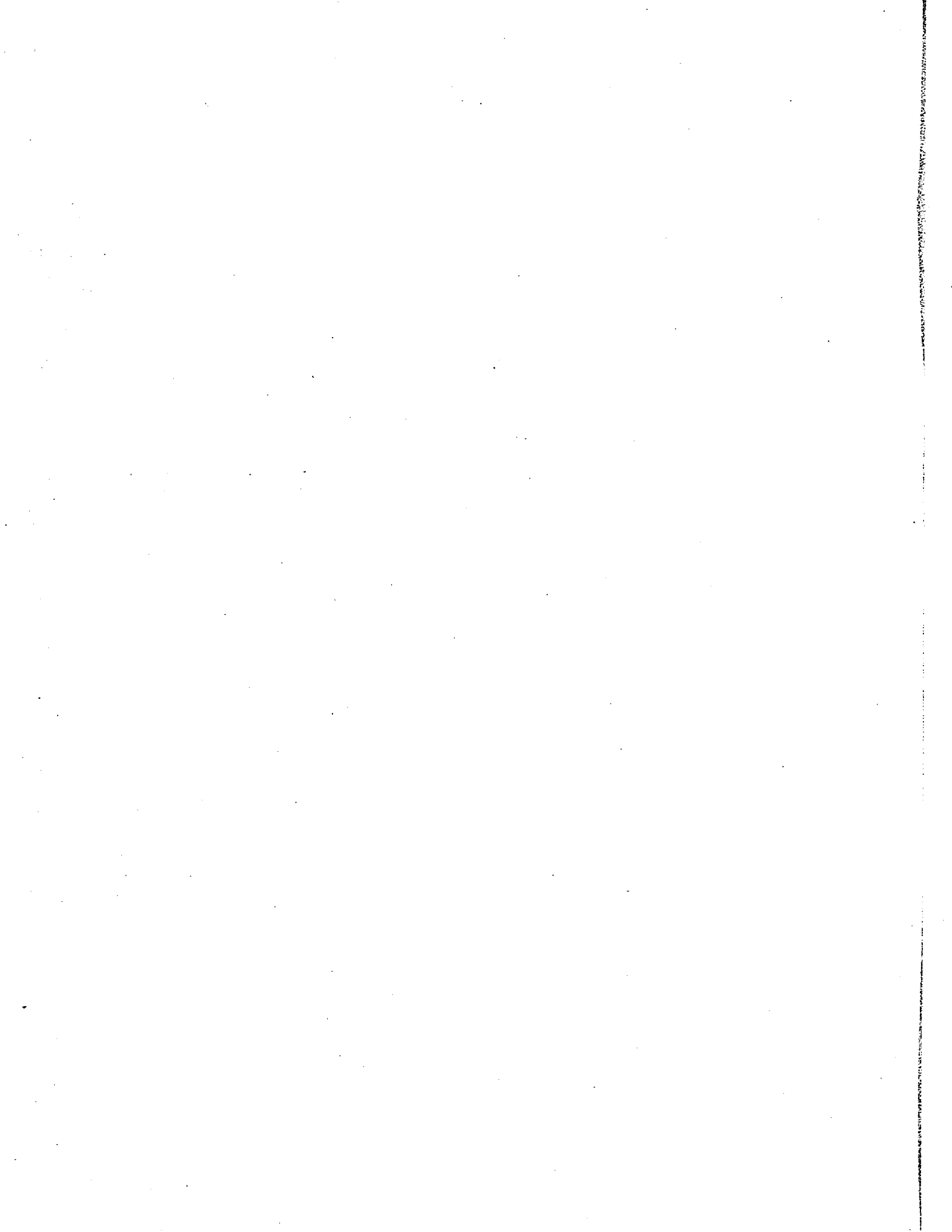


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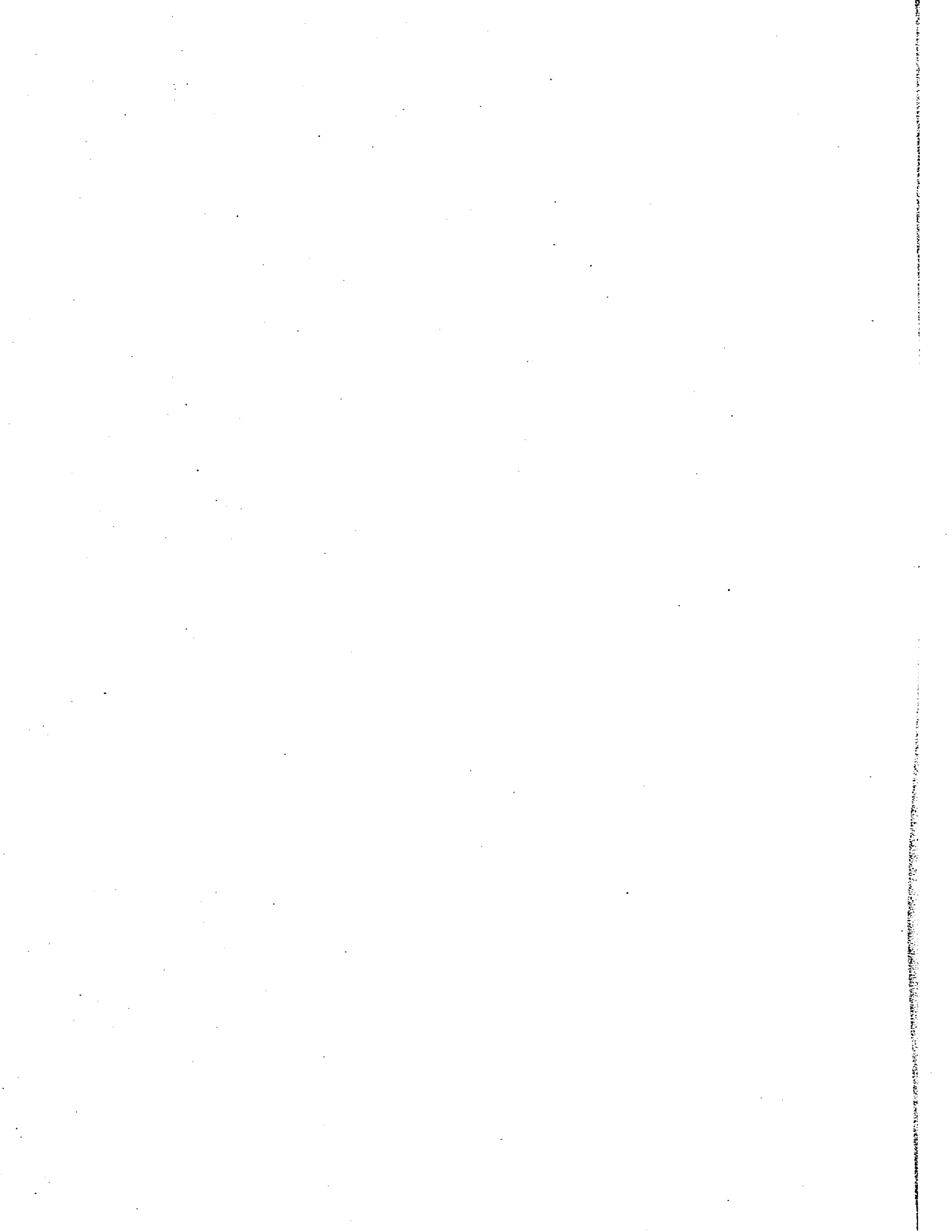
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NYAJUMATA GRAMMAR

by
Geoffrey N. O'Grady

Submitted to
the faculty of the Graduate School
in partial fulfillment of
the requirements for the degree,
Doctor of Philosophy,
in the Department of Linguistics,
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1963



Accepted by the faculty of the Graduate School,
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NYAJUMATA GRAMMAR

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PREFACE

The Nyayumata language¹, of which a structuralization is presented in the following chapters, is spoken by approximately 700 aborigines in the northwest of Western Australia². At the time of the arrival of Anglo-Australian settlers at the mouth of the de Grey River in 1864, the Nyayumata tribal territory extended along the coast for 150 miles, and reached from 60 to 80 miles into the Great Sandy Desert (see Map I). By 1900, the more valuable areas in the Northwest were being devoted to the sheep and cattle industries, in which increasing numbers of aborigines — including Nyayumata — were employed.

In 1946 most of the inland Nyayumata (ŋulipaṭu), working on sheep stations in the Warrawagine area, joined with members of tribes to their south and west in a strike against their employers, and in due course established a mining coöperative³. Nowadays, the quest for minerals (notably manganese, tantalite, gold, tin, copper, columbite, beryl, and scheelite) and pearlshell takes the ŋulipaṭu far afield throughout the Northwest, though for much of the time most of them are to be found in the vicinity of Port Hedland. The more conservative coastal Nyayumata (Wanyaḷi) have meanwhile tended to continue in their rôles of employees of Pardoo, Wallal, and Mandora sheep stations. Those who until 1957 worked on Anna Plains cattle station have moved either to the Roman Catholic Mission at La Grange, or to the towns of Broome and Port Hedland.

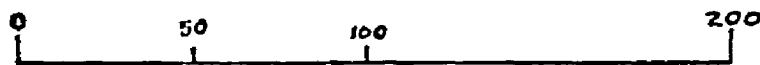
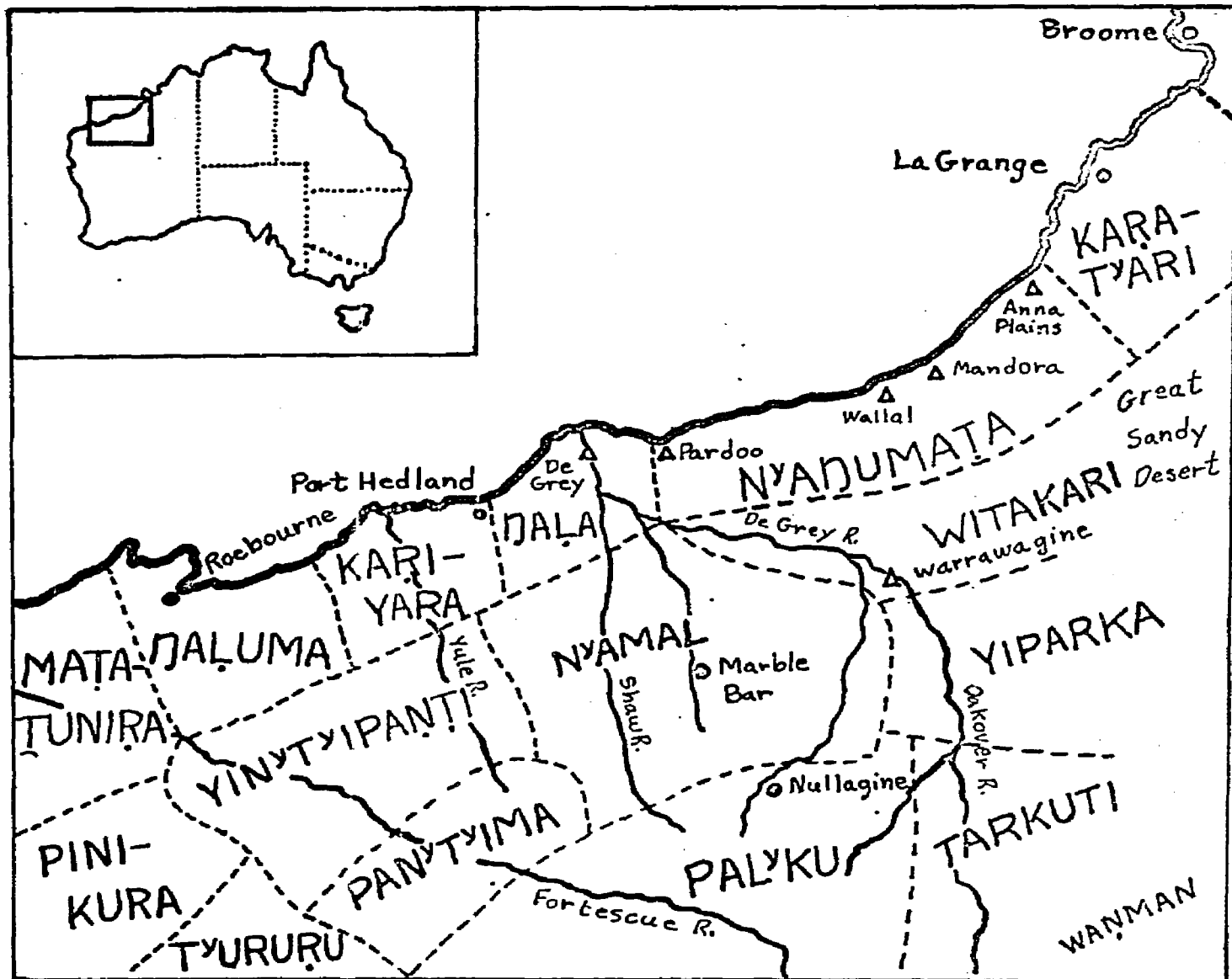
As of 1960, despite some intermingling of Nyaṅumaṭa from various geographical points, it was possible to distinguish Ḇulipaṭu and WanyaḆi as dialects in terms of differences on the lexical, morphophonemic, and morpho-syntactic levels⁴. These differences fall far short of being sufficient for the impairment of mutual intelligibility. Moreover, the Nyaṅumaṭa share in an Australia-wide aboriginal predilection for other-language-learning (and, concomitantly, other-dialect-learning). Douglas reports (1955) that at Ooldea, in western South Australia, "visitors from other dialect areas were frequently passing through the district, and it was noted that informants modified their speech according to their temporary associations with members of other dialect areas". Conversely also, a polite WanyaḆi visitor to the Ḇulipaṭu will, within a matter of days, replace speech-forms unique to his own dialect with the corresponding forms used by his hosts (e.g. by using Ḇulipaṭu miṭawa in place of WanyaḆi Ḇal^vun woman). Within WanyaḆi, Anna Plains speech (WanyaḆi₂) differs in minor details from that of Mandora, Wallal and Pardoo (WanyaḆi₁), particularly in its morphophonemics⁵.

