Language Change at the Three Way Border.

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1.0 Abstract

Languages undergo change through pressure brought about by linguistic and non-linguistic events. As an example, non-linguistic factors may include invasion; world war or the COVID 19 pandemic. These kinds of forces tend to be catastrophic in nature and the effects upon language, culture and language users brought about by these events will happen more quickly than change brought about via linguistic events. In instances of invasion and colonisation, effects such as language shift and phonological and grammatical change by pressure from a dominant language group are ongoing, in fact they are so completely devastating the fall out will continue to be seen for generations following the initial event.
Conversely, change caused by linguistic factors occurs over time and filters through speaker groups slowly (Dixon, 2011).

Language in the remote aboriginal community of Irrunytju, at the Three-Way Border in Western Australia is undergoing change. Younger generations of Pitjantjatjarra speakers are using innovation and linguistic creativity to make their language use markedly different to that of older generations. The language has been subjected intense pressure from dominant Standard Australian English (SAE) for generations, but this is unlikely to be the cause of changes being seen in Irrunytju. Rather, it is argued these changes are predictable considering the conditions in which they are occurring. Especially since similar changes are occurring in other Pitjantjatjarra-speaking communities in South Australia and the Northern Territory (Langlois, 2004; Wilmoth, 2022).

2.0 Introduction

Deep in the West Australian outback, a mere 12 kilometres from the border with the Northern Territory and South Australia, sits the remote community of Irrunytju, home to a group of first language (L1) speakers of Ngaanyatjarra and Pitjantjatjarra. Ngaanyatjarra is a West Australian language, whereas Pitjantjatjarra was originally located in communities in South Australia but has since migrated to the west and north over time (Tabain & Butcher, 2014). Ngaanyatjarra and Pitjantjatjarra are classified as living languages. That children are being taught language as a mother tongue affords Pitjantjatjarra and Ngaanyatjarra a level of stability not enjoyed by languages situated in more built-up areas of the continent. Part of the NPY Lands, sitting under the governance of the shire of Ngaanyatjarra, this community is within the Ngaanyatjarra-speaking lands, but is also home to L1 Pitjantjatjarra speakers. This puts the two groups in a language contact situation. Both are of course, in contact with SAE, which is used by *Arnangu* in this community in the form of Australian Aboriginal English (AAE). Ngaanyatjarra and Pitjantjatjarra belong to the Western Desert language family (Wati). Being that the two codes are contiguous, they share similarities in phonology and syntax, but have different phonotactic rules, pronominal morphology and mark nominals and verbs differently to each other (Wilmoth, 2022; Tabain & Butcher, 2014). Most notably, there is little evidence of convergence, despite their prolonged contact. This is because cultural

identity is performed through membership to one language group or the other, therefore maintaining language is important. A person may be from Irrunytju, but culturally-speaking are either Pitjantjatjarra or Ngaanyatjarra. That is not to say that members of the community do not understand each other, of course they do. Arnangu in this community are multilingual, even if they choose to keep their knowledge of Pitjantjatjarra (or Ngaanyatjarra) at a receptive, rather than productive level.

It should be noted that according to culture, if a Ngaanyatjarra speaking woman moves to Irrunytju after marriage to a Pitjantjatjarra-speaking man, her children will be brought up speaking the language of the community as an L1 (Gorring, 2024). This means Pitjantjatjarra is more commonly-spoken than Ngaanyatjarra, and most remaining Ngaanyatjarra speakers belong to the older generations.

3.0 Methodology

The present paper is a synchronic study of Pitjantjatjarra, specifically as it is used in Irrunytju. It will present the findings of a long-term research project carried out by the Goldfields Aboriginal Language Centre (GALC) looking to discover how the language is used in this community, the ways in which it is changing through prolonged contact with Ngaanyatjarra and the ongoing effects of SAE on the code. As such, it should be assumed that all examples discussed are in reference to Pitjantjatjarra unless stated otherwise.

Working closely with L1 speakers of Pitjantjatjarra, GALC linguists found differences in phonological and morphological aspects of the dialect used by female speakers from two different generations; the *kami tjurta* (older women or grandmothers) and the *minyma tjurta* (mothers in the next generation down). It is suspected that these changes are continued and become more exaggerated in younger generations, however the scope of this research does not extend to teens and children. As such this hypothesis will not be speculated on further.

All data presented in this paper is first generation data, provided by L1 speakers, living in the community. For the purpose of this paper Irrunytju Pitjantjatjarra (IP) will be used to refer to the dialect used at Irrunytju. Readers will note a West Australian orthography will be used throughout the document, where the retroflex is written as [rl], [rn] and [rt] and the trill or tap as /rr/, which is different to the liquid or retroflex rhotic /r/. This differs to a South Australian orthography, where [l̲], [n̲], [t̲], /r/ and /r̲/ are used. Further, the alveolar stop, velar stop and bilabial stop are written as /t/, /k/ and /p/.

4.0 Phonological Changes

It is understood that in contact situations, the lexicon of a language is the first linguistic area to experience change (Harris, 1985). This change takes place to accommodate for new concepts, things that are introduced as a result of that contact with different cultures and language groups. When speakers of Australian languages first came into contact with SAE they quickly borrowed new words into their lexicons in order to label the things, ideas and concepts they were exposed to under colonisation. In order to do this however, these new words first had to be manipulated into forms that followed first the phonological, then morphological rules of their own languages (Gorring & Hanson, 2022).

Across the Ngaanyatjarra Lands (NG Lands) Irrunytju community members are known for their unique register. The most strikingly obvious difference in IP is the devoicing of stops in certain positions. This preference for voiceless over voiced varieties, combined with a higher pitch, is part of what makes the register at Irrunytju distinctive. Where other communities further south of Irrunytju use voiced varieties, language use at Irrunytju is characterised by these two phonological variations (Gorring, 2023). It is difficult to pinpoint the exact causes behind the devoicing; however, it has been suggested the influence of SAE, particularly language instruction in mission schools, is the causative factor (Tabain & Butcher, 2014; Reid, 2014) Readers looking for information on this area of IP phonology will find detailed analysis and discussion in Gorring 2026, forthcoming.

In 2019, Minutjukur, Tjitayi, Tjitayi, & Defina reported that younger generations of Pitjantjatjarra speakers in Pukatja were making phonological changes to their language that resulted in shorter lexemes. Wilmoth (2022) working with speakers in the same community reported the same; phonological and morphological changes in language use by younger generations of speakers has resulted in shorter lexemes.
Across the border in Irrunytju, a similar change is taking place. Phonological and morphological changes to the language are resulting in shorter words. These changes include loss of the coda in distinct examples and elision of whole syllables in a pattern that appears to be regular and predictable. Data collected by GALC has also provided one single example of a lexeme becoming longer through anaptyxis.

Table 1: Phonological Variation and Change

Word Medial Syllable Elision	Syllable Creation /anaptyxis	Vowel Change	Stop/ Rhotic Variation
nyirta(yi)rra *boy*	purl(a)kanya *big, or large*	paya-/ payi- *pay, to*	kutu/ kuru *ALL*
wala-(wa)la *quickly*			
kungka(wa)ra *teenage girl*			
tara(wa)tja *trousers*			

4.1 Phonological Variation

Speakers at Irrunytju were found to be eliding syllables word-medially and finally. This section will discuss rules on syllabic construction, weight and sonority before presenting and analysing data on word-medial elision. Findings on word-final syllabic elision are discussed in the next section.

4.1.2 Syllable Construction, Weight and Classification

Pitjantjantjarra is a left-aligned, suffixing language (Wilmoth, 2022). The most common syllable patterns are shown below:

1.0 Consonant Vowel Consonant (**CVC**) **taan**/tja, *split*
2.0 **CV** **ngu**/rra, *home*

Less common, but still permitted is the word-initial only VC

3.0 **VC** **urn**/tal/pa, *daughter*

The V syllable is rarer than the VC syllable, but still permitted.

4.0 V **a**/ka/tja/rri, *visit*

Where parentheses represent an optional element and forward slashes a syllabic break, a rule for syllable construction in Pitjantjatjarra could be written as follows:

(C)V(:)(C)/CV(C)

There is no rule stating the maximum number of syllables permitted in a word in Pitjantjatjarra (P. Eckert, personal communication, June 20, 2025). The longest example currently held in the GALC database is a lexeme with 8 syllables.

As seen in examples 1 and 2, any syllable (aside from first syllable in vowel-initial lexemes) must start with a C. Therefore in medial positions, a V final syllable will be followed by a C. A C-final syllable will also be followed by a C. Two contiguous consonants represent a consonant cluster (CC) and a syllable break.

An open syllable is comprised of an onset and a nucleus (CV), or simply a nucleus (V). A closed syllable has a coda as well as the obligatory nucleus. It may also have an onset consonant and follows a (C)VC pattern (Hayes, 2009).

5.0 Open (**CV**) **ngu**/rra, *home*
6.0 Closed (**CVC**) **kung**/ka, *girl*

Different languages have different ways of labelling syllable types based on their moraic length and phonemic composition (Odden, 2005). In Pitjantjatjarra a short syllable ends in a short vowel and a long syllable has a long vowel.

7.0 **Short** **ngu**/rra, *home* (2 mora)
8.0 **Long** **taan**/tja, *split* (3 mora)
9.0 **Long** **maa**/pitja, *leave*, *or go* (4 mora)

This means a short syllable has a single mora, and a long syllable is bimoraic (Goddard, 1985, Langlois, 2004). Codas are not assigned a moraic weight (Goddard, 1985; Wilmoth, 2022). This is why the examples shown at 8 and 9 are of the same weight.
In Pitjantjatjarra a metrical foot is bimoraic (Wilmoth, 2022). A mora (μ) is a unit of sound that determines the syllable weight. It plays an important role in distinguishing between long and short syllables and helps to explain why some syllables carry more weight than others (Hayes, 1989, Hayes, 2009, Odden, 2005).
Long syllables attract stress. They may be considered the point of stress in a lot of lexemes (Hayes, 2009).

