-
nasals	+	+	+	+	(+) <sup>4</sup>
glides w, y	+	+	+	-	(+)
glide uɹ	(-) <sup>5</sup>	+	(-) <sup>6</sup>		
l, ɭ	+	+	-	+	+
r	(-) <sup>7</sup>	+	-	+	
ɹ	+	+	-	+	-
ɻ	+	+	-	-	-

Examples illustrating phonotactic possibilities:

	C <sub>i</sub> word-initial	C <sub>m</sub> word-medial intervocalic	C <sub>√m</sub> word-medial intervocalic, root- initial	C <sub>c</sub> word-internal, coda in cluster	C <sub>ci</sub> word-internal, syllable initial in cluster
l <sup>r</sup>	l <sup>r</sup> aluɹa 'sea'	mal <sup>r</sup> ar 'leaf'	ŋal <sup>r</sup> alkun 'I cut myself, get cut'	-	-
l <sup>ɹ</sup>	-	yaɻi 'scorpion'	-	-	-

### ***Distributional parallels of /l<sup>r</sup>/ to /ɻ/ in other Arnhem Land languages:***

Note that the distribution of /l<sup>r</sup>/ is rather similar to the distribution of lamino-dentals in languages like Djapu, Ngandi and Nunggubuyu, in its inability to occur in syllable- or word-final position:

Djapu (Morphy 1983: 24):

laminodental stops are not a permissible first element of a cluster

<sup>3</sup> In principle we need to distinguish 2 codal positions to deal with clusters like rŋ.k, but we do not bother here, since (a) flapped laterals don't occur in ANY word-initial codal position anyway, and (b) any segment occurring in either codal position as part of a cluster can occur in a single-consonant coda anyway

<sup>4</sup> Subject to typical Australian restrictions on the cluster composition: basically non-increasing sonority through the cluster, and Hamilton effects in terms of place succession.

<sup>5</sup> One example in Garig dialect only: uɹamuɹ 'sandhill'

<sup>6</sup> One example in Ilgar and Garig dialects only: yi-uɹaɻu 'nothing'

<sup>7</sup> Except in a few Makassan loans, like *rupiya* 'money'

Nunggubuyu (Heath 1984:19):

‘interdental /dh nh lh/ do not occur finally (this is part of a more general restriction limiting these consonants to syllable-initial position)’

Ngandi (Heath 1978:11):

lists of clusters whose first element is a stop do not include interdentals

However, the parallel is not exact, since all these languages permit interdentals in  $C_{ci}$  position. This is not possible at surface level in Iwaidja, though underlyingly it is present in a broad set of clusters comparable to those involving as their second element in eastern Arnhem languages; the morphophonemics suggests that clusters which involved this ancestral segment as their final element were simplified in a number of ways, including place assimilation after nasals (leaving a stop, mostly homorganic)

## 2. Morphophonemics

Iwaidja has a complex series of morphophonemic alternations, resulting from **intervocalic lenition** (§3.1), leaving lenited forms (typically semi-vowels) in intervocalic position, corresponding to unlenited forms (typically stops) in ‘protected’ positions, e.g. after nasals or other consonantal segments:

ŋa-wauɥa]	‘my head’ vs.
iŋpaɥa]	‘her head’ (Ilgar)
aŋpaɥa]	‘your head’
kutpaɥa]	‘your heads’

As this example illustrates, these alternations usually preserve the place of articulation.

Alternations involving /lʳ/, however, exhibit almost complete assimilation of place to the preceding element:

ŋalʳalal	‘my stomach’	<%ŋa+lʳalal%
iŋcalal	‘her stomach’ (Ilgar)	<%iŋ+lʳalal%
ankalal	‘your stomach’	<%aŋŋ+lʳalal%
kalʳaŋan	‘she sends him/her’	<%ka+lʳaŋan%
kuntaŋan	‘you send me’	<%kun+lʳaŋan%

The only time the place of the resultant stop is NOT parasitic upon the place of the preceding segment<sup>8</sup> is after prefixes ending in Vŋ<sup>9</sup>:

anticpun	'I collect water'	< %aŋ+l <sup>r</sup> icpun%
kunticpun	'you collect water'	< %kun+l <sup>r</sup> icpun%

In other words, in its morphophonemic behaviour /l<sup>r</sup>/

- parallels the historical stop series in changing to a stop after other consonantal segments<sup>10</sup>
- differs from the historical stop series in assimilating in place to the preceding segment
- the only environment in which it has a non-parasitic place is after ŋ, when it appears as the apico-alveolar stop /t/