All Nyaṅumaṭa can at least express everyday needs in English. In general, Ḇulipaṭu have greater fluency in the language than WanyaḆi. Probably at least 90% of Nyaṅumaṭa speak English with a readily discernible aboriginal 'accent'⁶.

Nyaṅumaṭa and its northeastern neighbor, Garadjeri⁷, sharing as cognate 57% of the 100 items of a basic vocabulary test list, form the Marṅu subgroup⁸ of the Western Desert-Mudbura group of the Pama-Nyūṅan phyllic family⁹, one of well over a score of phyllic families existing within Australia, according to lexicostatistic criteria¹⁰. In Map II, the relationship between the Wanyali dialect of Nyaṅumaṭa and other languages spoken in the western third of Australia is indicated in terms of percentages of putative cognates appearing in the test list. If projected into Eastern Australia, the percentage isoglosses would, with few exceptions, reflect decrease in cognate densities with increasing geographical distance. A comparison between Nyaṅumaṭa and Umpila (spoken in northern Cape York Peninsula) yields, for example, a cognate density of only 8%, though the two languages are within the same phyllic family, being linked by chains of far more closely related pairs of languages stretching right across Australia.

Neither of the Nyaṅumaṭa dialects has been extensively described. The close relationship between Garadjeri and Nyaṅumaṭa was noted in Capell 1940, and a Garadjeri Grammar appears in Capell 1962. H. and G. Petri carried out anthropological and linguistic research during 1954 and 1960, principally with Anna Plains informants. Between 1959 and 1961, J. and K. Wilson conducted anthropological research among Nyaṅumaṭa living

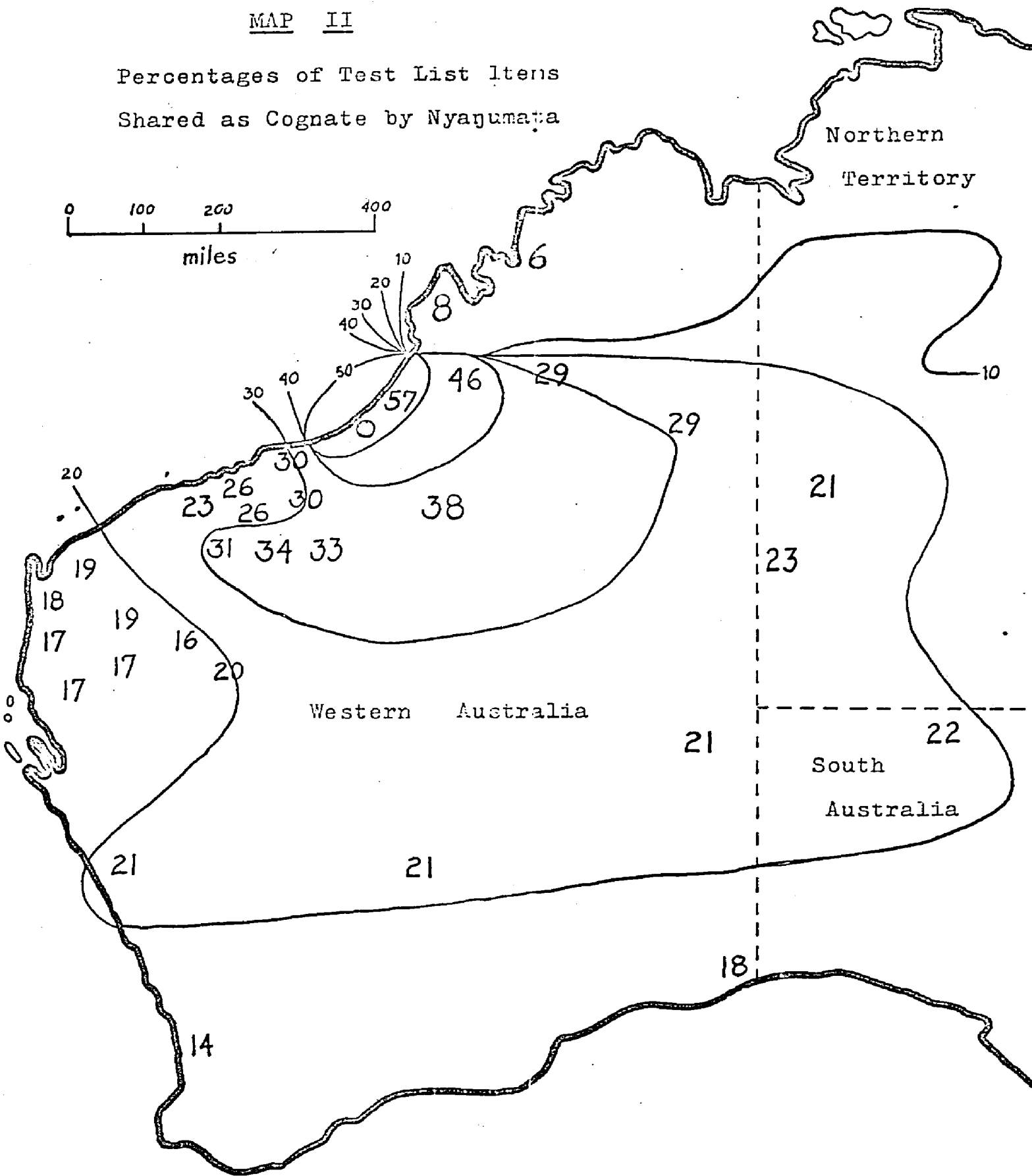
MAP I



miles

MAP II

Percentages of Test List Items
Shared as Cognate by Nyagumapa



near Port Hedland and Roebourne. L. Penrice, of the United Aborigines Mission, spent part of 1960 and 1961 on a linguistic investigation of Nyaṅumaṭa as spoken at Port Hedland.

This grammar is based on fieldwork done in two stages. The Wanyaḷi₁ corpus was collected at Wallal between 1949 and 1955. It consists of (a) about 2,000 spontaneous utterances made by Nyaṅumaṭa in the course of their daily activities, and transcribed with a view to obtaining as diverse a sample of casual speech as possible ; (b) paradigms elicited as ancillary to (a) ; (c) translations of short English sentences ; (d) tape-recorded texts. The ŋulipaṭu corpus was collected in March-April 1960 at Roebourne, and contains lexical lists, short utterances, textlets elicited by means of pictures, and running texts, all recorded on tape. Recordings subsequently provided by J. Wilson bring the tape-recorded part of the corpus to a total of 8 hours. Five principal informants for each of Wanyaḷi₁ and ŋulipaṭu provided a sample of idiolects of younger and older generations of both sexes.

The present structuralization is done under four chapter headings : I (Phonology), II (Morphophonemics), III (Morphology), and IV (Syntax). Chapter I, though exemplified only from Wanyaḷi₁, comprises a unified phonological study of Nyaṅumaṭa, since comparison between Wanyaḷi₁ and ŋulipaṭu reveals no systematic phonological differences between the two dialects. Chapters II - IV are based on analysis of the Wanyaḷi₁ corpus.

Chapters I - III reflect an attempt at exhaustiveness — at least for casual speech — while Chapter IV, which is formulated on the transformational model, contains a preliminary outline of the sentence structure.

NOTES

1. Phonemicized as /n^yaŋumaɬa/, varying freely to /n^yaŋamuɬu/ in some Wanyali idiolects. Other spellings include Njangumada (Capell 1940), 'Naŋamada (Tindale 1940), Njangomada (Petri 1956), Njaŋumada (O'Grady 1957), Nyangamada (Stuart 1959), Njangamada (Greenway 1960), and Njangumada (McCarthy 1961).

2. I owe this figure to J. Wilson (personal communication, 3/20/1963). There are possibly 500 who speak Nyaŋumata as their mother tongue, and a further 200 members of less prestigious and detribalized neighboring groups who speak it as an acquired language.

3. See Stuart 1959.

4. The two dialects share 94% of their basic vocabularies. Morphophonemically, vowel assimilation in suffixes is more general in Wanyali than in ŋulipaɬu. In verb morphology, the category of 3rd singular actor is overtly marked by suffix (312) in certain sequences in Wanyali, but not in ŋulipaɬu. Examples :

<u>Wanyali</u> ₁	<u>ŋulipaɬu</u>	<u>English</u>
puŋkin ^y iri	puŋkan ^y i	<u>he fell down</u>
ŋalpimiri	ŋalpama	<u>he was about to enter</u>
yaŋalŋa	yaŋal	<u>he went long ago</u>
yankulumuɬu	yankulumana	<u>I will go</u>

5. Differences occur in vowel selection in certain suffix sequences and in the final vowels of some verb stems. I am indebted to H. Petri for the Wanyaḷi₂ forms appearing in the following comparison :

<u>Wanyaḷi₁</u>	<u>Wanyaḷi₂</u>	<u>English</u>
puḡkin ^y iṅi	puḡkan ^y aṅi	<u>I fell down</u>
puḡkin ^y iri	puḡkan ^y ara	<u>he fell down</u>
pit ^y uṅuṅu	pit ^y uṅaṅi	<u>I'm bruised</u>
karin ^y iṅa	karin ^y aṅa	<u>I want it</u>
munu karin ^y iḡiṅa	munu karin ^y aḡaṅa	<u>I don't want it</u>
muntu wuṅmin ^y iri kuṭat ^y iri	muntu wuṅman ^y ara kuṭat ^y ara	<u>the spear broke</u> <u>in two</u>

There are also minor lexical differences : in Wanyaḷi₂ there is a small number of Indonesian loans which are not in active use in Wanyaḷi₁, e.g. kula sugar.

6. In the idiolects of some older, more conservative speakers (especially among Wanyaḷi₁), this 'accent' is characterized by (a) neutralization of fortis/lenis and stop/fricative contrasts; (b) reduction of the vowel system to 2(FB) over N, i.e. /i a u/ ; (c) reduction of most consonant clusters ; (d) addition, in some environments, of vowels in final position. Hence, for such speakers, English /p b f v/ merge to /p/, and /č ž ʧ ʒ s z š ž/ merge to /t^y/, both in their idiolects as speakers of English, and in English loans in their Nyagumaṭa idiolects. Examples : payipu five ; t^yikit^yi six ; kaḷat^yu mirror (< glass) ; puRa^ypatu - puRa^ypatu

breakfast. English something is t^yampiŋ for most older speakers (or t^yantiŋ, in the case of one n^yaŋumaŋized Wanman), and [sámsuŋ] for younger speakers.

7. Phonemically /kaRa^yari/. See Capell 1940, 1949, and 1962.

8. In both languages marŋu is person, aborigine.

9. See Voegelin et al. 1963.

10. I define members of an Australian linguistic subgroup as follows : (a) No member of a subgroup shares more than 50% of its basic vocabulary with any language outside the subgroup ; (b) every member of a subgroup shares more than 50% of its basic vocabulary with at least one other member of the same subgroup.

Members of groups and phylic families are defined in an analogous manner — by substitution in the above definition of the words 'group' and 'phylic family' for 'subgroup', and correspondingly, the figures '25%' and '15%' for '50%'.

For other classifications of Australian languages, see Schmidt 1919a, Kroeber 1923, and Capell 1940, 1942, 1956, and 1962.