The sonoric quality of phones affect the weight of a syllable and by consequence its moraic weight. This information is displayed in Table 2, Scale of Sonority.

Table 2: Scale of Sonority

Most Sonorous				**Least Sonorous**
Vowels	Glides (transitional)	Liquids (apico-alveolar)	Nasals	Obstruents (fricatives, affricates, stops)
[a], [u], [i]	[y] [w]	[r], [l], [ly]	[ng], [ny], [m], [n], [rn]	[p], [t], [k], [tj], [rt], [rr]
Least Consonantal				**Most Consonantal**

Sonority is the extent to which the vocal tract is constricted during the production of speech sounds (Odden, 2005). Vowels are phones made without any obstruction to the vocal apparatus. They sit at the top end of the Scale of Sonority (Table 2). They are +sonorous. Consonants such as stops feature the most amount of obstruction or constriction within the mouth and so are least sonorous of the phonemes, they are -sonorous (Hayes, 2009). A highly sonorous phoneme requires less effort to produce than one with little, or no sonority. These phones are among the first to be lost during phonological change (Dixon, 2002; Hayes, 2009).

Examples of phonological variation at Irrunytju are moraic. That is, the types of variation that are being seen involve the loss of syllables or changes to their composition, which in turn affect the moraic quality of the lexeme. These will be discussed in more detail in the following section.

4.2 Word Medial Syllable Elision

Data provided by speakers at Irrunytju shows phonological variation in lexemes as they are used by two different generations of female speakers. The older group, the *kami tjurta* (grandmothers) use the full-length lexemes of traditional Pitjantjatjarra (TP). Whereas the *minyma tjurta* (mothers) are using a contemporary version of Pitjantjatjarra (CP). This contemporary version features lexemes that are made shorter by dropping syllables word-medially. Of course, there are examples of the *kami tjurta* using shorter lexemes, and of the *minyma tjurta* using longer variations, but each are exceptions to the rule.

Syllabic elision, when it occurs word-medially is representative of phonological change. Syllabic elision in word final position, of the sort that occurs during rapid, natural speech is within the domain of morphological change (Dixon, 2002; Goddard, 1985). As such it will be discussed in Section 5.0 Morphological Change.

10.0 Traditional example
nyirta**yi**rra, *boy*
nyi/rta/**yi**/rra
CV/CV/**CV**/CV
2 feet; 4 μ

11.0 Contemporary example
nyirta(**yi**)rra, *boy*

nyi/rta/rra
CV/CV/CV
1.5 feet; 3 μ

In Example 10, the TP lexeme has four short syllables. At Example 11 the same lexeme in CP is one syllable (and one mora) shorter. The unstressed (penultimate) syllable /yi/ has been dropped by a younger cohort of language users. The parenthesis in the first line of Example 10 represent a segment that should be there, but is in the process of change. Example 11 is a variation on the TP lexeme that has been captured in the data multiple times, by different speakers. This suggests it is not an error or part of the idiolect of a single speaker.
The elided syllable in Example 11 is an unstressed, glide-initial syllable. It is a short syllable and its composition of glide+front vowel places it at the higher end of the Scale of Sonority. As established in 4.1.2, these types of syllables (or phones) are more likely to be lost during language change. Every syllable in the lexeme at Example 10 is a light syllable, but the penultimate /yi/ is also the most sonorous. It will be shown that this type of syllable is being consistently dropped by speakers, especially when it is unstressed.

Audio data provided by the *minyma tjurta* includes several examples of phonological variation in the form of syllable elision. A pattern quickly emerged upon analysis: short, unstressed (penultimate) syllables, of high sonority were being elided from nominals by the younger group. The elision impacts the mora count in the affected lexemes.
Examples of syllable loss in verbs will be discussed in Section 5.2 because they pertain to tense suffixes and have an effect on the morphology of the verb.

As shown in Table 2, phonemes that are the most sonorous are vowels, followed by the semi vowels, then laterals. In Section 4.1.2, it was established that Pitjantjatjarra phonotactic rules mean a vowel-initial syllable is only permissible at the beginning of a word. All syllables within the lexeme itself must begin with a C. It is argued that short syllables with highly sonorous onset consonants are the most likely to be lost during language change or periods of variation leading to language change. This is especially so if they are in an unstressed position in the lexeme. Examples shown below agree with this argument.

12.0 Traditional Example
tara**wa**tja, *trousers*
ta/ra/**wa**/tja
CV/CV/**CV**/CV
2 feet; 4 μ

13.0 Contemporary Example
tara(**wa**)tja, *trousers*
ta/ra/tja
CV/CV/CV
1.5 feet; 3 μ

14.0 Traditional Example
kungka**wa**ra, *teenage girl*
kung/ka/**wa**/ra
CVC/CV/**CV**/CV
2 feet; 4 μ

15.0 Contemporary Example
kungka(**wa**)ra, *girl*
kung/ka/ra
CVC/CV/CV
1.5 feet; 3 μ

16.0 Traditional Example
wala-**wa**la, *quickly*
wa/la/**wa**/la
CV/CV – **CV**/CV
2 feet; 4 μ

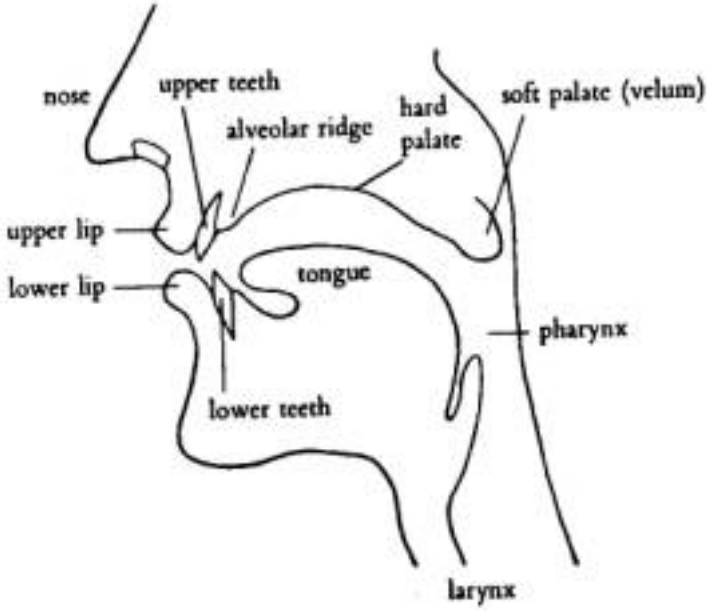
17.0 Contemporary Example
wala-(**wa**)la
wa/la/la
CV/CV/CV
1.5 feet;3 μ

The variations presented at 12-17 show an obvious pattern. In examples 13, 15 and 17 the *minyma tjurta* are shortening lexemes by dropping the unstressed prefinal syllable. This elided syllable is consistently a semi vowel or lateral-initial short syllable.
Example 17 is the odd one out and worth discussing here because it is a reduplication (REDUP). In Pitjantjatjarra, stress falls on the initial syllable of a word, the initial syllable of a disyllabic suffix and the initial syllable of the reduplicated segment of a REDUP (Goddard, 1985). This means that Example 17 *minyma tjurta* speakers are not eliding an unstressed syllable, but one that should be stressed, according to existing stress rules.
However, it would seem in this case, the stress rule described by Goddard (1985) has been over-ridden by an emerging syllabic-elision rule.

Table 3: Irrunytju Pitjantjatjarra Consonant Chart

		Non-peripheral					
		Apical		Lamino		Peripheral	
		Alveolar	Retroflex	Dental	Palatal	Velar	Bilabial
Stops		t	rt	tj		k	p
Nasals		n	rn	ny		ng	m
Laterals		l	rl	ly			
Rhotics		rr	r				
Semi vowels	Glides			y			
	Approximants						w

Figure 1: The Vocal Tract
(http://www.personal.rdg.ac.uk/~llsroach/phon2/artic-basics.htm)



It should be considered that elision in these examples is more a matter of performing less movement in the mouth, than purposefully shortening a word for the sake of economy, or both. In a 'natural' speech setting, speakers produce language at a much faster, unchecked rate than they do in formal speech environments (Goddard, 1985; Montero et al., 2023). This kind of unedited speech production lends itself to elision and variation. It was established in Section 4.1.2 that some phonemes are more likely to be dropped than others (Hayes, 2009). Analysis of the place of articulation of the phones in Examples 10, 12, 14 and 16 will show why economy of movement is a factor.
In each of the four examples above, the open-back vowel is the nucleus of the syllable immediately prior to the elided syllable (making it the new penultimate syllable). Positioning of the mouth following the production of this vowel is open. This means the vocal apparatus is ready to move into any position, but it will be especially easy for it to slide into a homorganic sound. See below.

> 18.0 nyi**rta**(yi)**rra;** the retroflex stop and alveolar rhotic are both apical consonants
> 19.0 ta**ra**(wa)**tja;** retroflex rhotic and lamino-dental stop are both non-peripheral consonants
> 20.0 wa**la**-(wa)**la;** alveolar lateral and alveolar lateral, two identical sounds

Examples 18-20 demonstrate economy of movement via contiguous homorganic consonants. Example 21 is the only example that does not comply with this theory.