### 3. Diachronic notes

**3.1 The great Iwaidjan consonant shift** (possibly several changes) was a chain shift producing (simplifying somewhat) the following changes intervocalically. Note

- loss of long vs. short series
- lenition of short stops; possible that  $\underset{\sim}{l}$  was an intermediate stage between \* $\underset{\sim}{t}$  and l<sup>r</sup>, which would give an overall sequence  $\underset{\sim}{t} > \underset{\sim}{l} > l^r (> l \text{ in Mawng})$

*Long stop	pː	(t)	tː	t̥ː	eː	kː
Short stop	p	* $\underset{\sim}{t}$	t	t̥	c	k
Approximant / liquid	w	@l <sup>r</sup> (> l in M)	r / ø	@ɹ (> ɹ in M)	y	ɥ (> y / i_i, w, u_u)
Zero	ø				ø	

@ = new phoneme

e = whole series lost

\* = individual reconstructed phoneme, no longer present synchronically

<sup>8</sup> There is also a set of alternations to ɹ, found after the mysterious 3sg prefix (a)K- which produces a series of initial mutations in Iwaidja, and which corresponds to the Mawng miscellaneous gender prefix (see Evans 1998). (The initial a- only appears in combination with monosyllabic roots, e.g. apin < aK-min 'he/she says/does; elsewhere the prefix is only detectable from its morphophonemic effects. After this prefix, /l<sup>r</sup>/ becomes /ɹ/, e.g. ɹalal 'his/her stomach'. While it's pretty clear that K descends from some type of stop, its original place is unclear, and we cannot eliminate the possibility that it was a retroflex stop. This would account for this particular alternation, though it is not unproblematic since before the vowel a it is realised as w in both Iwaidja and Mawng. At present we are unable to account in a completely satisfactory way for the l<sup>r</sup> / ɹ alternation.

<sup>9</sup> Note that this statement applies specifically to prefixes whose codas only contain ŋ, and not to the 2sg prefix which we analyse as anŋ-, in which case the resultant stop does indeed assimilate in place to the ŋ. (The codal cluster nŋ is hard to hear at the best of times, and often simplifies to either an- or aŋ-; previous published analyses of Iwaidja and Mawng, by Pym & Larrimore (1976) and Capell & Hinch (1970), do not note this cluster).

<sup>10</sup> Except after r and d within some old compounds, where a r results.

### 3.2 Sample etyma where /t̪/ > /l̪/

#### Correspondences with t̪:

-l̪atpiuɪ ‘leg’, cf pG \*-t̪ar ‘thigh, leg’ (Harvey 2003)

-l̪akparki ‘poke hole in ground’, Dangbon taɲ-no ([t̪aɲno] in conservative pronunciations) ‘mouth’; Kayardild parki- ‘chop’

-l̪iɲan ‘stand’

(note esp. the NPst forms taɲen in BGW, taɲan in Rembarrnga, the past imperfective form tiɲaniɲ in R and caɲani in Ngalakgan, and the past perfective forms Jawoyn caɲiɲ, BGW taɲiny, D taɲiɲ, Ngandi t̪iɲiɲ, and Nunggubuyu ɭaɲaɲ)

-l̪uwuntuwunma ‘talk about’; pG t̪u- ‘tell off’ (Jawoyn cu- ‘do, say’, BGW, Dal tu-, Ngan -t̪i, proto-Maningrida non-past2 *co-n* ); Kayardild t̪u: ‘swear at’

#### Correspondences with c:

-l̪a ‘eat, consume’ corresponds to initial c rather than th in Arnhem Land languages, e.g. Nakara ca-, Gaagudju ca-, Kung ca-/co-, Kunparlang ca-

- l̪alkpa- ‘take a short cut’; BGW calkma- ‘go through, cut through’

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**Appendix:** underlying clusters including /lʳ/ in position, and their surface realisations as a result of internal sandhi<sup>11</sup>

After stops:

t+lʳ > r                      tʰ+lʳ > tʰ                      c+lʳ > t                      k+lʳ > k

After nasals:

n+lʳ > nt                      ŋ+lʳ > ŋt                      ɲ+lʳ > ɲc                      ŋ+lʳ > ŋt                      nŋ+lʳ > nk

After liquids:

l+lʳ > lt                      ʎ+lʳ > ʎt                      r+lʳ > r                      rk+lʳ > rk

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<sup>11</sup> For examples see Teo (2007:22-26)