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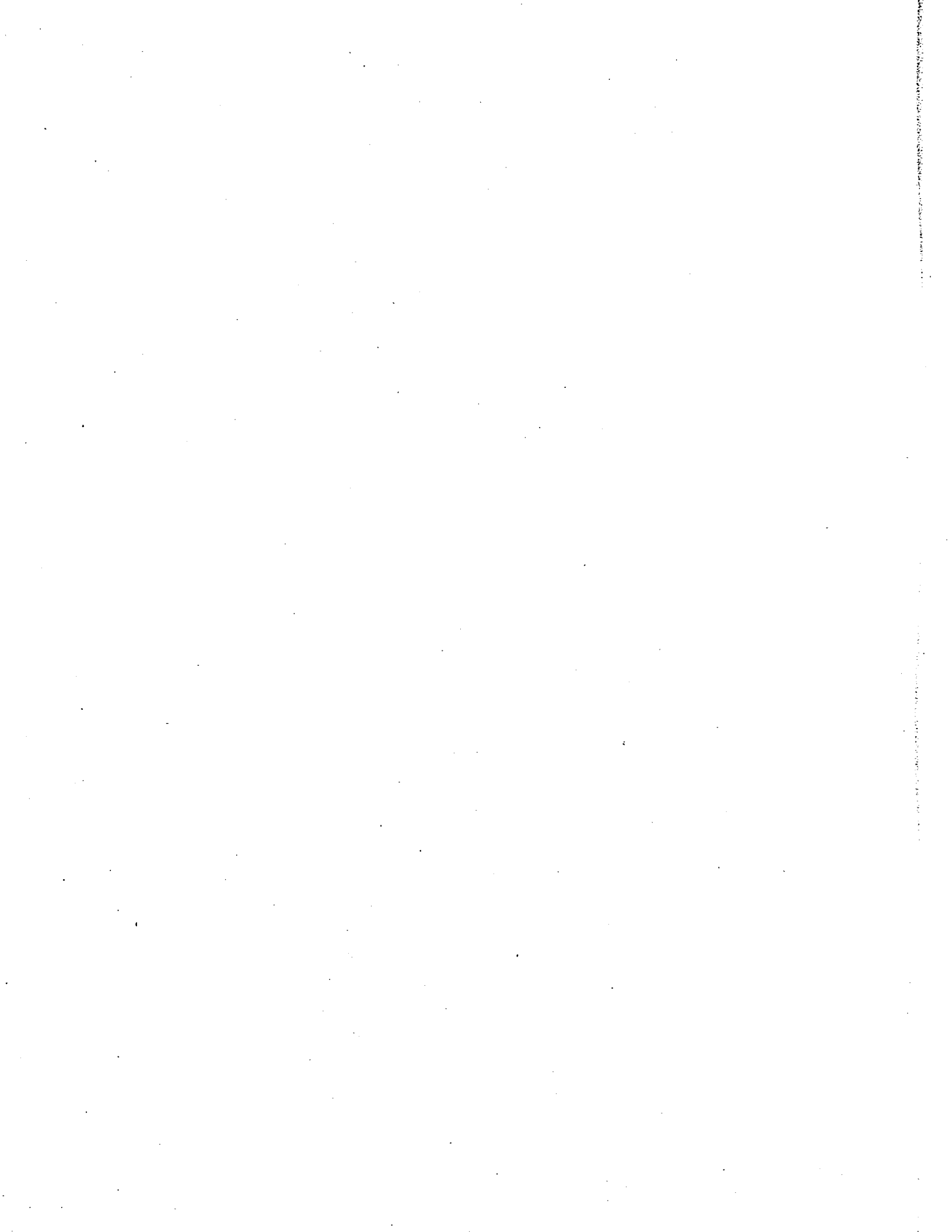
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CHAPTER ONE

PHONOLOGY

1.1. Phoneme inventory

Nyaṇumaṭa phonemes include seventeen consonants, three vowels (combinable with a low-yield Series Generating Component (SGC) of length), and four junctures.

Five matching linear distinctions are made among stops and nasals, viz. /p m/ at position 1 (bilabial); /t n/ at position 2 (apico-alveolar); /ṭ ṇ/ at position 2 (apico-domal); /t^y n^y/ at position 3 (lamino-alveolar); /k ŋ/ at position 4 (dorso-velar). Three laterals /l ɭ ḷ/ match stops and nasals at positions 2, 2, and 3. One trill or flap /r/ matches at position 2. Three glides /w R y/ match at positions 1, 2, and 3.

The vowel system comprises two high vowels /i u/ and a low vowel /a/, i.e. (FB) over N, combinable with an SGC of length, yielding six syllabics /i a u i· a· u·/. Junctures are sentence-final # and ↑, and non-sentence-final // and +.

1.2. Attestation of inventory

1.2.1. Examples of consonantal contrasts occurring, wherever possible, within the frame #CV—V#, are cited below.

1.2.1.1. Contrasts in point of articulation.

Stops : pipi mother, MoSi : piti coolamin
(wooden container) : pit^yi hole in the ground : pit^yi
shallow 'hide' dug in sand by lizards : piki Hakea
cunninghamii (shrub sp.).

Nasals : t^yama silent, taciturn : t^yana they
pl : t^yana 1. saliva, foam, sap 2. oyster, barnacle ;
mama elder brother : ma^{na} bottom, as of bucket : ma^{na}
water beetle sp. ; kama call (n.) : ka^{na} hand it over! :
ka^ya he carried it therefore ; pu^{na} whitegum : pu^{na}
ax handle ; paⁿⁱ 1. eye 2. seed 3. drop of moisture :
pa^yi wrist, forearm ; mi^ya^{ri} Zebra Finch : mi^a^{ri}
Mountain Devil (lizard sp.).

Laterals : ga^{li} we du inclusive : ga^{li} diarrhea :
ga^yi neck.

Trill and glides : t^yawa mouth : t^ya^{ra} 1. pouch
of kangaroo 2. handle of shield : t^yaya leopard ray ;
ka^{ra} thus : ka^{wa} carry it! : ka^{ra} west ; ma^{ra} take it! :
ma^{ya} European-type house.

1.2.1.2. Contrasts in manner of articulation.

Position 1 : ka^{pa} copper : ka^{ma} call (n.) : ka^{wa}
carry it!

Position 2 : t^yitu Straw-necked Ibis : t^yinu

slow ; kutu the deceased : kulu lost : kuru quill of porcupine ; gani what? : gali we du incl ; winu thirsty : wiru wing.

Position 2 : kaṭa sleep(n.) : kaṇa hand it over!
: kaRa west ; maṇa bottom, as of bucket : maḷa ant-hill : maRa 1. fire saw 2. inadvertently ; piṭi hole in the ground : piḷi hole not in the ground.

Position 3 : paṭ^yi split stick (as used in making fire) : paṇ^yi wrist, forearm : paṇi ideophone of distant shouting ; kaṭ^ya far : kaṇ^ya he carried it therefore : kaḷ^ya out of the way! ; puḷ^ya 1. malevolent spirit 2. magical, clever : puṇa dense, high spinifex.

Position 4 : puḷa putrid, putrescence : puṇa fold of skin.

1.2.2. Contrasts between short vowels are attested in such frames as #C—CV# and #CVC—#, in which the following minimal triplets occur : pit^yu river, creek : paṭ^yu sorrowful : puṭ^yu if ; kaṚi 1. bitter, of taste
2. alcoholic drink : kaRa west : kaRu short wooden barbed spear.

Long vowels, because of their rarity, are attestable only by contrasts occurring in analogous environments. Examples are : t^yirku 1. thorn 2. mesquite tree :

wi·rku for everyone ; wakulu rockhole : wa·kura
crow ; ʈurkuʈurku round : ʈu·rkuru roar, as of engine.

Examples of contrasts between long vowels are available only for analogous environments, e.g. wi·r
all : Ra·r roar, as of surf : tu·r roar, as of engine.

1.2.3. Junctural contrasts are exemplified below.

1.2.3.1. Sentence-final. kulpulumun# you will return :
kulpulumun↑ will you return?

1.2.3.2. Non-sentence-final. yakala+mana# leave the
bottom (of receptacle)! : yakalamaña# I'll leave him ;
puŋkin^yini // t^yana kulpin^yiyi# I fell down and they came
back : puŋkin^yinit^yanaku# I fell on them ; yakala+
wurku# leave the sick person alone! : yakala// wurku-
t^yariyinpili# leave it, you might get sick!

1.3. Allophony

1.3.0. Statements concerning the distribution of phones are made, where necessary, within two broad frames of reference — slow tempo (as occurring in citation forms or the enumeration of lists), and fast tempo. The latter is distinguished from the former by (a) a rate of delivery, for many speakers, ranging from 20 to 30 phonemes per second in bursts (see 1.8.) ; (b) relatively little lip movement ; (c) the zeroing out in certain environments of vowel phonemes present in speech of slow tempo.

In order to facilitate the exposition of allophony

and interphonemic specification, we posit for Nyanumata the syllable, containing either one short or one long vowel, and having two canonical shapes : CV and CVC. Examples are : CV [mí.mu.mu] brain ; [wá.gu.fʌ] crow. CVC [málʲ.ɓʌŋ] lack of desire, non-desirous ; [tám.bu.Ru.dám.bu.RU] clumsy, fumbling.

1.3.1. Consonant Allophones

1.3.1.0. Consonant phonemes other than /tʲ/ do not exhibit appreciable allophonic variation in position of articulation. All consonants are produced with egressive lung air. All consonants vary allophonically in manner of articulation.

1.3.1.1. The following six sets of environments are relevant to the prediction of consonant allophones :

- A. (a) Contour-initial, (b) following a stop consonant.
- B. (a) Contour-final, (b) syllable-final other than B(a).
- C. Following a homorganic nasal, but not in the last two syllables of the contour preceding silence.
- D. (a) In utterance-final syllable, (b) In utterance-penultimate syllable (following a homorganic nasal in both cases).
- E. Environments other than ultimate and penultimate syllables before silence, and further specified as (a) following + juncture, (b) second member of a consonant cluster, the first member of which is not a homorganic nasal, (c) other intervocalic environments.

F. In instances of (a) the ultimate, or (b) the penultimate syllable before silence, which are not included within environments B or D.

1.3.1.2. In the final syllable before silence, the occurrence of phonetic voicelessness — both for consonants and vowels — predominates statistically over phonetic voicing. The converse holds for utterance-penultimate syllables. Three separate factors militate in favor of the occurrence of phonetic voicelessness versus voicing in these environments : (1) fast tempo ; (2) occurrence of a large number of syllables in the contour ; (3) termination of contour in #, rather than in ↑.

1.3.1.3. Stop allophones are characteristically lenis and unaspirated, irrespective of environment.

In environment A(a) preceding /u/, /p/ is [p], varying occasionally to [pʰ] or [p̚] : /puRuṭi/ [p̚uRuṭi] ~ [pʰuRuṭi] ~ [p̚uRuṭi] for no reason at all. Elsewhere in environments A, stops have voiceless released stop allophones : /part^yala/ [p̚áɾə^yʌlʌ] look! ; /ṭara/ [ṭáɾʌ] seagull ; /t^yayu/ [t^yáyʌ] seaweed, waterweed ; /kulpin^yali/ [k̚ʌlɓin^yʌɪ] we du incl returned ; /t^yutt^yuṭpili/ [t^yút^yʌt^yʌt^yʌp̚ɪɪ] shake it! (as salt shaker) ; /ṭirpṭirp/ [ṭíɾp̚ʌt̚ɾp̚] type of tree carving ; /kaṭkuṇu/ [k̚át^ykuṇʌ] at the river gum.

In environments B, stops have voiceless unreleased stop allophones : /Raɪ^yup/ [R̚áɪ^yʌp̚] ideophone of sudden

burst of flame ; /waʈ/ [wátʰ] sticky ; /pilatʰ/ [pílaⁱtʰ] ideophone of flash of light ; /tʰuptʰup+ɲaɲara/ [tʰúpʰtʰúpʰɲáɲáʃA] he ate the stew ; /ʈapmala/ [ʈápʰmàlA] catch it! (as ball) ; /waʈmaɲapinti/ [wátʰmaɲáʈìntI] tire patch ; /warpatʰwarpatʰkaramaɲaɲaɲu/ [wáʃʰáⁱtʰwáʃʰáⁱtʰkAʃA^màɲaɲáɲU] I waved to you.

In environment C, stops have voiced stop allophones : /ɲumpakaʈi/ [ɲúm^bá^gàʈI] towards the face ; /wantuluminʰi/ [wón^du^lu^mìNʰI] we pl incl will stay ; /waɲʈiɲulu/ [wáɲ^dì^ɲùʈU] by the tail ; /tʰanʰtʰapinti/ [tʰéⁿdʰá^ʰàⁱntI] thermometer ; /tʰuɲkaɲulu/ [tʰú^ɲgáɲùʈU] from the ground.

In environment D, stops have voiceless released stop allophones in free variation with voiced stop allophones (as per 1.3.1.2.) : /mampu/ [mám^bu] ~ [mámpU] hair of head ; /tʰuntu/ [tʰúndu] ~ [tʰú^{nt}U] grass sp. formerly used in netmaking ; /tʰuɲtu/ [tʰúndu] ~ [tʰú^{nt}U] heap of sand ; /kunʰtʰi/ [kún^dʰi] ~ [kún^tʰI] ready, prepared ; /paɲka/ [páɲ^gA] ~ [páɲkA] half of carcass cut lengthwise.