> 21.0 kung**ka**(wa)**ra;** velar stop and retroflex rhotic.

The highly sonorous nature of the elided syllables being equal to less effort on the part of the vocal apparatus, combined with the phonemic environment of each (as described above) means these syllables are in an optimal environment for loss (Hayes, 2009). Thus, lexemes are becoming shorter due to cross linguistic phonological rules, and not necessarily due to contact with SAE (Hayes, 2009; Kager, 2007; Odden, 2005; Minutjukur, Tjitayi, Tjitayi & Defina, 2019).

This pattern of unstressed syllable loss is also demonstrated in complex verbal suffixes, where elision has the effect of simplifying a complex suffix.
Details of suffixal variation are presented below in Section 5.2.

4.3 Word Medial Syllable Creation

The data presented in this paper is concerned with analysing phonological and morphological change in IP that is resulting in shorter lexemes. However, linguists collected one single example of syllable creation. It will be analysed in this section.

22.0 Traditional Example
purlkanya, *so much, EMP*
purl/ka/nya
CVC/CV/CV
1.5 feet; 3 μ

23.0 Contemporary Example
purl**a**kanya, *so much EMP*
pu/rl**a**/ka/nya
CV/**CV**/CV/CV
2 feet; 4μ

By inserting a vowel directly into the CC at Example 22, the syllabic composition of the lexeme has changed. The new form has an extra syllable, resulting in an extra mora. Audio samples collected from three of the *minyma tjurta* have captured the variation shown at Example 23.
Where the traditional example is one CVC syllable and two CV syllables, the contemporary example is four CV syllables.
It is true that both CV and CVC syllables are permissible in IP, however the language prefers the CV variety. Appendices 1 and 2 show a random sample of 100 lexemes in Pitjantjatjarra that were analysed for syllable type and frequency. In 267 syllables type CV made up 82% while CVC accounted for only 11%. Using these figures, and the data analysed above, it will be argued that speakers of CP are shifting the syllabic structure of lexemes towards the preferred CV model. Further evidence of this CV shift will be presented below in Section 5.1.1.

4.4 Vowel Change in the Transitive Loan paya-

The la class verb root, paya-, borrowed from SAE *pay* has been phonologically adapted into Pitjantjatjarra with a final vowel. This adaptation is necessary because Traditional Pitjantjatjarra is a vowel-final language (Goddard &Defina, 2020; Eckert & Hudson, 2010).

By modifying the SAE lexeme in this way, speakers have made sure the new word fits into the phonotactic requirements of the target code (Gorring & Hanson, 2022).

24.0 Traditional Example
pay**a**-, *buy or pay*
pa/y**a**
CV/CV
1 foot; 2 μ

25.0 Contemporary Example
pay**i**-, *buy or pay*
pa/y**i**
CV/CV
1 foot; 2 μ

In switching from the back vowel to a close front vowel, the *minyma tjurta* are following IP vowel-final and lexeme-minimum bimoraic rules. On paper, this change does not appear to be very different. However, the separation of the two syllables is less pronounced in Example 25, because the combination of glide+close front vowel results in a weaker syllable than that of a glide+open back vowel. The open back vowel has more sonority than the close front vowel. Not all syllables are created equal; some phonological combinations attract more weight than others (Hayes, 2009). This is demonstrated in Examples 24 and 25.

26.0 Contemporary Example
payi**ma**lpayi, *always buying*
pa/yi/mal/pa/yi
CV/CV/CVC/CV/CV
3 feet; 6 μ

As demonstrated in Section 4.1.2, sonority will effect syllable weight (Kager, 2007). The open back vowel carries more syllabic weight than the close front vowel which means the second syllable at Example 24 is weighted heavier than the second syllable at 25. Above, in Example 26, the first and third syllables are homorganic. The glide in syllable 2 is a chance for the vocal apparatus to 'glide' into the next position.
Variations to the transitive loan are discussed in more detail in Section 5.2.3

Regarding the vowel-final rule of Traditional Pitjantjatjarra, Langlois (2006) has suggested morphological changes in Contemporary Pitjantjatjarra are shifting this rule, resulting in the occurrence of heretofore prohibited consonant clusters that cross the lexemic boundary. This is discussed in greater detail in Section 5.1.2.

4.5 Stop/Rhotic Variation

In her 2022 doctoral thesis, Wilmoth made note of a phonological change from rhotics to glides amongst younger speaker groups. Data provided to GALC by speakers in Irrunytju did not show a change from rhotic towards glides, but there were examples of a shift from the alveolar stop towards a retroflex rhotic.

27.0 Traditional Example
kilinik-**kutu**
clinic+**ALL**

To the clinic.

28.0 Contemporary Example
kilini-**kuru**
clinic+**ALL**
To the clinic.

Kilini-kuru was first noticed with a speaker from the *minyma tjurta* group and tested at a later date with another speaker from same group. This second speaker used the same -kuru over TP -kutu. Readers will note the contemporary example at 28 drops the word final velar stop in favour of the suffix-initial velar stop. Stress remains on the first syllable of a lexeme and secondary stress on the initial vowel of di-moraic and poly-moraic suffixes, and rarely at the end of a word, which is not stressed (Goddard, 1985; Kager, 2007). In Example 28 the speaker can be heard on tape dropping the final /k/ on clinic in favour of the word-initial /k/ on the case marker.
The same shift is seen again with a different speaker, again from the *minyma tjurta* group.

29.0 Traditional Example
youth centre-**kutu**
youth centre+ALL
To the youth centre

30.0 Contemporary Example
youth centre-**kuru**
youth centre+**ALL**
To the youth centre

At this stage, the only examples collected are with the use of the allative (ALL) marker -kutu/ -kuru.

4.6 Closing remarks: phonology

Phonological variation in the nominals class between the *kami tjurta* and *the minyma tjurta* has resulted in the creation of shorter lexemes in the speech of the younger group. Montero, Karjus, Smith and Blythe (2023) argue this type of change via economy is common in environments where there has been exposure to another more dominant language over a long period of time. This claim is at odds with the research, which shows the changes occurring in the speech of the younger group are common and predictable across languages. Occurring as the result of highly sonorous phonemes in unstressed syllables, with a surrounding environment that is host to homorganic phones (Kager, 2007; Hayes, 2009).
The types of phonological change presented in this section include: the loss of glide/approximate-initial short, sonorous, unstressed syllables; root-final vowel changes in the transitive loan; an apparent shift from an alveolar to rhotic initial ALL suffix, and one example of a lexeme becoming longer through anaptyxis. This last variation is particularly interesting in that it seems to suggest speaker shift away from the CVC syllabic model towards a more confirmed CV pattern. The latter pattern is already preferred within speaker groups, and this shift suggests that speakers are changing the phonology of some lexemes to accommodate this pattern even further.
Data examining syllabic variation leading to morphological change to the language is presented in Section 5.

5.0 Morphological Change

Data collected from the *minyma tjurta* group of speakers showed variation and change at a morphological level. Table 5 presents examples of variations present in three different word classes: nominal; pronominal and verbal.

Table 5: Aspects of Morphological Change and Variation

Word class	Aspect	Traditional	Contemporary
Nominal	Loss of coda	kurlunypa, *small*	kurlupa
		nyuntumpa, *yours*	nyuntupa
	Word final elision	nyinangi pala *sit+PAST CONT DEM*	nyinang(i) pala
	Simplification of nominal	tjarrtjarrpa, *shallows*	tjarrtja
	Case marker variation	tjarrtjarrta *shallows*+LOC	tjarrtjangka *shallows*+LOC
Verbal	Simplification of complex INTENT suffix	mantjintjikitka, *get*+INTENT	mantjikitja *get*+INTENT
	Syllable elision	ngalytjurrmananyi *argue*+PRES	ngalytjurrmanyi *argue*+PRES
		payamilala *buy*+VERB+IMP ringamilala *call*+VERB+IMP	payamila *buy*+VERB+ IMP ringamila *call*+VERB+IMP
	Changes to the la class TRANS -mila- and associated tense suffixes	-mila-	-ma- Or -mi-
Pronominal	Case marker variation	nyuntumpa, *yours* *you*+GEN	nyuntuku, *yours* *you*+GEN

5.1 Nominal Variations

Data provided by speakers showed morphological variation in the nominal word class in the following areas: loss of coda; elision of the word-final syllable or vowel and a simplification of CC in word-final position that in turn allow speakers to change the way they attach case markers and other suffixes. Each will be discussed in this section.

5.1.1 Loss of Coda

In Section 4.3 it was established that speakers of IP prefer CV to CVC syllables (See also Appendix 1 & 2).
Data examined in the previous section demonstrated that younger speakers prefer shorter lexemes, and they are making phonological changes to accommodate that preference. There was however, one single example of a lexeme being extended. It was concluded that this

change had occurred in order to allow for a shift towards a CV syllabic model in favour of CVC. Analysis of data presented Appendices 1 & 2 have shown a CV pattern is the preferred syllabic pattern at a rate of 82.4% > 11.99%. In this section, it will be shown that speakers are using morphological-level innovations that are resulting in a sustained shift to CV over CVC patterns.