In environments E, the non-apical stops /p tʰ k/ have voiced stop allophones in free variation with voiced fricative allophones, but the apical stops /t ʈ/ have only voiced stop allophones : /paʈanʰtʰu+papiɲi+tʰurkaɲili/ [pá^daⁱnʰdʰu^báb^ɲidʰú^gáɲìʈI] ~ [pá^daⁱnʰdʰu^báb^ɲidʰú^gáɲìʈI] the child stepped on a Varanus giganteus (goanna sp.) ; /minpilipulu/ [mín^bɔ^lɔ^bùʈU] ~ [mín^ɲɔ^lɔ^bùʈU] you du drink

it! ; /katalu+yuwan^ya/ [káðalvúwAN^yA] give me some
more! ; /t^yaʔaka/ [t^yáðakA] snipe ; /nat^yukaʔi/
 [nád^yv̥gàʔI] ~ [nád^yv̥gàʔI] towards me ; /pul^yirkimili/
 [púl^y(f̥gimìʔI] ~ [púl^y(f̥gimìʔI] of the Red-winged
Parrot.

In environments F, there is free variation in voicing (for /t t̥/), and in both voicing and degree of fricativization (for /p t^y k/), as per 1.3.1.2. : /yuʔa/ [yúða] ~ [yútA] fish ; /wat^yapi/ [wád^yʌbɿ] ~ [wád^yʌbɿ] ~ [wád^yʌpI] ~ [wád^yʌφI] grasshopper ; /n^yuraku/ [n^yúřʌgu] ~ [n^yúřʌgu] ~ [n^yúřʌkU] ~ [n^yúřʌxU] ~ [n^yúřʌx^w] for you pl.

In one Wanyałi₁ idiolect, that of Kuʔu, a 35-year-old male speaker, the lamino-alveolar allophones of /t^y/ are in free variation with either [s] or [ʃ] — the former before /a u/ and the latter before /i/ : /t^yit^yila/ [t^yíd^yɿlɿ] ~ [ʃíʃɿlɿ] (a place name) ; /t^yaputu/ [t^yáɸvtU] ~ [sáɸvtU] poor fellow! ; /t^yuru/ [t^yúřU] ~ [súřU] snake.

1.3.1.4. In environments F, nasal consonants have voiced and voiceless allophones in free variation, as per 1.3.1.2. Further, the phonemic sequences /ma ɲa/ before silence vary freely between [ma ɲa], [MA ɲA], and [m[?] ɲ[?]] ; the sequence /ɲu/ before silence is [ɲv] ~ [ɲU] ~ [ɲw[?]] : /palama/ [pálAMA] ~ [pálAMA] ~ [pálAm[?]] that one, near ; /t^yina/ [t^yɿnɿ] ~ [t^yɿNA] foot ; /yirilkunu/ [yířɿlgùnv] ~ [yířɿlgùNU] let me see it! ;

/kanka+marin^yi/ [kángamářin^yɿ] ~ [kángamářin^yI] ~
 [kángamářin^y] raise me! ; /punkin^yaŋu/ [púŋgin^yλŋu] ~
 [púŋgin^yλŋU] ~ [púŋgin^yλŋw?] it fell on you.

In other environments in which nasals occur, they have voiced allophones : /maɭu/ [máɭu] many ; /yantanaɭi/ [yándaŋaɭi] we du incl speared it ; /ŋaɭuɭu/ [ŋáɭuɭU] nuts of the t^yukuɭan^y tree ; /n^yaru/ [n^yářu] laughter ; /ŋaŋki/ [ŋáŋki] cicada.

1.3.1.5. The liquids /l ɭ l^y r/ and glides /w R y/ when occurring in environments F — and the liquids also in environment B(a) — have voiced and voiceless allophones in free variation, as per 1.3.1.2. In addition, /r/ is a flap [r] (varying occasionally to trill [r̄]) in environments F, and trill [r̄] in environment B(a) : /yawaɭamili/ [yówaɭamili] ~ [yówaɭamili] ~ [yówaɭamili] of the horse ; /ŋaɭu/ [ŋáɭu] ~ [ŋáɭU] belly ; /kapuRu^y/ [kábuRuⁱl^y] ~ [kábuRuⁱɿ^y] smooth, slippery ; /tⁱ.l^y/ [tⁱ.l^y] ideophone of twigs snapping underfoot ; /kal^yt^yi/ [kál^yd^yɿ] ~ [káɿ^yt^yI] white marl ; /kut^yuŋuru/ [kúá^yuŋúrv] ~ [kúá^yuŋúɾU] sea ; /t^yuRar/ [t^yúRář] ~ [t^yúRář] sea ; /ŋalpuwa/ [ŋálbuwa] ~ [ŋálbuwA] let him enter therefore ; /kapaRa/ [kábaRA] ~ [kábaRA] 1. yandying (winnowing) dish 2. ship, landing barge ; /kaɭaya/ [káleyA] ~ [káleyA] emu.

In other environments in which liquids and glides occur, they have voiced allophones, with /r/ varying between flap and trill as in environments F : /ŋalimili/ [ŋálimili] of us du incl ; /kaɭiraŋu/ [káɭiřaŋU]

boomerangs ; /mil^yamuku/ [míl^yAm^ukU] initiate with
pierced nasal septum ; /lirapitan/ [lír^hə̀l̩^hə̀n] ~
 [lír^hə̀l̩^hə̀n] red-tailed black cockatoo ; /waRa/ [w^hə̀R^hə̀]
rag ; /yara/ [yá^hə̀] go away!

1.3.1.6. An alternate possible phonemic solution would entail a reduction in the consonant inventory from 17 to 9 members. This could be effected (a) by setting up the glide phones [w R y] (and their voiceless counterparts) as allophones of the vowel phonemes /u a i/ respectively (because of the complementarity in distribution, no violation of phonemic theory would be involved) ; (b) the phones of position 2 (other than [R R̥]) could be phonemicized as clusters of /r/ + /t n l/, since such clusters do not otherwise occur (another alternative would entail retaining /R/ and phonemicizing [t̥ n̥ l̥] as clusters /Rt Rn Rl/). A further reduction to 8 consonants could be brought about by phonemicizing phones of position 3 as clusters of /t n l/ + /i/, but for the occurrence of contrasts such as that between [-n^y] and [-ni]. Alternatively, /y/ could be retained as a phoneme, and [t^y n^y l^y] phonemicized as clusters /ty ny ly/. In terms of this analysis, the Nyanumata consonants would constitute a nine-member system /p t k m n ŋ l r y/.

We reject the above alternatives to our present analysis. Alternative (a) would leave no theoretical upper limit to the number of members in vowel clusters, e.g. /waRa+yuwaya/ you pl give him the rag! would be re-phonemicized as /uaaa+iuuaia/. The adoption of either variant of alternative (b) would imply the existence of

three-membered consonant clusters — e.g. /paŋti/ distant smoke (as phonemicized in the present analysis) would be /parnti/ or /paRnti/, depending on the alternative chosen. Furthermore, the /rt rn rl/ solution for [ṭ ṇ ḷ] would be unjustifiable because of the articulatory difference between [r] and [ṭ ṇ ḷ] on the one hand, and [ṭ ṇ ḷ] on the other. The /Rt Rn Rl/ solution would be less undesirable from this point of view, but would produce asymmetry in the otherwise highly symmetrical consonant inventory and intramorphemic consonant cluster specification (see 1.1. and 1.6.4.). The interpretation of the phones [ṭ^y ṇ^y ḷ^y] as clusters /ty ny ly/ is jeopardized by the occurrence in reduplications and across morpheme boundaries of isolated instances of sequences such as [ny ly], which could only then be distinguished from [ṇ^y ḷ^y] by the positing of an additional and functionally almost useless juncture such as /./ (syllable boundary).

1.3.1.7. The inventory of 54 consonant phones discretized from the corpus is charted below. Groups of phones which are in complementary distribution or free variation (and, if in free variation in a given environment, not contrasting elsewhere) — i.e. phones which are allophones of a single phoneme — are grouped within closed ellipses. Consonant phones which are assignable as junctural components are indicated by semicircles open to the right. Complex phones or phone sequences which are the fast-tempo analogs of slow-tempo CV phonetic sequences (structuralized herein as /CV/) are indicated by semicircles opening below.

SUMMARY CHART OF CONSONANT PHONES AND THEIR DISTRIBUTION

1	1 ⁺	2	2 ⁺	2̣	3	3 ⁺	4	4 ⁰	5
<p>p</p> <p>pʰ</p> <p>b</p> <p>ɸ</p> <p>ɓ</p>	<p>t</p> <p>d</p>	<p>ṭ</p> <p>ṭʰ</p> <p>ḍ</p>	<p>s</p> <p>ʃ</p>	<p>tʲ</p> <p>tʲʰ</p> <p>dʲ</p> <p>ɬʲ</p> <p>ɗʲ</p>	<p>ʃ</p> <p>ʃʰ</p> <p>ʒʲ</p> <p>ʒʲʰ</p>	<p>k</p> <p>g</p> <p>x</p> <p>ɬ</p>	<p>xʷ</p>	<p>h</p>	<p>ʔ</p>
<p>m</p> <p>M</p> <p>mʔ</p>	<p>n</p> <p>N</p>	<p>ṇ</p> <p>Ṇ</p>		<p>nʲ</p> <p>Nʲ</p>	<p>ŋ</p> <p>ŋʰ</p>	<p>ŋʲ</p> <p>ŋʲʰ</p>	<p>ŋʷ</p>		
	<p>l</p> <p>ɭ</p>	<p>ḷ</p> <p>ɭ̣</p>		<p>lʲ</p> <p>ɭʲ</p>					
	<p>ʕ</p> <p>ʕʰ</p> <p>ʕʲ</p> <p>ʕʲʰ</p>								
<p>w</p> <p>ʋ</p>				<p>ʀ</p> <p>ʀ̣</p>	<p>y</p> <p>ʏ</p>				

1.3.2. Vowel Allophones

1.3.2.0. The high vowels /i u/ are unrounded and rounded respectively, and together oppose in tongue-height the low unrounded /a/. All three short vowels have predominantly lax allophones. Lip movement during phonation is minimal. Vowel allophones correlate partly with the position of the vowel within the word or contour (see under 1.3.3.0.), partly with neighboring consonants. As indicated in 1.3.1.3., vowels occurring in the syllable before silence (or — less commonly — in the penultimate syllable before silence) are potentially voiceless. The high vowels have voiceless allophones in these environments more frequently than does /a/. All vowels have slightly nasalized allophones when adjacent to nasal consonants.

1.3.2.1. Of the three vowels, /i/ has the least allophonic range : it is relatively tense and high [i] when preceding consonants of position 3, or when combined with the SGC of length : /t^yil^yt^yil^y/ [t^yí^yl^yd^yi^yl^y] goose-flesh ; /wi·r/ [wí·ʁ] completely, all. Retroflexed and centered [ɨ] occurs before consonants of position 2 : /pɨna/ [pí·nɨ] bardie, witchetty grub. A relatively low and lax allophone [ɪ] occurs in free variation with voiceless [ɪ̥] in the last two syllables before silence ; [ɪ̥] occurs elsewhere : /pipit^yi/ [p(ɨit^yɪ̥)] female plain turkey.

1.3.2.2. The rounded high vowel /u/ is high and tense [u] when combined with length : /tú·r/ [tú·ʁ] roar, as of

engine. When occurring phonetically unstressed before consonants of position 3, it varies freely between [uⁱ] and [ü] : /kalɳun^y/ [kálɳuⁱn^y] ~ [kálɳün^y] armpit ; when consonants of position 3 flank /u/ bilaterally in any position in the word, the allophone [ü] predominates : /t^yul^ypili/ [t^yúl^yɸɪɪɪ] wring it out! Retroflexed and centered [ʊ] occurs before consonants of position 2 : /putul^y/ [púɸüɪɪ] stiff, as of neck. [ʊ] and [U] (or, in some idiolects, [ʊ ~ ɔ] and [U ~ ɔ]) occur in free variation in the last two syllables before silence, and correspondingly, [ʊ] or [ʊ ~ ɔ] occur elsewhere: /yukuru/ [yúɸvũv] ~ [yóɸɔɸɔ] ~ [yúɸvũU] ~ [yóɸɔũU] (or, if terminating a lengthy contour, [...yúɸvũU]) dog.