31.0 Traditional Example
kurlu**ny**pa, *small or little*
ku/rlu**ny**/pa
CV/CV**C**/CV
1.5 feet; 3 μ

32.0 Contemporary Example
kurlu(**ny**)pa, small or little
kurlupa
CV/CV/CV
1.5 feet; 3 μ

33.0 Traditional Example
nyuntu(**m**)pa, *yours* (*2SG+GEN)*
nyun/tu**m**/pa
CVC/CV**C**/CV
1.5 feet; 3 μ

34.0 Contemporary Example
nyuntu(**m**)pa, *yours (2SG+GEN)*
nyun/tu/pa
CVC/CV/CV
1.5 feet; 3 μ

The contemporary examples at 32 and 34 show loss of the coda in the second syllable of each lexeme. Wilmoth (2022), discussing language change in Pukatja has labelled these variations as cluster simplifications. Example 31 has changed from two CV and one CVC to three CV syllables. Example 33 has two CVC and one CV syllable. In 34, one of those CVC syllables has changed to become a CV. In both 32 and 34 it is the prefinal, unstressed syllable undergoing simplification. It is therefore suggested the coda loss may be connected to changes in penultimate unstressed syllables as discussed in the previous section.

The prefinal syllable appears to be a point of variation in the language. The data at Appendices 1 and 3 shows that in a selection of 100 random lexemes, only ten have a CVC syllable in this position. Seven of which are the result of suffixation. That is to say the nominal form, or root form is not possessing of a CVC syllable, rather it is created when the lexeme is derived into another word class.

Returning to Examples 32 and 34, the number of syllables in the lexeme has remained the same, as has the moraic count. However, the loss of the coda has changed the syllable pattern will have an effect on the prosody of the word. The lexemes at Examples 32 and 34 show the younger group dropping the coda. This cluster simplification does not constitute the loss of a

syllable, so the lexeme is not becoming shorter in that respect, but it is changing the syllable pattern, and in turn the way the word is pronounced.
Pitjantjatjarra is a language with particular rules about prosody and timing (Wilmoth, 2022). Considering this, it would be expected that the loss of the coda will induce compensatory lengthening elsewhere in the lexeme (Gess, 2011). For Examples 32 and 34, the nucleus absorbs the space left by the coda, resulting in a long vowel. See Figure 2, below.

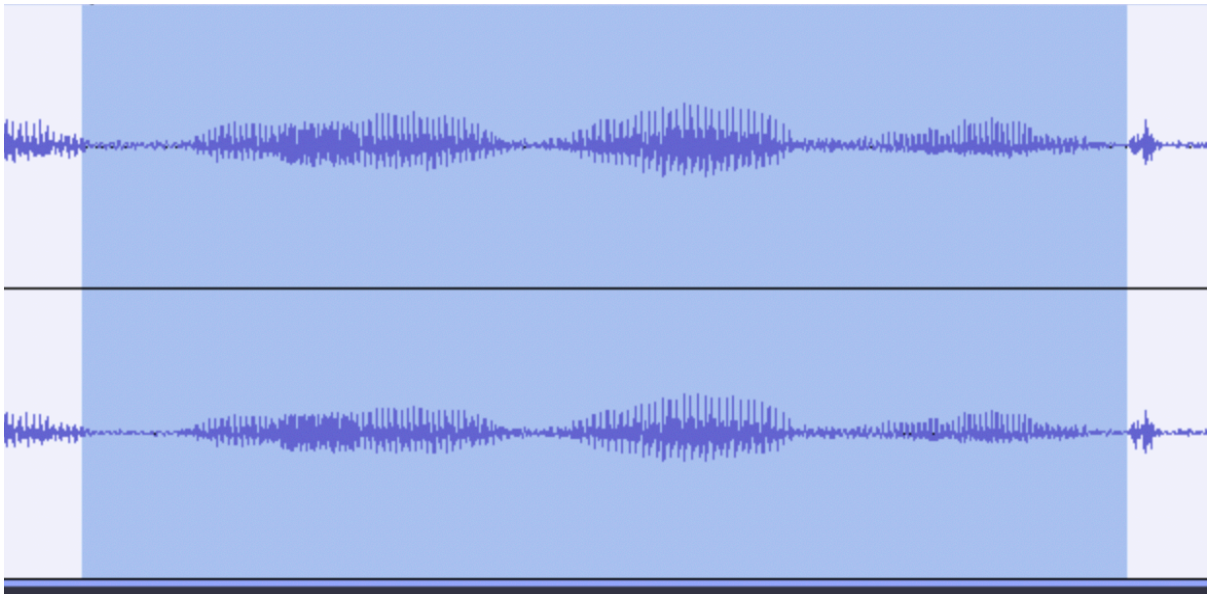


Figure 2: kurl**uu**pa

The syllabic make-up of the lexeme that has changed because there is no coda in the variant. The loss of the coda in Examples 32 and 34 have changed what were CVC syllables into CV syllables (Hayes, 2009; Kager, 2007). This begs the question, what happens to the space left behind by the lost coda ?
In these two cases, compensatory lengthening is performed by the nucleus of the penultimate syllable and not the onset of the final syllable because in both examples the onset is a bilabial stop. A stop cannot be lengthened. Compensatory lengthening of this kind is referred to as a 'flop' (Hayes, 1989). This means that kurlupa and nyuntupa have two long syllables in penultimate position (Hayes, 2009).
Finally, in both Example 32 and 34, the lexeme remains vowel-final, as per phonotactic rules for IP.

At Example 34 the speakers have dropped the coda from the penultimate syllable, not the onset of the final syllable: nyuntu**m**pa/ nyuntum**p**a. By doing this, the lexeme how has a euphonic -pa suffix (EUPH) in place of the -mpa homorganic GEN suffix. The EUPH suffix is very productive in Pitjantjatjarra, and it may be that the speakers recognise this suffix as a common word ending, and have kept it because they believe it belongs there.

5.1.2 Word Final Elision

The data contained 12 examples of word-final elision, either syllabic or final vowel. When the final syllable or vowel is dropped from a lexeme in natural speech, it is considered run-on

speech (Goddard 1985). These sorts of elisions are far less likely to occur in considered speech. However word-final elisions are not always that simple. The data included examples of word final elision that were utterance or sentence final. This may be indicative of a broader trend towards simplification and shortening in general. Considering aspects of word medial shortening have already been analysed in earlier sections of this paper, these word final and utterance final elisions are worth studying here.

35.0 Traditional
Nyinang**i** pala
nyina+ng**i** pala
be+PAST CONT DEM
Was sitting there.

36.0 Contemporary
Nyinang(**i**) pala
nyina+ng pala
be+PAST CONT DEM
Was sitting there

In a natural speech environment, a speaker will run words together in an effort to say as much as possible, with the least amount of effort (McColl Millar, 2007). On the tape the speaker can be heard pronouncing the two lexemes separately. Further, by dropping the word-final vowel on nyinang(i), the speaker is pronouncing the entire phrase that much faster.

37.0 Traditional
Ngarrin**yi**
ngarri+n**y**i
lay+PRES
Sleeping

38.0 Contemporary
Ngarrin(**yi**) [Papa red one purlakanya purnungka tjarlu ngarrin**yi**]
ngarri+n
lay+PRES
Sleeping

At Example 38, the speaker has dropped the sentence final segment, glide /yi/.
This same loss is echoed by a different speaker in another example.

39 Contemporary
Anan(**yi**) [Kunkunarrinyi ka ngayulu anan**yi**]
a+nanyi
go+PRES
Going

In Section 4 it was established that a glide initial syllable, due to its high sonority is easily dropped. Examples 38 and 39 demonstrate its loss in sentence final position. However, unlike the examples of coda loss in the previous section, there is no evidence of compensatory lengthening. There are three possible reasons for this.

a) The sentences at 38 and 39 are examples of run on speech

b) The elision is occurring word-finally and sentence-finally
c) The final-position consonants are geminated (Browne, Proctor, Simpson, Harvey, Mailhammer & Carpenter, 2024)

There are not enough examples in the data to analyse these variations any further, but this innovation has been marked for further collection and study.

40.0 Contemporary
Wanti. Wakanti(**wi**)ya. Wanti.
wanti waka+nti+wiya wanti
leave it pierce+PART+NEG leave it
Stop. Don't tear it. Leave it.

The example at 40 is slightly different in that it shows the elision of a word-initial syllable. Speakers will often eliminate a repeated phone, in this case a word-initial approximate. In Section 4.4 it was established that some syllables are weaker than others. An approximate-initial syllable with a close front vowel is sonorous and likely to be lost during language change. If the next position is the same as the one just produced, the semi vowel becomes obsolete. Which is what has occurred at Example 40.
The loss of an initial approximate, allowing speakers to run two lexemes together changes the prosody of the utterance.
See the difference below, where stress placement is signified thus '

Traditional
wakanti **wi**ya
'wa/kan/ti '**wi**/ya
CV/CVC/CV **CV**/CV
2.5 feet; 5 μ

The elision of the first syllable of the NEG creates a different pronunciation. In the traditional example stress is placed on the first syllable of the first word and the first syllable of the second word, as per Goddard (1985). In the contemporary example stress is heard on the first and third syllables of the new run-on lexeme. The third syllable has become a long syllable and these attract stress (Hayes, 2009).

Contemporary
wakantiiya
'wa/kan/'tii/ya
CV/CVC/CV/CV
2.5 feet; 5 μ

This analysis shows how the stress pattern in a two-word utterance, shifts in the creation of a one-word utterance. In the variant example, stress is applied to the prefinal syllable. On the tape, the speaker can be heard holding the close front vowel one beat longer. As a result, the variation is the same length as the original Traditional Pitjantjatjarra example at 39, because the speaker is using CL to maintain the length of utterance of the whole phrase (Gess, 2011).

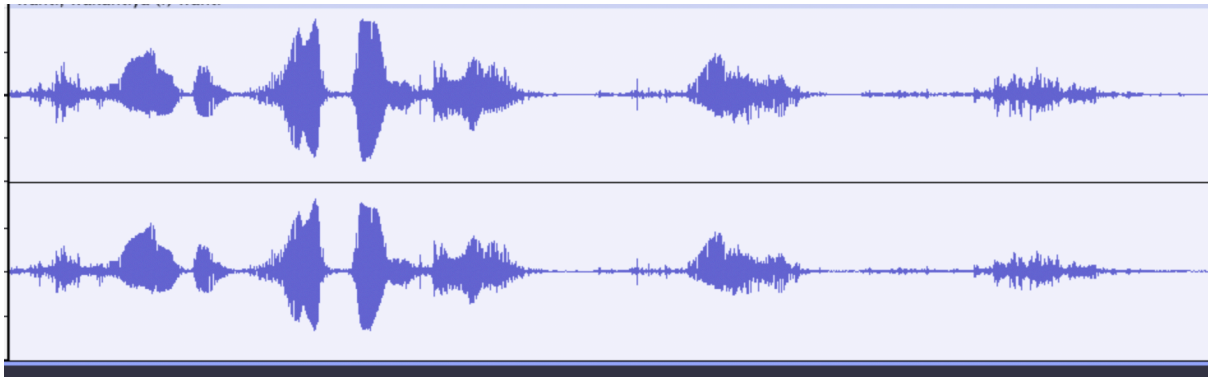


Figure 3: Wanti. Wakanti**(wi)**ya. Wanti.

Figure 3 shows the new penultimate syllable with the compensated stress/ length applied following the merge of two lexemes into one.

5.1.3 Consonant Cluster Simplification and Suffix Variation

Pitjantjatjarra is a suffixing language with strict rules for attaching case markers to nominals which are dependent on whether the lexeme is C or V final, noun, or pronoun (Goddard & Defina, 2020; Eckert & Hudson, 2011).

41.0 Traditional
tjarrtjarr**pa**,
tjarrtjarr+pa
shallows+EUPH
shallows

The lexeme analysed at 41, tjarrtjarrpa, *shallows*, is shown in its traditional form with the EUPH -pa syllable at word final position. Without it, the lexeme would finish with a consonant. Pitjantjatjarra is a vowel-final language and this -pa suffix is quite productive as it's on C final lexemes allows speakers to meet the phonotactic rule (Goddard & Defina, 2020; Eckert & Hudson, 2010).
Data provided by the younger speaker group shows a morphological change that allows for the -pa syllable to be eliminated.

42.0 Contemporary
tjarrtjaa
tjarrtjaa+0
shallows

Speakers are employing CL by using a long vowel word-finally to make up the lost mora, as seen at 42.
It is worth discussing the way in which the lexeme's construction and prosody has changed as a result.

Traditional
tjarrtjarrpa
'tjarr/tjarr/pa
CVC/CVC/CV

1.5 feet; 3 μ

The traditional example as broken down above, is comprised of three syllables.

Contemporary
Tjarrtjaa
‘tjarr/tjaa
CVC/CV
1.5 feet; 3μ

In contrast, the contemporary example is only two syllables. Because the coda of the second syllable has been dropped in this example, there is no need for the third, EUPH syllable.

This next example shows the adaptability of Pitjantjatjarra. At 42 speakers have replaced the lost mora through suffixation; an innovative move, and one that is within the rules of the language.

43.0 Traditional
Nyuntu itipirrinyi uru tjarrtjarr**ta**.
nyuntu+0 itipirri+nyi uru tjarrtjarr+ta
2SG +ABS cross+PRES water shallow+LOC
You can go across, the water is shallow

44.0 Contemporary
Nyuntu itipirrinyi uru tjarrtja**ngka**
Nyuntu+0 itipirri+nyi uru tjarrta+ngka
2SG+ABS cross+PRES water shallow+LOC
You can go across, the water is shallow

Pitjantjatjarra phonotactic rules state that the LOC variant -ta is used with words that end in the alveolar nasal, lateral or alveolar stop (Goddard & Defina, 2020). This is shown at Example 43.

Locative variant -ngka is used on nouns that are not names, and that end with a vowel (Goddard & Defina, 2020). At Example 44, the CC has been dropped from the end of the lexeme, leaving speakers free to use the -ngka LOC variant. When applied to the nominal, -ngka crosses the morpheme boundary and gives the new construction the mora that was lost in Example 42. In this way, speakers are making up for the loss of -rrpa by using -ngka. By changing the suffix, the lexeme has been restored to its original length.

Traditional
tjarrtjarrta
tjarr/tjarr/ta
CVC/CVC/CV
1.5 feet; 3 μ

Contemporary
tjarrtjangka
tjarr/tjang/ka

CVC/CVC/CV
1.5 feet; 3 μ

The contemporary example, with -ngka instead of -ta also restores the original syllabic pattern of CVC/CVC/CV.

The variations discussed in this section are indicative of the types of morphological innovation being used by the younger speaker group to shorten lexemes, which is a common theme in this research.
The following sections will present and analyse more changes that are shifting the code towards shorter lexemes.

5.2 Morphological Variation; Verbs

Data provided by speakers in terms of morphological variation and change of the verbal word class included: the simplification of the intentional (INTENT) and PRES tense suffix; and changes to the SAE loans paya-, tiitji-, kilina-, alpa-, tjala- and their associated suffixes.

5.2.1 Simplification of the Complex INTENT Suffix

The INTENT suffix represents the personal motive of a single subject (SS) sentence with a subordinate clause (Eckert & Hudson, 2011; Goddard & Defina, 2020; Goddard, 1985). This suffix attaches to nominals, or verbs that have first been nominalised (Wilmoth, 2022). In traditional Pitjantjatjarra that means using the appropriate variation for that verb class.

Table 5: NOM+INTENT Suffixes by Verb Class

Verb Class (Traditional)	**wa**	**rra**	**la**	**null**
Traditional usage of the INTENT suffix	-ngkunytjikitja -ngkunytji+kitja NOM+INTENT	-nkunyjtiktja -nkunytji+kitja NOM+INTENT	-ntjikitja -ntji+kitja NOM+INTENT	-nytjikitja -nytji+kitja NOM+INTENT
Verb Class (Contemporary)	**wa**	**rra**	**la**	**null**
Contemporary usage of the INTENT suffix	-kitja INTENT attached directly onto the root	-nku+kitja AUG+INTENT	-kitja INTENT attached directly onto the root	-kitja INTENT attached directly onto the root

Audio samples captured during research sessions have revealed the *minyma tjurta* dropping the NOM segment and attaching the INTENT suffix directly onto the verb root. Examples from each of the four Pitjantjatjarra verb classes were collected, with the exception of the rra class, where the speaker has kept the -nku- augment (AUG) but dropped the NOM (Example 46).

45.0 Contemporary use; wa class example
Tjitji ankupayi youth centre-kuru wiru tjurta nintirri(ngkunytji)**kitja**
Tjitji a+nkupayi youth centre+kuru wiru tjurta ninti+rri+**kitja**

Child go+CHAR youth centre+ALL nice PLURAL know+VERB+**INTENT**
The kids go to the youth centre to learn cool things.

46.0 Contemporary use; rra class example
Ngayuku kami mukurringkupayi tjuutju-kutu a**nku**(nytji)**kitja** inma kuli**ntjikitja**.
Ngayu+ku kami mukurri+ngkupayi tjuutju+kutu a+nku+**kitja** inma kuli+**ntji**+kitja
1SG+GEN grandmother like+CHAR church+ALL go+AUG+I**NTENT** song listen+**NOM**+**INTENT**
My grandmother likes going to church to listen to the songs.

At 46 the speaker has kept AUG -nku- but not the -nytji segment of the NOM which would appear as -nkunytji-. The same speaker has later used the complete NOM+INTENT variation on the second verb, kuli- *listen*.
However, a different speaker provided the la class kuli- without the NOM at a later session. See below;

47.0 Contemporary use; la class example
Tjuutjukutuya ankupayi kataku tjukurrpa kuli(ntji)l**kitja**.
Tjuutju+kutu+ya a+nkupayi kata+ku tjukurrpa kuli+l**+kitja**
Church+ALL+3PL go+CHAR god+PURP story listen+EUPH+I**NTENT**
They go to church to listen to stories about God.

Examples 46 and 47 also show speakers switching between ALL kuru and kutu, as discussed in the previous section. That both variants are still being used suggests the shift is not yet complete (Weiss, 2024).
At 47, the speaker has dropped the NOM -njti- but added a EUPH lateral. It is argued the lateral has been added for ease of articulation, mora count and also possibly because the speaker believes it belongs there. In la class, the characteristic (CHAR) and future (FUT) tenses also feature a EUPH lateral: -lpayi and -lku (Gorring, 2021).

48.0 Contemporary use; la class example – different speaker
Paluru anu tjuwakutu mayi mantji(ntji)**kitja**.
Palu+ru a+nu tjuwa+kutu mayi mantji+**kitja**
3SG+ERG go+PAST food get+**INTENT**
He went to the shop to get food.

Example 48 shows another la class INTENT suffix attaching directly to the verb root, but without a EUPH lateral. The loss of -ntji- at 48 is a repeated segment (David Nash, personal communication September 2, 2025). In this example, the elision could be ascribed to haplology but given there are many other examples of this exact suffix being elided in other lexemes, and in other verb classes, it is argued that haplology is not the causative factor.

The speaker at 49, is the same speaker at Example 46. The other examples were collected from different speakers.

49.0 Contemporary use; null class example
Ngayulu mukurringanyi nyuntula ngarri(nytji)**kitja**.
Ngayu+lu mukurri+nganyi nyuntu+la ngarri+**kitja**
1SG+ERG desire+PRES 2SG+LOC lay+**INTENT**
I want to sleep (over) with you.