1.3.2.3. The low unrounded vowel /a/ has a backed allophone [ɔ] when preceding /w/, or when following /w/ and preceding a consonant of position 4 ; elsewhere following /w/, /a/ is [a ~ ɔ] : /t^yawa/ [t^yɔwɔ] mouth ; /waŋka/ [wɔŋgɔ] near ; /wantiyi/ [wándiyɪ] ~ [wándiyɪ] stay! When occurring phonetically unstressed before /t^y n^y l^y/, /a/ varies freely between [aⁱ] and [æ] : /paɳan^y/ [páɳaⁱn^y] ~ [páɳæ^y] child ; when consonants of position 3 flank /a/ bilaterally in any position in the word, the allophone [æ] predominates : /t^yal^yt^yal^y-kampin^yiri/ [t^yáɪ^yd^yáɪ^ygɔmbin^yɪɪɪ] it's burning splutteringly. Retroflexed and centered [ä] occurs before consonants of position 2 : /ɸaɸaɸa/ [ɸáɳáɳɔ] moon. Low central [a] occurs in phonetically stressed position, or when combined with length : /mara/ [máɸɔ]

pick it up! ; /wa·kura/ [wá·guřa] crow. In other environments not preceding /y/, /a/ has a raised allophone [ʌ], varying freely to still higher [e] in ultra-rapid delivery : /puRamara/ [púRAMařa] ~ [púRAMeře] small brown ant. When /a/ occurs phonetically unstressed before /y/, it has an allophone [e] : /kamalayalu/ [kámʌleyʌ±U] you pl call out to him! The phonetic sequence [...eyi] may precede silence, and even though it fluctuates in this environment in rapid-tempo speech to [...ei], [...eI], or [...e·], it is phonemicized as /...ayi/, partly because of the pattern pressure exerted by the predominant CV syllable shape occurring in the language, partly because the occurrence of glides in syllable-final position is elsewhere counterindicated ; also partly because the setting up of a fourth long vowel /e·/ would introduce asymmetry on several counts ; primarily, however, because any other solution would result in inordinate complication on the morphophonemic level. The positing of /e·/ would be equivalent to positing at least five different loci of asymmetry in the phonology and morphophonemics, additional to those which otherwise exist : (1) Of the long vowels, /e·/ would occur only in the last syllable of the word, while /i· a· u·/ would occur only in the first (this situation invites a phonemicization of word-final [e·] as, say, /a·/ ; but to do this would be to introduce morphophonemic complexity of the type detailed in point (5) below). (2) Of syllabics occurring immediately before silence, /i a u/ would each have voiceless allophones,

but /e•/ would not. (3) In cases where [e•] varies to [eyi], the occurrence of the phone [y], since the consonant inventory includes /y/, would necessitate the positing of morpheme alternants. (4) The occurrence of /e•/ as a constituent phoneme in stems and affixes would be peculiarly restricted : it would not occur in verb stems at all, though it would appear in about five nouns and a like number of suffixes (hence its frequency of occurrence, whether in the lexicon or in texts, would be extremely low, considering its status as a vowel).

(5) Most importantly, the introduction of /e•/ into the vowel inventory would create additional and unprecedented morphophonemic complications, e.g. the need for statements such as "When a verb stem which is in sequence with the morph -le• imperative plural (e.g. kamale• you pl call out!) is further combined with -lu 3rd singular indirect goal, the latter suffix has an alternant -yalu, while -le• has an alternant -le- " (as in kamalayalu, the alternate phonemicization of the example quoted above). As a consequence of such alternations, we would be unwillingly maneuvered into positing a fourth short vowel /e/. [In the analysis adopted herein, the phonetic sequences [-le• ~ -lei ~ -leI ~ -leyi ~ -leyI] imperative plural are phonemicized as /-layi/ and morphemicized as 211.a -la imperative and 348.1 -yi plural. The morphophonemic alternation between -yi in /kamalayi/ you pl call out! and -ya- in /kamalayalu/ you pl call out to him! is automatically accounted for

by a rule which has general application elsewhere in the morphology (see under 2.2.).

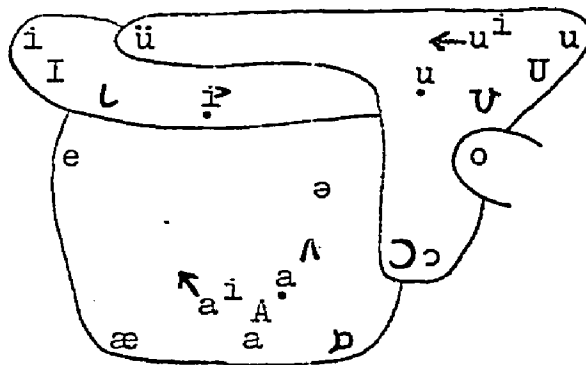
If we were to adopt the solution of phonemicizing [e·] as /ay/, the same need for otherwise unprecedented morphophonemic statements would arise.

1.3.2.4. The /ayi/ solution suggested above for [e·] implies the existence of a zero allophone, for example, of /y/. Insofar as vowel phonemes in the environment /...C_a—+C_a.../ (i.e. word-final and preceded and followed by any one consonant), as well as /i/ in the environments /...VC₃—C₃.../ (i.e. flanked bilaterally by consonants of position 3 in non-word-initial syllables) and /...n^y—#/ , are also potentially zeroed out in speech of fast tempo, the implication is that our 'phonemicization' is strictly valid only vis-a-vis slow tempo — that for fast tempo it is, in fact, mixed phonemic-morphophonemic (examples are : /nat^y t^yanparkarin^yinila↑/ (fast tempo) ~ /nat^yu t^yanparkarin^yinila↑/ (slow tempo) I'm hungry! ; /yirinaṇin^y#/ (fast tempo) ~ /yirinaṇin^yi#/ (slow tempo) he saw himself). In order to avoid the complication of citing numerous morpheme sequences in long and short forms (as would be dictated by adherence to strict phonemic theory), we adopt the convention of unifying our transcription of forms by citing them as if they were spoken in slow tempo, thus implying the potential absence of certain phonemes, as detailed above.

1.3.2.5. The 22 short oral vowel phones so far distinguished are plotted impressionistically in the chart

below and grouped according to their distribution as allophones of one of /i a u/, or — in the case of [o] — are indicated as extrasystemic and paralinguistic (see 1.4.2.2.).

IMPRESSIONISTIC CHART OF VOWEL PHONES AND THEIR DISTRIBUTION



1.3.3. Junctures

1.3.3.0. For Nyanumata, we define juncture as any contrastive phonetic criterion or bundle of phonetic criteria which make possible the breakdown of sentences into contour spans and of contour spans into words, without reference to the morphosyntax.

Word is defined phonologically as a sequence of non-junctural phonemes bounded bilaterally by any two junctures. Excluded from this definition are word fragments (identifiable as such by their non-accountability in terms of the lexicon and grammar) which occur as hesitation forms or result from slips of the tongue.

Contour span is defined as a sequence of words separated one from the other by + juncture (or alternatively, as a sequence consisting of a single word), which sequence is bounded bilaterally by any combination of //, #, or ↑.

Sentence is defined as a sequence of one or more contour spans, which sequence is bounded bilaterally by any occurrence of # or ↑, and in which the individual contours — if more than one — are separated by occurrences of //.

Though higher levels of analysis — such as those of the paragraph and discourse — are possible, no attempt is made herein to treat levels above that of the sentence.

1.3.3.1. Junctural Allophony

1.3.3.1.0. The sentence-final junctures # and ↑ are manifested in contrasting pitch patterns in the contour span immediately preceding them. The non-sentence-final junctures // and + contrast as to phonetic pause : // has pause among its characteristics ; + does not.

1.3.3.1.1. The primary characteristic of + juncture is fall in pitch in the terminal syllables of the preceding contour span, usually with concomitant voicelessness and fade-out, and occasionally with creakiness. When voicing persists, a secondary characteristic of phonetic glottalization or aspiration — shared also by ↑ juncture and hence nondistinctive — may appear : /yara#/ [yáɾA] ~ [yáɾʔ] ~ [yáɾʰ] go away! ; /palama#/ [páɬAMA] ~ [páɬAMA] ~ [páɬAMAʔ] ~ [páɬAMAʰ] that one,

near. Glottalization in this environment is sporadically accompanied by (1) rearticulation of the final vowel and aspiration : /muŋka#/ [mʊŋgʌʔəh] tree, or (2) reduction or phonemic absence of vowels preceding # and preceded by one of /m ŋ/ (see 1.3.1.4.). A high vowel in the environment /...n^y— #/ is potentially absent, e.g. /mart^yan^yu // / right hand is [mářǎ^yæn^yʊ], but /mart^yan^yu#/ is potentially [mářǎ^yæn^y].

We gloss # as declarative.

1.3.3.1.2. The primary characteristic of ↑ juncture is rise in pitch in the preceding syllables, occasionally with concomitant fade-out and ensuing voicelessness. When voicing persists until the end of phonation, the secondary nondistinctive characteristic of glottalization occurs with higher frequency than it does for # juncture.

Example : /ŋanit^ya n^yuntu kuŋiku karin^yinpa↑/
[ŋániǎ^yʌ n^yʊndʊgúlʌgʊgárin^yʌnbʌʔ] what's the matter with you — do you want a fight?

We gloss ↑ as interrogative.

1.3.3.1.3. The non-sentence-final juncture // is characterized by phonetic pause and by sustension or slight rise in the pitch of preceding syllables ; it is sometimes preceded by the phone [h], or by fade-out and voicelessness. An occurrence of // is a signal to a native listener that the speaker's utterance is as yet incomplete. Example : /ŋat^yu yaŋaŋa // .../ [ŋáǎ^yúyá-ŋaŋʌh] I went, (and ...).

1.3.3.1.4. Plus juncture (+), a phonological clue to word boundaries, is potentially manifested in a rise in pitch and an increase in loudness on the syllable immediately following. An occurrence of + juncture specifically precludes the occurrence of phonetic pause. Throughout this work, the convention is adopted of indicating occurrences of + juncture by space : /ŋat^yu marŋu/ = /ŋat^yu+marŋu/ I am an aborigine.

The phonetic realization in rapid speech of a sequence which in the slow-tempo version of the same utterance consists phonemically of a high vowel followed by + juncture, and is bounded by the same consonant to left and right, is potentially [C•]. Examples are : /t^yipi+pinakar^yini#/ [t^yʔb•ʔnakarin^yɪNI] I do hear ; /ŋat^yu+t^yanpar#/ [ŋád^y•ánəʔŋ] I'm hungry.

In any word preceding //, as also in words occurring contour-initially, there is free variation between occurrence of primary stress on the first and second syllables. Example : /# ɲani+muwar[↑]/ [ɲanɪmúwəʔ] ~ [ɲánɪmúwəʔ] which language? In the environment + — #, on the other hand, the first syllable of a word always receives primary stress, and the penultimate syllable may receive secondary stress. Stress in itself is hence noncontrastive in Nyanumata (but see 1.4.2.2.).

1.4. Paralinguistic phenomena

1.4.0. Over and above the variations detailed under 1.3.3.1 are greater or lesser degrees of exaggeration of, or deviation from, the statistically predominant patterns of stress, length, pitch, and allophonic distribution obtaining within a contour bounded by given junctures. In some such instances of paralinguistic variety, segmental phonemes which are present in ordinary speech are either represented by non-expectable phones or are absent entirely. Whereas ordinary junctural phenomena were observed in 1.3.3. to involve the possibility of phonemic absence of high vowels, some paralinguistic manifestations are characterized not by vocalic, but by consonantal absences. Such extra-systemic variation is non-phonemic in that contrast in meaning does not occur.

1.4.1. Attention can be focussed on any word in the Nyagumata contour by means of extra-heavy stress (marked herein by ° preceding the stressed syllable), e.g. nura wanin^yipulu °marɲumata^tin^yi# they du are camping with the aborigines (focus on with the aborigines) ; °maɭu yukuru kalkuɲunt^yanin^y# do you have many dogs? (focus on many). Interrogative words are characteristically stressed more heavily than other words in the contour, e.g. °wan^yt^yanit^ya n^yuntu# where are you from?

1.4.2. Types of nonphonemic deviation from the norms of the terminal junctures //, #, and ↑, indicated by suffixed large-face alphabetic symbols, are discussed below.

1.4.2.1. In the speech of both sexes and all age groups, a set of allojunctures of // — symbolized as //D — correlates roughly with the meaning heightening of durative aspect. Like //, //D occurs non-sentence-finally, and implies not merely sustension of pitch, but consists in (1) the chanting of several preceding syllables on a high-pitched monotone, culminating in the lengthening of the vowel of the final syllable, with or without concomitant phoneme replacement (which in some cases involves patterns contradictory of otherwise universally valid morphophonemic rules), or (2) repetition — in the case of disyllabic and some trisyllabic words — from 5 to 15 times. Examples are : # palagulu kan^yt^yiŋkan^yt^yiŋiyiŋa wuruku //D... then we pl excl looked around for a thing..., in which /wuruku //D/ is [wúrúgú::iú::]; # miŋkuŋulu warupiŋiyiŋa kaRa //D Ruṭuŋu //D kaRa //D... from Minguel we pl excl set off west along the road..., in which the first occurrence of /kaRa //D/ is [káRa::], and /Ruṭuŋu //D/ is [Rúṭuŋé::], while the second occurrence of /kaRa //D/ is [káRə] repeated 12 times. (Despite the occurrence of [æ::] in [Rúṭuŋé::] along the road, we 'phonemicize' this sequence as /Ruṭuŋu //D/, because according to the morphophonemic rules for ordinary speech, a noun whose final vowel is /u/ — as /Ruṭu/ road — selects unambiguously and without exception the /-ŋu/ allomorph of suffix 642 locative (see under 2.2.)).