The five sentences analysed in this section show examples of the NOM morpheme loss in all four verb classes. The speaker in 46 has used one contemporary and one traditional variation of the INTENT in the same sentence, demonstrating that this shift is not yet complete (Weiss, 2024).

Langlois (in Wilmoth, 2022) has noted teenage speaker groups in Areyonga affixing the INTENT directly onto the verb, without using the NOM. She suggested this change is an example of shift towards Ngaanyatjarra. This research finds that to be unlikely. In the previous section it was established that speakers are dropping unstressed syllables in nominal word classes, in a manner that is not dissimilar to the loss of unstressed morphemes in the verbal class. The research conducted by GALC points towards a pattern of language change resulting in shorter lexemes across the language.

Wilmoth (2022) has also noted a shift towards this innovation in a group of speakers aged 23 years or younger in Pukatja. The research had collected 6 examples of shorter INTENT suffixes out of a database of over 100 sentences. She argues that this variation is by no means the preferred, yet. The data collected at Irrunytju shows attaching the INTENT suffix directly to the nominal is an unmarked variety on the part of speakers. At Example 46 the speaker has used the contemporary variant alongside a traditional variant which suggests she believes the shorter lexeme is correct, for whatever reason. Further, the use of the EUPH lateral in la class Example 47 demonstrates the speaker has knowledge of phonotactic rules for affixing stop-initial suffixes in la class, again pointing to the likelihood that she believes the contemporary, shorter variation is not a variation, but the true and correct lexeme.

However, the fact remains that this variation is currently existing alongside the contemporary version, which means the change is not yet complete (Weiss, 2024). Therefore, while this new variant has not completely solidified in the register of *minyma tjurta,* it is embedded enough that speakers cannot see anything remarkable about its use.

5.2.2 Simplification of PRES tense Suffix

In the previous section it was shown how the *minyma tjurta* group of speakers are in the process of shortening the INTENT suffix by dropping the NOM morpheme present in the TP INTENT suffix. This section will look at the shortening, or simplification of the rra class PRES suffix, -nanyi.

Pitjantjatjarra verbal morphology is clever, adaptive and innovative, if not complicated and precise. Verb roots are either mono or bi-syllabic and usually vowel-final. Whereas TAM markers (Tense, Aspect or Mood) may have as many as five syllables and are usually consonant initial. This allows for the complete verb (root, suffix and any stems) to comply with phonotactic rules around syllables.
Different verb classes are augmented to allow for metre and prosodic variation (Wilmoth, 2022). This explains the repetitive nature of tense suffixes, for example:

Table 6: Pitjantjatjarra Verb Tenses

	NULL	LA	RRA	WA
FUT	-ku	-lku	-nku/-nkuku	-ngkuku

PRES	-nyi	-rni/-ni	-nanyi	-nganyi
PAST	-ngu	-rnu	-nu	-ngu
IMP	∅	-la	-rra	-wa
CHAR	-payi	-lpayi	-nkupayi	-ngkupayi

Pitjantjatjarra verbs may have up to as many as 14 different TAM markers. Table 6 presents five of the most common, demonstrating the way in which augments result in longer suffixes in the rra and wa class as opposed to null and la classes (Goddard & Defina, 2020; Eckert & Hudson, 2010).

Data provided by speakers revealed examples of the rra class PRES tense shifting towards a null class model.

50.0 Traditional Example
ngalytjurrmananyi
ngalytjurrma+nanyi
growl+PRES
growling

51.0 Contemporary Example
ngalytjurrma(na)nyi
ngalytjurrma+nyi
growl+PRES
growling

Traditional Example
ngaly/tjurr/ma/na/nyi
CVC/CVC/CV/CV/CV
2.5 feet; 5 μ

Contemporary Example
ngaly/tjurr/ma/nyi
CVC/CVC/CV/CV
2 feet; 4 μ

The variation used by the younger speaker removes one mora or half a metric foot. The composition of syllables is the same in that there is no change to the number of CVC syllables, or light/heavy classification. It is noteworthy that the affected syllable is once again the unstressed prefinal syllable.
On audio recordings the speaker has stressed the coda of the second syllable. She has not lengthened the (new) penultimate syllable -ma-. The end result, apart from making the lexeme shorter, is to move the suffixed verb towards a la class PRES format; as can be seen in Table 6.

5.2.3 Changes to the Derivation of Borrowings-

Australian languages are very adaptive. During contact with SAE, Aboriginal codes across the continent needed to create labels for the new concepts and things they encountered as a result of invasion and subsequent colonisation (Gorring, 2022). Transitive (TRANS) loans

were borrowed into Pitjantjatjarra la class using the -mila- TRANS verbaliser (Goddard, 1985).

Table 7: Borrowed verbs, TRANS la Class

SAE	Pitjantjatjarra	Root format	TRANS	PRES la Class
pay or buy	payamilarni	paya-	-mila-	-rni
sell	tjalamilarni	tjala-	-mila-	-rni
ring or call	ringamilarni	ringa-	-mila-	-rni
tease	tiitjimilarni	tiitji-	-mila-	-rni
help	alpamilarni	alpa-	-mila-	-rni
clean	kilinamilarni	kilina-	-mila-	-rni
translate	translatamilarni	translata-	-mila-	-rni

Table 7 shows the Traditional PRES tense affixation of transitive verbs borrowed from SAE. In Traditional Pitjantjatjarra, transitive verbs borrowed from SAE are placed into the la class with a VERB stem -mila-. Because IP is a vowel-final language, every root has been formatted with a final vowel. AS shown in the previous section, where roots are v-final VERB stems are c-initial. Stems are v-final, which allow for c-initial TAM markers. These are v-final, allowing for Pitjantjatjarra phonotactic rules.

Data provided by the *minyma tjurta* has revealed a complicated and intriguing shift away from the tense system used by the *kami tjurta,* towards a new system entirely. At first glance this variation does not appear to be entirely transparent.

Table 8: Borrowed Verbs; TRANS la Class Contemporary

SAE	Root	VERB	Suffix Examples	TAM/ Case	Class
pay or buy	payi-	-ma-	-lpayi	CHAR	la
			-lkupayi	AUG+CHAR	la
			-lkitja	AUG+INTENT	la
			-ningi	PAST CONT	la
			-latju	AUG+REFLEX	Pronominal
		-mila-	-lku	FUT	la
			-ntjaku	PURP	la
	paya-	-mi-	-ni	PRES	la
sell	tjala-	-mi-	-ni	PRES	la
ring or call	ringa-	-mi-	-la	IMP	la
		-ma-	-rna	2SG	Pronominal
tease	tiitji-	-ma-	-ningi	PAST CONT	la
			-nku	FUT	rra
help	alpa-	-mi-	-lkupayi	AUG+CHAR	la
			-rnu	PAST	la
			-la	IMP	la
clean	kilina-	nil	-ningi	PAST CONT	la
translate	translata-	-mi-	-li	1DU	Pronominal

Table 8 shows the variation on the la class TRANS -mila- as used by the *minyma tjurta*. It is clear the v-final/c-initial rules are still being met at each morpheme, but the transitive VERB -mila- is changing. In some examples speakers appear to be shortening it to -mi- and in other examples it becomes -ma-. This shift has a carry-on effect in terms of the TAM suffixes used by speakers.

5.2.3.1 Contemporary payi-, *pay or buy*

The vowel change from paya- to payi- for the SAE borrowed verb root has been discussed in Section 3.4. This section will focus on the changes to the VERB stem and associated TAM.

In Traditional Pitjantjatjarra the transitive loan is verbalised with -mila- (Goddard, 1985). A younger generation of speakers has innovated -ma- and also -mi- as variants on this stem. Being a variant of -mila-, -ma- also derives la class verbs (S. Wilmoth, personal communication, October 1, 2024).
However, the rra class of verbs also uses -ma-/ -nma- as a verbaliser in its own right (Goddard & Defina, 2020; Eckert & Hudson, 2011) and it will be demonstrated that this has resulted in further variation with TAM affixation.

52.0 Contemporary
payi**ma**lpayi
payi+**ma**+lpayi
payi+VERB+CHAR
Always buying.

Syllabic
pa/yi/mal/pa/yi
CV/CV/CVC/CV/CV
2.5 feet; 5 μ

53.0 Contemporary
payimalkupayi
payi+ma+lku+payi
pay+VERB+AUG+CHAR
Always buying

Syllabic
pa/yi/mal/ku/pa/yi
CV/CV/CVC/CV/CV/CV
3 feet; 6 μ

The traditional version, payamilalpayi, is three metric feet. Example 52, shows the -ma- variation with a typical la class CHAR suffix, while Example 53 presents the -ma- variation with an augment, -lku-. Speakers in the *minyma tjurta* group use examples 52 and 53 in free variation. There appears to be no rule as to which should be used where.

Arguments as to whether -lpayi can or cannot attach to an unfooted stem are irrelevant (Wilmoth, 2022). Example 52 clearly demonstrates speakers are either unaware of this rule or are comfortable breaking it.

54.0 Contemporary
payimalkitja
payi+ma+l+kitja
buy+VERB+EUPH+INTENT
Intending to buy or pay.

Syllabic
pa/yi/mal/ki/tja
CV/CV/CVC/CV/CV
2.5 feet; 5 μ

Example 54 shows the way in which the -ma- innovation is used in conjunction with the INTENT variation discussed in Section 5.2.1. This new form results in a lexeme with 2.5 metric feet.
In contrast, a Traditional formation is comprised of 3.5.
Readers will note the speaker has still chosen to use a EUPH lateral before the INTENT -kitja. Phonologically-speaking, it is easier for the vocal apparatus to produce payima+lkitja than payima+kitja. Morphologically speaking, the EUPH lateral is attached to stems in the la class prior to a velar stop or bilabial stop to encourage ease of pronunciation. That the speaker has included it here, shows they understand this rule.

55.0 Contemporary
payimaningi
payi+ma+ningi
buy+VERB+PAST CONT
Was buying.

Syllabic
pa/yi/ma/ni/ngi
CV/CV/CV/CV/CV
2.5 feet; 5 μ

Again, the contemporary example shown at 55.0 is one syllable shorter than the Traditional payamilaningi, which is comprised of six CV syllables.

56.0 Contemporary
payimilantjaku
payi+mila+ntjaku
buy+VERB+PURP
With the purpose of buying

Syllabic
pa/yi/mi/lan/tja/ku
CV/CV/CV/CVC/CV/CV
3 feet; 6 μ

57.0 Contemporary
payimilalku
payi+mila+lku
buy+VERB+FUT
Will buy

Syllabic
pa/yi/mi/lal/ku
CV/CV/CV/CVC/CV
2.5 feet; 5 μ

Example 56 shows the variant root payi- with traditional VERB -mila- suffixed with the purpose (PURP) TAM. This variant has six syllables, just like the Traditional payamilantjaku.
Example 57 was provided by one of the *kami tjurta*. It is one of the rare occasions when the form of a younger speaker was captured in the speech of an older speaker.
Examples 56 and 57 are included here to demonstrate the way in which speakers are mixing roots and VERB stems. A contemporary root combined with a traditional stem and a traditional stem attached to a contemporary root. This overlap of forms is an example of synchronic variation whereby the original form co-exists with the new form for a period of time. The existence of overlap here indicates that the shift from -mila- to -ma- is not yet complete in this generation at least (Weiss, 2024).

5.2.3.2 Traditional paya- with Stem Variants

Considering synchronic variation and overlap of forms, the data included examples of the Traditional borrowing paya- suffixed with the Contemporary VERB stem -mi-.

58.0 Traditional
payamilarni
paya+mila+rni
pay+VERB+PRES
paying or buying

59.0 Contemporary
Payamirni
Paya+mi+rni
Pay+VERB+PRES
Paying or buying

The loss of the penultimate syllable /la/ results in the contemporary variant being one mora shorter than the traditional example. The lexeme analysed at 59 is another example of unstressed syllable loss (in prefinal syllable position).
Of course, the question remains; where does the -mi- variant come from ?
Concerning the transitive verbaliser, Goddard (1985) analyses the stem as -mila-. Eckert and Hudson (2011) place the form as -ila-, being used to verbalise Pidgin English (PE) where

words like pay are borrowed into Pitjantjatjarra as payam-. In this case the verbalised construction can be translated as ‘pay me PRES’.
The shortening of -mila- to -mi- in Example 59 could indeed be changing -mila- to ‘me’, using a Pitjantjatjarra orthograpy; -mi-. However, there is not enough information in data to prove this with any certainty.

5.2.3.3 Sell, Ring, Clean, Tease, Help and Translate

The remaining borrowings presented at Table 7 demonstrate a mix of both -mi- and -ma- VERB with various TAM, not dissimilar to those forms discussed in Sections 4.2.3.1 and 4.2.3.2. There are however, four constructions that deserve specific mention.

5.2.3.3.1 Simplification of Transitive Loans

The change from -mila- to -mi- is resulting in the loss of the repeated /la/ syllable when a borrowed verb is used in the imperative (IMP). It also has the effect of making the entire construction shorter.

60.0 Traditional
Ringamilala
ringa+mila+la
ring+VERB+IMP
Ring!

Syallabic
ri/nga/mi/la/la
CV/CV/CV/CV/CV
2.5 feet; 5 μ

61.0 Contemporary
Ringami**(la)**la
ringa+mi+la
ring+IMP
Ring!

Syllabic
ri/nga/mi/la
CV/CV/CV/CV
2 feet; 4 μ

62.0 Traditional
Alpami(**la**)la
alpa+mila+la

help+VERB+IMP
Help!

Syllabic
al/pa/mi/la/la
CV/CV/CV/CV/CV
2.5 feet; 5 μ

63.0 Contemporary
Alpamila
alpa+mi+la
help+VERB+IMP
Help!

Syllabic
al/pa/mi/la
CV/CV/CV/CV
2 feet; 4 μ

Speakers are known to drop a repeated syllable in natural speech, so the loss of one syllable between Examples 60 and 61 and 62 and 63 would not be described as an innovation (Goddard, 1985; Goddard & Defina, 2020. But how to identify which repeated syllable is being dropped by the speaker? It would be very straight forward to assume the lost syllable is the final syllable, but the research does not support this.
Throughout the current paper, the speakers' tendency to drop the penultimate syllable has been demonstrated. Added to this, as discussed in Section 4.2.3.2, the change from -mila-/ -ila- in favour of -mi- is another example of speakers are choosing to drop the unstressed penultimate, -la syllable and not the final -la syllable. The loss of the penultimate syllable is common in Contemporary Pitjantjatjarra and the analysis presented at 61 and 63 are further proof of a shift towards shorter lexemes through loss of an unstressed syllable.

5.2.3.3.2 Lexicalisation into Pitjantjatjarra

Transitive loans are placed in the la class (Goddard, 1985; Goddard & Defina, 2020; Eckert & Hudson, 2011). They are easily recognisable by their form and due to the -mila- TRANS. If a word is loaned successfully into a language, there will come a point when it is unrecognisable as such. For transitive loans, this happens when the TAM is attached directly onto the verb root, without the use of the -mila-/ -ma-/-mi- stem. There were two examples of this happening in the data.

64.0 Traditional
kilinamilaningi
kilina+mila+ni+ngi
clean+VERB+PRES
Was cleaning

Syllabic
ki/li/na/mi/la/ni/ngi
CV/CV/CV/CV/CV/CV/CV

3.5 feet; 7 μ

65.0 Contemporary
Kilinaningi
kilina+ningi
clean+PAST CONT
Was cleaning.

Syllabic
ki/li/na/ni/ngi
CV/CV/CV/CV/CV
2.5 feet; 5 μ

Example 65, shows how the transitive loan kilina- has become part of the language because the speaker is not VERB the borrowing with the -mila- stem. This also means the lexeme has become one metric foot shorter. This is a significant difference. However, there is no apparent effort on the part of the speaker to indulge in CL, because she believes the lexeme is as long as it is supposed to be. This is further proof the borrowing has become lexicalised into Pitjantjatjarra.

66.0 Traditional Example
Tiijtimilalku
tiitji+mila+lku
tease+VERB+FUT
Will tease.

Syllabic
tii/tji/mi/lal/ku
CV/CV/CV/CVC/CV
3 feet; 6 μ

67.0 Contemporary Example
Tiijtimanku
tiitji+ma+nku
tease+VERB+FUT
Will tease.

Syllabic
tii/tji/man/ku
CV/CV/CVC/CV
2.5 feet; 5 μ

Example 67 has also been lexicalised into Pitjantjatjarra. However in doing so, the verb has been placed into a different class. At 66 -mila- places the root into la class. At 67, -ma- and the use of the rra class FUT -nku, demonstrates lexicalisation away from la into rra class. In terms of Pitjantjatjarra verbal morphology, this works because both la and rra class verbs are mostly TRANS (Defina, 2020; Eckert and Hudson, 2011).

5.2 Closing Remarks

Change and variation to the verbal class of words has included innovation in the form of simplification of the INTENT, syllable elision of the rra class PRES and changes to the way transitive loans are verbalised and lexicalised into the language. One thing these changes have in common is that they all invariably make the lexemes shorter. They do that by consistently eliding the unstressed prefinal syllable. Analyses of morphological variations in this section has demonstrated that verbs are changing in the language.

5.3 Morphological Variation; Pronominals

Pitjantjatjarra is different to its Wati neighbours in that it does not make a distinction between inclusive and exclusive pronouns. In Irrunytju, Ngaanyatjarra speakers do use a system of inclusive/exclusivity, but the data does not show any convergence on the part of IP speakers towards the Ngaanyatjarra system. Even after generations of living in the same community, there is no indication of one language group adopting aspects of the pronominal system of the other. This suggests language is a marker of cultural identity in this community. Arnangu see themselves as being from Irrunytju, but are either Ngaanyatjarra or Pitjantjatjarra.

Data provided by speakers showed a small incidence of variation in pronominal suffixing, that could be a shift towards Ngaanyatjarra usage, or a shift in preference of IP pronominal suffixing from a marked, towards an unmarked variety.

5.3.1 Pronominal Suffixation, Genitive Suffix

Data provided by speakers from the *minyma tjurta* group showed variation in the application of GEN suffixes to the 2SG pronoun.

Table 9: Pitjantjatjarra Pronominal GEN Suffixing, Traditional Usage

Word class		-ku	-mpa
Nouns		X	-
Pronouns	1SG	X	-
	All others	-	X

Table 9 shows Pitjantjatjarra GEN suffixes and the way each variety attaches to a stem according to word class. It shows that -ku is the unmarked choice for nouns, and -mpa for pronominals, with the exception of the 1SG, ngayu- where -ku is the exception or marked choice (Goddard & Defina, 2020; Eckert & Hudson, 2011).
Data provided by speakers from the *minyma tjurta* cohort shows a slight shift towards a marked choice for the 2SG, you.