Our use of //D in transcriptions of texts is not

intended to signal the presence of particular abnormal phonetic sequences — such as [ú::iú::] and [æ::] exemplified above — but rather to indicate the absence of normal phonetic sequences, i.e. sequences expectable in the light of the morphophonemic rules. This implication in //D highlights the fact that according to the present stage of analysis at least, the manifestations of //D are partly random and nonpredictable.

1.4.2.2. All sentence-final paralinguistic phenomena are subsumed under ↑. We posit neutralization of the opposition between # and ↑ when a paralinguistic constituent is present.

The allojuncture ↑VS occurs in shouted speech, much used in daily life in verbal communication over distances ranging up to several hundred yards; ↑VS is associated with loss of final consonants, plus replacement of final vowels by [-ó::], a long, high-pitched mid back vowel, on which the primary stress of the last word of the contour falls. Examples: /munu wiŋtikarun ↑VS/ [múnv̄w̄iŋd̄(ɡ̄aró::)] don't be frightened! (of which the non-shouted analog — i.e. with ↑VS replaced by # — is [múnv̄^ow̄iŋd̄(ɡ̄arv̄n)]); /pin^yt^yiRi mara pin^yt^yiRi ↑VS/ [pín^yd^yiRimárab̄in^yd^yiRó::] bring the iron spear!

The allojuncture ↑VE occurs in emphatic style (including, probably, whispered emphatic style, according to a suggestion by Kenneth Hale), in which primary stress

and high pitch occur on the last syllable of the sentence. There is not complete consistency in the phonetic value of the sentence-final vowel, different phone sequences being selected by different morphemes. The pronouns /nat^yu/ I and /n^yuntu/ you, and the particle munu no, when in sequence with ↑VE are [nad^yí{?}] I'm the one! ; [n^yund{?}] you're the one! (also with addition of noun suffix 641 ergative : [n^yundv^lí{?}] it's you who verbed transitively!); [m^vní{?}] definitely not! Suffix 733 vocative is in sequence with ↑VE in all of its occurrences : /pipikayi ↑ VE/ [pìbígáyI] mother! ; /yunkulumunuluku ↑VE/ [yùngv^lvmunv^lvgú] hey, I'll give (them) to him! The word /kakara/ east in the sequence /kakara ↑ VE/ (usually with religious connotation) is [kàgãřáh]. In other environments, ↑VE represents substitution of [-ó] or [-óh] for the sentence-final vowel : /yankun^yi ↑ VE/ [yàngv^yóh] let's go (pl incl)! Verb suffix 2347-2357 when in sequence with verb suffix 211 imperative, implies the presence of ↑VE in a large proportion of its occurrences, e.g. /yarapulu ↑VE/ [yàřãbvlóh] you du go away!

1.4.3. Though it appears possible to establish approximate correlations between particular sets of paralinguistic phenomena — notably intonation — and what Douglas (1958) designates the attitude of the speaker, a thorough investigation along these lines is postponed to a future time because of the difficulties of establishing non-overlapping intonational criteria corresponding to

attitudinal or emotional states such as authoritativeness, anger, impatience, hesitation, expostulation, surprise, reverence, sadness, and so forth. Broadly speaking, Nyaṅumaṭa paralinguistic behavior corresponding to these states appears to be similar to that described by Douglas for the Ooldean and Warburton Ranges dialects of the Western Desert language (1955 and 1958 respectively).

1.4.4. Phasis

1.4.4.0. There remains a residue of utterances, commonly referred to as 'interjections', which Trager (1958) discusses under the heading of paralanguage, but which Wescott (1963), under the influence of La Barre, prefers to subsume under a separate category — phatics.

1.4.4.1. Aside from two forms listed in 1.4.4.2., Nyaṅumaṭa phemes — to use Wescott's term — are monosyllabic. As in Ibo, so in Nyaṅumaṭa, phemes are characteristically "insusceptible to normal phonemic analysis" (Wescott 1963). Some Nyaṅumaṭa phemes such as yu yes occur in a number of different phonetic shapes, embracing intonational possibilities not matched elsewhere in the corpus. Others recur with remarkably unvarying phonetic value. In the following examples, the diacritics ' and ` mark high and low pitch respectively, and the lack of either indicates an intermediate pitch level :

pah let's get started! ; t^yuh 1. sh! 2. go away! (as to dogs) ; yuh beware! ; wá? speak up! ; yà.
I see! (uttered to reassure speaker of undivided atten-

tion) ; káy what? (= I didn't hear what you said, or did I just hear something?) ; ʔᵐʔᵐ ~ ʔᵐʔᵐ I approve of what you said ; ʔᵐʔᵐ:ʔᵐ well done! ; ʔᵐ! (ingressive bilabial click) yes, I agree ; ɲèřř: utterance used to attract cats ; nʲàʔ here you are! (I offer it to you) ; nʲíʔ 1. hey, here you are! (impatiently, when previous offer has not been noticed) 2. onomatope of chirping of Zebra Finch ; kuʔ ~ puʔ how sad! ; pú ; ɲè:: ; ʔᵐ (preglottalized creaky low central vowel) sounds said to be made by three different kinds of frog.

A pheme which occurs only sentence-final and preceded by // is yáʔ eh? (= German nicht wahr?).

1.4.4.2. Two polysyllabic phemes are : tititititi... ~ yinininini..., used in emphasizing the duration of a journey, and pipupipupipu... (with pitch alternately rising and falling over a period of approximately ten syllables), onomatope of sound made by bullroarer.

1.5. English Influence on Nyanumata Phonology

As indicated in the Preface (footnote 6), English loans in the idiolects of older and more conservative speakers, as of 1955, were phonologically assimilated in toto. Younger Nyanumata, however, in the course of gaining control of English, use partly assimilated or non-assimilated English loans — especially of recent date — alongside older, phonologically assimilated loans, when speaking their own language. Some sentences in 'Nyanumata'

running texts contain more English stems than Nyaṅumaṭa, and, moreover, include English personal pronouns to the exclusion of Nyaṅumaṭa person-marking suffixes (i.e. members of century 300).

In the following two sentences spoken by a 40-year-old man who has, so to say, moved in respect to his speech habits most of the way from the pole of ultra-conservatism (still occupied by a small number of Nyaṅumaṭa, and characterized by a low number of English loans, all phonologically assimilated) to that of ultra-modernism (occupied by a rapidly increasing number of Nyaṅumaṭa living in towns — notably Port Hedland — and characteristically swamped with partly assimilated or completely unassimilated English loans), English morphemes are underlined and identified in interlinear translation :

- (1) yaṭi mayt biy ay gow // ɲarakun^y #
later on might be I go permanently
later on I might go (to live there) permanently.
- (2) ɬulɬulumanaṅ^yuraku bipɔ yupala piniš #
I'll come to you pl before you-fellows finish
I'll come to (live with) you pl before you pl die.

If extensive texts were collected in those Nyaṅumaṭa idiolects in which English loans such as finish above are pronounced [fɪn(ɕ)], i.e. are completely unassimilated, it could, in theory, be demonstrated that all phonemic distinctions of both Australian English and Nyaṅumaṭa are made in such idiolects.

In the present phonological analysis, phenomena which reflect English influence are regarded as extra-systemic.

1.6. Interphonemic Specification (IPS)

1.6.0. The distribution of segmental phonemes is stated below in terms of the word as defined phonologically under 1.3.3.

1.6.1. The morphological word consists of a stem composed of one or more root morphemes (or root morpheme plus stem-forming suffix) occurring obligatorily (in the case of verbs) or optionally (in the case of nouns and some particles) in sequence with one or more suffixes, and contains a minimum of one and a maximum of a dozen or more syllables. [Divisive criteria for verbs, nouns, and particles are stated in Chapter 3]. Consonants do not occur in final position in verb stems ; the two syllable types CV and CVC are otherwise distributed freely within the word.

A very small number of roots is monosyllabic. Such roots, if nouns, contain long vowels but not short vowels, e.g. Ra· expansion, wi·r all, or, if verbs, contain short vowels but not long vowels, e.g. ya- go, ɣa- eat.

Of verb roots, 85% are disyllabic. Examples are : marpa- escape, yiri- see. A small number of verb roots contain three or four syllables, e.g. wapaka- jump, paluput^ya- cave in.

Of noun roots, 50% are disyllabic, e.g. Ramin^y rib ; 28% are trisyllabic, e.g. t^yukuṭi 1. Milky Way 2. mythological path ; 16% are quadrisyllabic, e.g. yalakuru whitegum (tree sp) ; the remainder — apart from monosyllables — range up to a solitary instance of a nine-syllable place name — kun^yt^yaṭit^yirit^yukut^yuku^l The Second Wash, an ocean reef.

Numerous nouns occurring in reduplicated shape are unmatched by a nonreduplicated form, e.g. mit^yimit^yi gold occurs in the corpus, but *mit^yi does not. There are also unmatched reduplications preceded by one syllable, e.g. wanmiRimiRi octopus, t^yiwil^yirwil^yir wren sp.

Most particles are disyllabic. Example : pukul^y also.

There are approximately twice as many monosyllabic suffixes as disyllabic. A few suffixes are trisyllabic, and one noun suffix (2645 -waṭuwaṭu covered by) contains four syllables.

1.6.2. In nonreduplicated polysyllabic words, long vowels occur only in the initial syllable : /wa·kura/ crow. The restriction of canonical shapes of syllables to CV and CVC precludes the occurrence of vowels in clusters or in word-initial position. Short vowels have privileges of occurrence in initial, medial, and final syllables of the word.

1.6.3. The consonants /p t t^y k m ŋ n^y ŋ l w

R y/ occur word-initially : Rapi hip ; nat^yi
sugar. /p t t^y n n n^y l l l^y r/ occur word-
 finally : t^yupt^yup stew ; paɭpaɭ sky. All conson-
 ants occur intervocalically.

1.6.4. Consonant clusters occur only word-medially and
 across syllable boundaries², and fall structurally into
 three categories :

(1) Certain unique clusters occur at the
 boundaries of the two parts of reduplications of nouns
 and particles. The occurrence of such clusters is
 limited only insofar as there are restrictions on the
 occurrence of consonants in final and initial positions
 in nonreduplicated roots, and is hence largely haphazard.
 Examples are : tuptup loud flapping of wings ;
 Ra·rRa·r rustling sound, as of snake in grass.

(2) Some restrictions exist as to the privileges
 of occurrence of clusters within the word across morpheme
 boundaries. However, the following clusters, absent from
 category (3) below, are recorded in this environment :
 /pk pm tt^y tm t^yk ny ly lm ln^y lw l^ym l^yw
 n^yŋ n^yw/ ; examples : waŋuɭyaŋara he wandered rest-
lessly ; kanin^yŋu from below.

(3) The category of clusters occurring within the
 morpheme is treated in terms of the following nine
 distributional subclasses : C^t = /t/ ; Cⁿ =
 /n n n^y/ ; C^l = /r l ḷ l^y/ ; C^h = /n n l ḷ/ ;

$C^t = /t \quad t/$; $C^s = /p \quad t^y \quad k/$; $C^m = /m \quad \eta/$; $C^p = /p \quad k/$; $C^w = /w/$.

Members of C^n and C^l occur as first members in cluster with members of C^s and C^m . Examples : man^ykar gill ; kanpart^yipart^yi tree sp ; kun^yt^ya bone ; yinma corroboree ; mal^ynamal^yna flat, as tire.

Members of C^h occur as first members in cluster with homorganic members of C^t . Examples : t^yunta mosquito ; yul^tu part of anatomy of ruminants.

Members of C^m occur as first members in cluster with homorganic members of C^p . Examples : wampu confused ; wugkalka fire drill.

The single member of C^t occurs as first member in cluster with members of C^p and the single member of C^w . Examples : katku river gum ; putwanin^y frog sp.