68. Contemporary Example
Nyuntuku
nyuntu+ku
2SG+GEN
Your

At Example 68 the speaker from the minyma tjurta group has suffixed GEN -ku onto the 2SG. In a traditional example -mpa would be used. The speaker in question tends to prefer to use -ku over -mpa, where other speakers would use the unmarked -mpa variant. The speaker at Example 68 is a L1 Pitjantjatjarra speaker who has L2 Ngaanyatjarra. The -ku suffix is the unmarked variety in Ngaanyatjarra. Multilingual speakers do not often confuse their codes unintentionally (Ortega, 2009; Holmes & Wilson, 2017). Therefore, her L2 is not likely the cause of her suffix choice. Rather, this speaker has chosen to use the -ku suffix because of the shift towards -pa and away from -mpa on 2SG as discussed in Section 5.1.1.

5.4 Morphological Change, Closing Remarks

In a similar fashion to patterns of language change and variation at a phonological level, data collected from the *minyma tjurta* group of speakers indicated a shift at the morphological level towards shorter nominals and verbs. Tactics employed by speakers to achieve this included, changing word final consonant clusters that in turn allowed case marker variation, shortening or simplifying complex verbal suffixes such as INTENT, changing verbal morphology around transitive loans, lexicalisation of loans and change in the marked/unmarked choice of pronominal suffixation. Again, it was demonstrated that the penultimate syllable is the syllable most likely to be dropped by speakers.

6.0 Conclusion

Languages experience change because of external influence from other languages. Other times change comes from within (Reid, 2010). This paper has argued that the changes seen within IP is not a result of continued exposure to SAE, but a natural form of language change that occurs cross-linguistically (Kager, 2007).
As discussed in this paper, the types of phonological and morphological language change occurring at Irrunytju, are resulting in shorter and less complicated lexemes. Incidences of these changes are noted at a higher rate in a generation of mothers, (*minyma tjurta)* compared to that of grandmothers and aunties (*kami tjurta*). While the parameters of this study does not extend to children and teenagers, it is entirely plausible to suggest these changes are driven by younger generations, because that is where language change begins (Wilmoth, 2022, Langlois, 2006; Holmes & Wilson, 2017). In minimizing the amount of effort needed to communicate, without compromising the listeners ability to understand what is being said, these shorter, simpler variations are demonstrative of economy in language (Montero et al., 2023).

7.0 References

Browne, M., Proctor, M., Simpson, J., Harvey, M., Mailhammer, R., & Carpenter, H. (2024). Stop oppositions in Warumungu. A distributional and acoustic analysis. In *Proceedings of the nineteenth Australasian international conference on speech science and technology* (pp. 117-121). University of Melbourne.

Defina, R. (2020) Acquisition of Pitjantjatjarra Clause Chains. *Frontiers in Psychology*, 11(541) 1-18. doi:10.3389/fpsyg.2020.00541

Dixon, R. M. W. (2002). *Australian languages: their nature and development*. New York, United States of America: Cambridge University Press

Dixon, R., M., W. (2011). *The Languages of Australia.* New York, United States of America: Cambridge University Press

Eckert, P & Hudson, J. (2010). *Wangka Wiru: A Handbook for the Pitjantjatjarra Language Learner.* Adelaide, South Australia: Mirrabooka Press.

Gess, R. (2011). Compensatory Lengthening, Volume III, Phonological Processes. Wiley Online Library. https://doi.org/10.1002/9781444335262.wbctp0064

Glass, A. & Hackett, D. (2003). *Ngaanyatjarra and Ngaatjatjarra to English Dictionary.* Alice Springs, Australia: IAD Press.

Goddard, C. (1985) *A Grammar of Yankunytjatjarra*. Alice Springs, Australia: IAD Press.

Goddard, C. & Defina, R. (2020) *Pitjantjatjarra/ Yankunytjatjarra to English Dictionary*. Alice Springs, Australia: IAD Press.

Gorring, J. (2021). *Irrunytju Pitjantjatjarra Toolbox*. Goldfields Aboriginal Language Centre Aboriginal Corporation: Kalgoorlie – Boulder, Australia

Gorring, J. & Hanson, S. (2022). *Word Creation in Goldfields Aboriginal Languages.* Goldfields Aboriginal Language Centre, Kalgoorlie-Boulder: Australia.

Gorring, J. (2023). *Irrunytju Pitjantjatjarra: a Dialectal Study.* Goldfields Aboriginal Language Centre, Kalgoorlie-Boulder: Australia

Harris, J. (1985). *Phonological Variation and Change in Hiberno-English.* Cambridge, United Kingdom: Cambridge University Press.

Hayes, B. (1989). Compensatory Lengthening in Moraic Phonology. *Linguistic Inquiry*, *20*(2), 253–306. http://www.jstor.org/stable/4178626

Hayes, B. (2009). *Introductory Phonology*. Chichester, United Kingdom: Wiley Blackwell

Holmes, J. & Wilson, N. (2017) *An Introduction to Sociolinguistics (5th ed.).* London & New York: Routledge.

Jespersen, O. (1917) *Negation in English and other Languages*. Reprint, Alpha Editions.

Kager, R. (2007). Feet and Metrical Stress. In de Lacy, P. (ed), *The Cambridge Handbook of Phonology* (pp. 196-227). Cambridge, United Kingdom: Cambridge University Press

Langlois, A. (2004). *Alive and Kicking*: *Areyonga Teenage Pitjantjatjarra*. Canberra, Australia: Pacific Linguistics

Langlois, A. (2006) *Wordplay in Teenage Pitjantjatjara,* Australian Journal of Linguistics, 26:2, 181-192, DOI: 10.1080/07268600600885510

McColl Millar, R. (2007). *Trask's Historical Linguistics (*2nd ed.).London, United Kingdom: Hodder Education.

Miller, W., R. (1971). *Dialect Differentiation in the Western Desert Language*. doi:10.1080/00664677.1971.9967258

Minutjukur, M., Tjitayi, K., Tjitayi, U., & Defina, R. (2019). Pitjantjatjara language change: Some observations and recommendations. *Australian Aboriginal Studies* (1), 81–92.

Montero, J., G., Karjus, A., Smith, K. & Blythe, R., A. (2023) *Reliable Detection and Quantification of Selective Forces in Language Change*. Retrieved from https://doi.org/10.1515/cllt-2023-0064

Odden. D. (2005). *Introducing Phonology*. Cambridge, United Kingdom: Cambridge University Press.

Ortega, L. (2009). *Understanding Second Language Acquisition*. London, United Kingdom: Hodder Education.

Reid, N., J. (2010). *English Influence of the Pronunciation of Re-awakened Aboriginal Languages.* Retrieved from https://hdl.handle.net/1959.11/9094

Tabain, M., & Butcher, A. (2014). Pitjantjatjara. *Journal of the International Phonetic Association*, *44*(2), 189–200. doi:10.1017/S0025100314000073

Trudinger, R., M. (1943). *Grammar of the Pitjantjatjarra Dialect, Central Australia*. Retrieved from http://www.jstor.org/stable/40327992

Weiss, H. (2024). How to Explain Linguistic Variation and its Role in Language Change. De Gruyter Mouton. Zeitschrift für Sprachwissenschaft. 43(1):19-40 https://doi.org/10.1515/zfs-2024-2008

Wilmoth, S. (2022). Pitjantjatjarra: A contemporary intergenerational study. Melbourne Australia: University of Melbourne

8.0 List of Tables and Figures

Appendix 1: Wordlist

The wordlist below contains 100 random words taken from the IP database for analysis of the frequency of syllables.

Aarnarrinytja
Akatjarri
Akumunurringkula
Akuri
Alatji
Alintjarra
Alkara
Atini
Atintja
Inka
Inkanyi
Kalypa
Kampa
Kampaku
Kamparringanyi
Karru
Kartirti
Kata
Kuli
Kulila
Kuna
Kungka
Kumpinnyangka
Lirru
Lirri
Marla
Marlanypa
Mara
Mirra
Mimili
Mingkiri
Minyma
Kami
Murntu
Murrukatinyi
Murrukati
Ngali
Ngurra
Nyina
Nyarratja
Ngaarrmankunytja
Nyangatja
Nyarrinyi
Ngaranyi
Nyarrka
Nyaru
Nyirtayirra
Nyirri
Nyulkulpayi
Pakarni
Pakurringu
Pirni
Tjurta
Pirrila
Pirrintja
Pula
Irti
Pula
Tjirlpi
Punganyi
Punkarni
Rawa
Irriti
Tjukurrpa
Ringamila
Rapita
Kuula
Tarltu
Taarnu
Tili
Tjaa
Tjaarpa
Tjarla
Tjarli
Tjiki
Uwa
Wiya
Kurra
Munga
Mungarrtji
Tjirtu
Tjitji

Tjituru-tjituru
Tjunanyi
Tjuni
Tjunitjarra
Pika
Pikatjarra
Tjurlpu
Ulanyi
ungama
wakala
wala
walyku
waltja
yarta
yunpa
yaaltji
wiru
witini

Appendix 2; Frequency of Syllable by Type

Taken from the wordlist at Appendix 1; 100 words were broken into their syllables. This total number was then analysed for a comparison of frequency of each syllable type.

Syllable Type	Number	Comments
V	12 (4.49%)	rare
VC	3(1.12%)	Extremely rare
CV	220 (82.4 %)	Most common
CVC	32 (11.99%)	Not as common as a CV
Totals	**267**	

Appendix 3; Frequency of CVC Penultimate Syllables

Example Type	Number	Comments
Lexeme without suffixation	3	Nominals: tjukurrpa; mungarrtji; marlanypa
Lexeme with suffixation	7	Nominal+ VERB+NOM Verb+tense Verb+tense+NOM Verb+NOM
Total	**10**	