SUMMARY CHART OF INTRAMORPHEMIC CONSONANT CLUSTERS

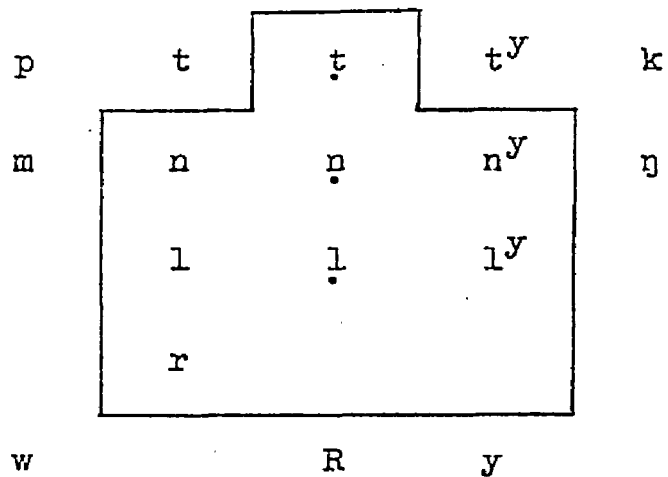
np		ṇp	n ^y p
nt ^y		ṇt ^y	n ^y t ^y
nk		ṇk	n ^y k
lp	rp	ḷp	l ^y p
lt ^y	rt ^y	ḷt ^y	l ^y t ^y
lk	rk	ḷk	l ^y k
nm		ṇm	n ^y m
nŋ		ṇŋ	-
-	rm	ḷm	-
lŋ	rŋ	ḷŋ	l ^y ŋ

nt	ṇt
-	ḷt

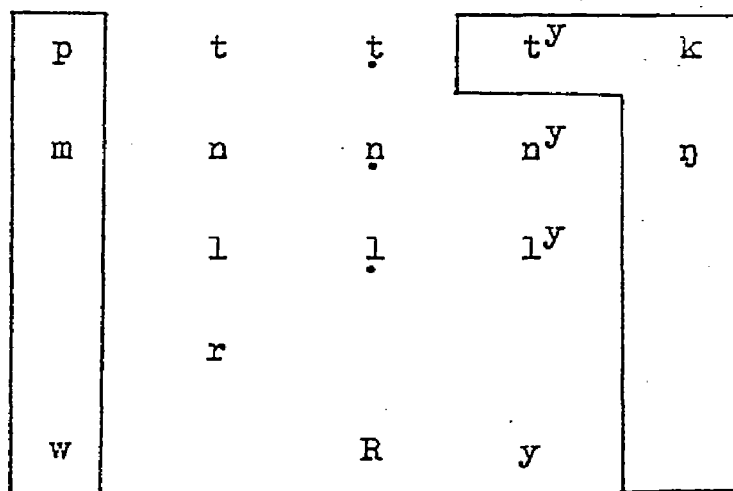
mp	ŋk
----	----

ṭp
ṭk
ṭw

FIRST MEMBERS IN HETERORGANIC INTRAMORPHEMIC CLUSTERS



SECOND MEMBERS IN HETERORGANIC INTRAMORPHEMIC CLUSTERS



1.6.5. Interphonemic Bias

1.6.5.1. No absolute restrictions exist as to the cooccurrence of consonants and vowels in syllables of the shape CV³, but strong bias is observed with regard to the occurrence of certain combinations. In the following table are listed extreme instances of such bias, diagnosed in terms of the overall percentages of occurrence of short vowels in CV-type syllables in the lexicon :

/i/ 30% ; /a/ 43% ; /u/ 27%.

Vowel → Consonant ↓	i	a	u	Total
ŋ	8	43	49	100
k	14	47	39	100
w	29	58	13	100
y	39	46	15	100
l ^y	11	72	17	100

1.6.5.2. Bias also exists as to the occurrence of certain CV sequences in various positions within the word. CV-type syllables in which the consonant is produced at position 1 (i.e. one of /p m w/), or is /y/, are strongly biased against occurring word-finally: the sequence /mi/, for example, occurs twenty times more frequently as the initial syllable of a word than as the final.

1.6.5.3. In CVC-type syllables the following frequency patterning is evident : (1) Bias exists against the occurrence of a nasal as the final consonant in CVC syllables if the syllable-initial consonant is the homorganic stop. For example, only one stem in the lexicon has an initial syllable of the shape /pim/, while ten have /pin/. (2) There is bias in favor of the occurrence of a consonant of position 2 as initial member of CVC syllables in sequence with a consonant of position 3 as final member, e.g. /ɲin^y/, /t̪in^y/.

1.6.5.4. A long component phenomenon of vowel assimilation which occurs in suffixation (see 2.2.) tends to occur in stems also. The number of stems containing identical vowels is far higher than is expectable on a hypothesis of random selection of vowel phonemes in Nyagumata stems. Examples for each short vowel are : mintipi antbed ; t^yaṭaka snipe ; kulukuku turtle-dove.

1.7. Phoneme Frequency

Of 489 segmental phonemes counted in 100 roots occurring in a lexical test list, 222 were short vowels, none were long vowels, and 267 were consonants. The descending order of frequency for vowels and consonants is indicated in the chart below.

<u>Quartile</u>	<u>Phoneme</u>	<u>Occurrences</u>	<u>% of Total</u>
First	a	109	22.3
	u	59	12.1
	i	54	11.1
	k	38	7.8
Second	p	27	5.5
	t ^y	21	4.3
	m, ŋ	20	4.1
	n, w	19	3.9
Third	ṭ, r	18	3.7
	y	13	2.7
	R	10	2.0
	n ^y , l, ḷ	9	1.8
Fourth	ŋ	7	1.4
	t	6	1.2
	l ^y	4	0.8
	i [•] , a [•] , u [•]	0	0.0
Total		489	100.0%

1.8. Spectrographic Evidence

A corpus of 114 spectrograms of Nyāṇumāṭa utterances indicates general agreement between impressionistic registration of features of relative pitch, length, and stress and the spectrographic record. The latter has provided otherwise unobtainable data of an absolute kind - for example, relating to the implications in 'fast tempo'. In spectrogram 96 are represented 40 segmental phonemes delivered in 175 centiseconds — an average of 23 per second. The rate of delivery is greater at the end than at the beginning of the utterance in question ; the last 14 phonemes were spoken at an average rate of 28 per second.

NOTES

1. The first three syllables of this form — in the light of Nyanumata mythology — probably represent ḡala kuṅṅata woman ; the fourth and fifth syllables equate to Nyanumata noun suffix 2611-2631-2661 dual. The whole form, however, patterns grammatically as a singular noun, and from a synchronic viewpoint no morphemic cuts are justifiable.

2. A solitary exception — apparently a loanword from one of the languages of the Kimberley District — is tirṗtirṗ type of tree-carving.

3. A few such restrictions were listed in O'Grady 1957, but were eliminated by subsequent examination of the lexicon.

CHAPTER TWO

MORPHOPHONEMICS

2.0. This chapter concerns the distribution of such minimal meaningful phoneme sequences — MORPHS — as are assignable as non-unique members of single morphemes. Two or more morphs which are in complementary distribution and have identical or similar meanings are said to be ALLO-MORPHS of a given morpheme, or to stand in ALTERNATION with each other.

The account of Nyagumaṭa morphophonemics which follows is subsumed under three headings. In section 2.1. apparent instances of SPORADIC alternation are discussed — i.e. alternation for which no environmental correlates — whether of a phonological or a morphological character — are evident. Section 2.2. is devoted to such alternations as are phonologically conditioned. Section 2.3. concerns morphologically conditioned alternations. Suffix alternants are discussed in the order in which the suffixes are listed in the minor morpheme inventory (3.0.).

2.1. Sporadic Alternation

2.1.0. Instances of unpredictable and nonsystematic alternation are treated under two headings — 2.1.1., in which the occurrence of such alternation in major morphemes is accounted for, and 2.1.2., relating to sporadic alternation in minor morphemes. All examples are drawn from Wanyaḷi₁ (as indicated in the preface), but no

distinction is made between intraindialectal and inter-dialectal sporadic alternation.

2.1.1. In major morphemes, there are instances of sporadic alternation in both vowels and consonants. Examples of vowel pairs standing in such alternation with each other now follow.

i ~ a : kaRimiri ~ kaRimara a section name ;
kuRili ~ kuRila south ; yantiri ~ yantara southeast
(? northeast) ; kapalipali ~ kapalapalu butterfly.

i ~ u : (see preceding example) ; yukuli ~
yukulu Cuscuta sp, dodder (parasite vine).

u ~ a : waŋkaruŋkaru ~ waŋkaraŋkara spider web;
man^yulu ~ man^yula tired, lazy ; n^yaŋumata ~
n^yaŋamutu Nyaŋumata (person or language).

Examples of consonant pairs in sporadic alternation in major morphemes are now listed.

R ~ y : Rira ~ yira tooth (if lirapiŋan
red-tailed black cockatoo is analyzed as a compound of
lira- tooth and piŋan limestone, then l is listable as
a morphologically conditioned alternant of the above pair);
kukunt^yaRi ~ kukunt^yayi sheep ; Ruwin^yini ~
yuRin^yini I hit him with a missile, I shot him.

R ~ w : (see preceding example).

k ~ m : kulur ~ mulur testicles.

n ~ l (in metathesis) : nilpint^yiri ~ lĩpin-
t^yiri emaciated.

n^y ~ l : n^yil^yaRaŋkar ~ lĩl^yaRaŋkar shrub sp.

2.1.2. Both vowels and consonants alternate sporadically in some minor morphemes and minor morpheme sequences. The following examples of sporadic vowel alternation in suffixes are accompanied by an English gloss and an identification of the morphemes involved.

V ~ i (for discussion of V, see 2.2.) : yanayi
~ yan^yiyi they went ($V_{di} + 221 + 348$); kaŋaman ~
kaŋimin you should have carried it ($V_{et} + 222 + 233 +$
331); ŋaŋara ~ ŋaŋiri he ate it ($V_{ct} + 221 + 312$).

V ~ a : piŋiŋi ~ piŋiŋa in a hole ($N_s + 642$);
ŋaŋkirikirimiŋiri ~ ŋaŋkirikirimaŋara he snorted
($V_{ai}(N_s + 811 + 521) + 221 + 312$); miyukurumuŋuru ~
miyukamaŋara it meowed ($V_{ai}(N_s + 811 + 521) + 221 +$
312); ŋalu kuŋkuŋkurumuŋuru ~ ŋalu kuŋkuŋkurumaŋara
his/her stomach rumbled ($N_b V_{ai}(N_s + 811 + 521) + 221$
+ 312).

V ~ u : wiŋaŋakata ~ wiŋaŋukutu pugnacious
($N_s(V_{at} + 221 + 812)$).

Note also marumuŋuru ~ marumiŋiri ~ marumaŋara
3rd person^{sg} likes 3rd person sg ($V_{at}(N_s + 521) + 221$
+ 312).

i ~ u : wantun^yi ~ wantun^yu let's stay! (pl

incl) ($V_{bi} + 231 + 342$) ; wantut^yipulalu ~ wantut^yu-
pulalu let my two stay for him! ($V_{bi} + 231 + 325 + 347$
 $+ 371 + 381 + 391$).

There follows an example of consonants in sporadic alternation in a suffix.

ṭ ~ ṇ : pitit^yaṭin^y ~ pitit^yaṇin^y having a coolamin ($N_s + 624$).

Allomorphs 312.1 (-rV) of suffix 312 alternates sporadically with 312.3 (-∅) in some environments following 231 : wanturu ~ wantu let him stay! ($V_{bi} + 231 + 312$).

Suffix 221, when in sequence with 242, is sporadically absent, especially when in sequence with verbs of morphophonemic subclass b : wanin^yilṅa ~ wanilṅa he stayed long ago ($V_{bi} (+ 221) + 242 + 312$).

In allomorphs listed under 612.10, and in suffix 683, there is both vocalic and consonantal alternation of an apparently sporadic character : n^yarumpamaḷiṅi ~ n^yarumpamaḷiṅu ~ n^yarumpamaḷiṅka wives and sisters ($N_k + 612$) ; t^yurukapana like a snake ($N_s + 683$) ; mayanakupali as if in the house ($N_s + 642 + 683$) ; ṅan^yt^yurumilikupali like ours (pl incl) ($N_p + 535 + 683$).

2.2. Phonologically Conditioned Alternation

2.2.0. Morpheme alternants whose occurrence is predictable from their phonological environment — including those participating in non-automatic alternation, are discussed below in two sections : 2.2.1. treats such alternation occurring in major morphemes (or in both major and minor, if a given type of alternation occurs in both), and 2.2.2. relates to minor morphemes.

2.2.1. Phonologically Conditioned Alternation in Major M

2.2.1.1. Major morphemes or sequences of major morpheme + suffix(es) of which the final phoneme is a consonant have alternants containing a phonemic extension to the right of the shape -pi- when occurring in sequence with a member of suffix decade 910. Examples are : walaŋkar ~ walaŋkarpi- forward, ahead (the latter alternant occurring in walaŋkarpiŋi yara ahead you go! (N_s + 912 V_{di} + 211)) ; kuŋin^yt^yir ~ kuŋin^yt^yirpi- cadjeput tree (pala kuŋin^yt^yirpila that's a cadjeput tree! (N_d N_s + 911)).

Suffix alternants 241.2 and suffixes 242 and 331 occur in the following shapes :

(1) -li^yn^yp-, -lp-, and -np- respectively, when followed by a morph consisting of a vowel (viz. 371.1), e.g. purt^yapilkūlin^ypa he will chase it (V_{atp} + 231 + 241 + 312 + 371) ; purt^yapinilpa he chased it long ago (V_{atp} + 221 + 242 + 312 + 371) ; purt^yapinilpinpa you

chased it long ago ($V_{atp} + 221 + 242 + 331 + 371$).

(2) Alternant 241.2 and suffix 331 have a /pV/-included shape when followed by a morph whose initial consonant is one of /ŋ l/ (for V, see 2.2.2.2.). Examples are : Ruwulin^ypaŋa he will shoot his own ($V_{bt} + 231 + 241 + 1367 + 371$) ; Ruwiminpalu you should have shot his ($V_{bt} + 233 + 331 + 381 + 391$). In other environments 241.2 and 331 are non-/pV/-included : kampalkulin^ypulu they du will cook/burn it ($V_{at} + 231 + 241 + 2347$) ; Ruwin^yinŋaŋaka you shot ours (pl excl) ($V_{bt} + 221 + 331 + 1354 + 363 + 371$). Suffix 242 has an alternant -lpV- when followed by (a) any morph whose initial consonant is one of /n ŋ l y/, or (b) any monosyllabic morph (other than 312.2). In other environments, 242 has an alternant -l-. Examples are : yaŋalpali we du incl went long ago ($V_{di} + 221 + 242 + 2341$) ; yaŋalpulu they du went long ago ($V_{di} + 221 + 242 + 2347$) ; kampaŋamalpit^yipula they du should have cooked it for me long ago ($V_{at} + 221 + 233 + 242 + 325 + 2347 + 371$) ; yaŋalŋa he went long ago ($V_{di} + 221 + 242 + 312$).

2.2.1.2. Any nonreduplicated morpheme or morpheme sequence which contains three or more syllables (and if three, not -rV as final) and whose final phoneme is a high vowel when not in sequence with a suffix of the shape -Cu (which lacks alternation in its vowel), terminates in -a when in sequence with such a suffix. Examples are :

wal^ypili white man (N_s) : wal^ypilaku for a white man
 (N_s + 651) ; pit^yiri blood (N_s) : pit^yiriku for
blood (N_s + 651) ; mit^yimit^yi gold (N_s) :
 mit^yimit^yiku for gold (N_s + 651) ; kut^yuguru ocean
 (N_s) : kut^yuguralu ocean, ergative (N_s + 641) :
 kut^yugurugu in the ocean (N_s + 642) ; yankulumin^yi
we pl incl will go (V_{di} + 231 + 241 + 2342) :
 yankulumin^yalu we pl incl will go to him (V_{di} + 231 +
 241 + 2342 + 361). The noun kuyi meat, animal also
 participates in this alternation : kuyaragu animals,
game (N_s + 612).

2.2.2. Phonologically Conditioned Alternation in Minor M

2.2.2.0. Four separate phonological conditioning factors affect the vowels of certain suffixes. Two of these factors are assimilative, one is dissimilative, and one involves alternation of a vowel with zero. One of the assimilative phenomena is progressive, the other retrogressive.

2.2.2.1. PROGRESSIVE ASSIMILATION, whereby the vowel (or vowels) of certain suffixes alternates in accordance with the quality of the preceding vowel (which in turn may alternate according to the quality of the final vowel of the preceding stem), affects over a third of the members of the minor morpheme inventory.

2.2.2.2. In RETROGRESSIVE ASSIMILATION the vowel of a suffix is /i/ if one of /t^y n^y. y/ follow (apart from

instances of sporadic alternation discussed in 2.1.2.). In cases where a vowel occurs in a position rendering it susceptible to both types of assimilation simultaneously, retrogressive assimilation takes precedence. In morphophonemic notation — as used in the minor morpheme inventory — the symbol ((V)) indicates a vowel which alternates under the influence of both types of assimilation and of retrogressive dissimilation (see 2.2.2.3.). In vowels occurring in members of a second class of suffixes, the morphophoneme ((A)) indicates /a ~ i/, where /a/ alternates with /i/ under the influence of retrogressive assimilation. (There are also several suffixes — discussed in 2.2.2.6. — in which /i/ alternates with /a/ under the influence of retrogressive dissimilation. This type of alternation is distinguished in the minor morpheme inventory by the notation -i ~ -a, as opposed to ((A)) above). Members of a fourth class of suffixes have invariant alternants.

2.2.2.3. In RETROGRESSIVE DISSIMILATION a final high vowel occurring in a stem or stem + suffix(es) sequence is replaced by the low vowel /a/ when a suffix of the shape -Cu follows. The type of alternation involved was discussed in 2.2.1.2. For vowels occurring in environments where the influences of progressive assimilation and retrogressive dissimilation overlap, the latter takes precedence.

2.2.2.4. ALTERNATION OF VOWEL WITH ZERO. In suffixes (other than 231 and 234) which can occur immediately preceding a suffix of the shape v (= any vowel ; 371-391 is the sole instance), and in which the final phoneme is a vowel when 371-391 does not occur in sequence, an alternant lacking this final vowel occurs when in sequence with 371-391.

2.2.2.5. Examples of the abovementioned four types of phonologically conditioned vowel alternation occurring in minor morphemes — alone and in combination — now follow. In the minor morpheme inventory (see 3.0.), the morphophoneme ((V)) occurs in 23 suffixes, and the morphophoneme ((A)) in 5 suffixes.

(1) Progressive assimilation. yirilimiñinti

I'll see you ($V_{at} + 241 + 311 + 338$) : yat^yalamananta
I'll follow you ($V_{at} + 241 + 311 + 338$) : Ruwulumununtu
I'll shoot you ($V_{bt} + 241 + 311 + 338$) ; piñiñi in the hole (in ground) ($N_s + 642$) : mayaga in the house ($N_s + 642$) : t^yimpugu in the egg ($N_s + 642$).

(2) Retrogressive assimilation. wuralit^yi tell

me! ($V_{at} + 211 + 325$) ; wiñaniñ^yi he hit me ($V_{at} + 221 + 324$) ; yiriniñ^yaniñ^yi he saw them ($V_{at} + 221 + 312 + 2358 + 362$).

(3) Retrogressive dissimilation (see examples in 2.2.1.2.).

(4) Alternation of vowel with zero. $ya\dot{n}in^yini$ I'm going ($V_{di} + 222 + 311$) : $ya\dot{n}in^yina$ I'm going therefore ($V_{di} + 222 + 311 + 371$) ; $yankunu$ let me go ($V_{di} + 231 + 311$) : $yankuna$ let me go therefore ($V_{di} + 231 + 311 + 371$).

(5) Combination of (1) and (2). $mimalapit^yi$ he will wait for me ($V_{ai} + 241 + 325$).

(6) Combination of (1) and (3). $mun^yilima\dot{n}u$ he will wait for you ($V_{ai} + 241 + 339$).

(7) Combination of (1) and (4). $yankulumuna$ I'll go therefore ($V_{di} + 231 + 241 + 311 + 371$).

(8) (Types (2) and (3) are mutually exclusive).
Combination of (2) and (4). $ku\dot{t}apilit^ya$ cut it for me! ($V_{at}(N_s + 521) + 211 + 325 + 371$).

(9) Combination of (3) and (4). $Ruwiyalu$ shoot it for him! (or : shoot his!) ($V_{bt} + 211 + 381 + 391$).

2.2.2.6. Eight suffixes embody phonologically conditioned vowel alternations which are non-coordinate with those represented by the morphophoneme ((A)), even though it is the same pair of vowels — /i/ and /a/ — which stand in alternation in both cases. Suffixes 222, 324, 2341, 1343, 1344, 2348, and 535-625-675, plus allomorph sets 211.b and 221.b, when not in sequence with 371, terminate in /a/ when subject to retrogressive dissimilation, and in /i/ otherwise (whereas ((A)) represents /i/ when

subject to retrogressive assimilation, /a/ otherwise).

Examples follow. kampanali we du incl cooked it

(V_{at} + 221 + 2341) : kampanalalu we du incl cooked it
for him (V_{at} + 221 + 2341 + 381 + 391). Suffix 2342, in
addition, has an alternant of the shape -n^yu which
alternates sporadically with -n^yi (as stated in 2.1.2.).

2.2.2.7. Phonologically conditioned consonant alternation
occurs in three minor morphemes.

(1) Allomorph set 241.1 has /m/-included alternants
when an immediately following suffix contains an initial
nasal, and /p/-included alternants selected by a non-
nasal, e.g. yankulumin^yi we pl incl will go (V_{di} +
231 + 241 + 2342) : yankulupiyi they pl will go (V_{di}
+ 231 + 241 + 2348).

(2) Suffix 641 ergative has the alternant -lu when
in sequence with a noun which terminates in a vowel, -t^yu
with a consonant, e.g. yukurulu the dog, ergative (N_s
+ 641) : paRirt^yu the hand, ergative (N_s + 641).

(3) Allomorph set 642.1 has alternants of the shapes
-ŋV after vowels, -t^yi after consonants, e.g. pit^yugu
in the river/creek (N_s + 642) : paRirt^yi in the hand
(N_s + 642).

2.2.2.8. Phonologically conditioned phoneme loss occurs
in suffixes where sequences of ...t^yVn^y..., ...n^yVt^y...,

...n^yVn^y... (in some morpheme combinations only), or
...rVr... would otherwise occur. Allomorph set 612.1
-632.1-662.1 has the following alternants : -araṅu
(following consonants), -ṅu (following a syllable of the
shape -rV, with concomitant retrogressive dissimilation),
and -raṅu elsewhere. Examples are : Ruwulupit^yumpula
you du will shoot it for me (V_{bt} + 241 + 325 + 1345 +
371) ; Ruwulupit^yura you pl will shoot it for me
(V_{bt} + 241 + 325 + 1346 + 371) ; yirin^yin^yt^yanin^yi we
pl incl saw them (V_{at} + 221 + 2342 + 2358 + 362) ;
puṅkin^yumpulu you du fell down (V_{bi} + 221 + 1345) ;
kulpin^yin^yi we pl incl returned (V_{bi} + 221 + 2342) ;
yat^yanikin^yin^yipulu they du were following me (V_{at} +
221 + 232 + 324 + 2347) ; yirin^yin^yuru you pl saw
me (V_{at} + 221 + 324 + 1346) ; mayaraṅu houses
(N_s (maya) + 612) ; lirapitanaraṅu red-tailed black
cockatoos (N_s (lirapitan) + 612) ; yaḷpuraṅu
age-mates, friends (N_s (yaḷpuru) + 612).

2.3. Morphologically Conditioned Alternation

2.3.0. Alternations which are predictable only from the morphological environment — either in terms of subclasses or of lists — are treated below in three sections. 2.3.1 and 2.3.2. relate to the occurrence of such alternations in major and minor morphemes respectively ; 2.3.3. relates to reduplication.

2.3.1. Morphologically Conditioned Alternation in Major M

2.3.1.1. The final vowel of members of morphophonemic subclass b of verb stems (see 2.3.2.1.) undergo an alternation — symbolized ((U)) — which is conditioned by suffixes occurring in sequence : /a/ is selected by occurrences of 211 which are immediately followed by 2341, 1343, 1344, 2348, and 2711 ; /u/ is selected by the occurrence of 231 or 241 adjacent to the stem ; /i/ occurs elsewhere. Examples are : pukalili let's (du incl) not fall down! ($V_{bi} + 211 + 2341 + 411$) ; pukayinili let's (pl excl) not fall down! ($V_{bi} + 211 + 1344 + 411$) ; nalpuli let's (du incl) go in! ($V_{bi} + 231 + 2341$) ; Ruwulin^y he will shoot it ($V_{bt} + 241 + 312$) ; nalpin^yali we du incl went in ($V_{bi} + 221 + 2341$) ; nalpulupali we du incl will go in ($V_{bi} + 241 + 2341$) ; nalpat^yilipali we du incl will make him go in ($V_{at}(V_{bi} + 2711) + 241 + 2341$).

2.3.1.2. The vowel of one member of verb morphophonemic subclass e alternates between /i/ and /u/. The verb stem is yi- ~ yu- give, and the alternation is symbolized as ((I)) ; /u/ is selected by suffixes 211, 231, and

241 occurring adjacent to the stem ; /i/ occurs otherwise. Examples are : yuwan^ya give it to me! (V_{etp} + 211 + 324 + 371) ; yunkulupilayit^yanin^ya we du excl will give it to them (V_{etp} + 231 + 241 + 1343 + 2358 + 362 + 371) ; yin^yaya they pl gave it to him (V_{etp} + 221 + 2348 + 371); yin^yalpa he gave it to him long ago (V_{etp} + 221 + 242 + 312 + 371).

2.3.1.3. Consonantal alternation — symbolized ((N)) — occurs in one member of verb morphophonemic subclass b : waNU- stay, be. ((N)) represents /-nt-/ when suffixes 211, 231, or 241 immediately follow the stem, /-n-/ otherwise. Examples are : wantiyi stay! (V_{bi} + 211) ; wantulumunu I'll stay (V_{bi} + 241 + 311) ; wanimini I should have stayed (V_{bi} + 233 + 311).

2.3.1.4. Alternation in two members of N_c (cardinal points) is conditioned by suffix 652. kuRili (sporadically ~ kuRila) ~ ku- south and kakara ~ kaka- east occur in the latter shapes in each case only when in sequence with 652 : kuni from the south (N_c + 652) ; kakaⁿi from the east (N_c + 652).

2.3.1.5. One N_b with the referent mouth — occurring independently in the shape t^yawa — has alternants t^ya- (when combined with 642 + 2711 + ...) and t^yu- (when, combined with 642, also in compound with ka- (V_{et}) carry): t^yan^ykat^yin^yiⁿi I put it in my mouth (V_{at}(N_s + 642 + 2711) + 221 + 311) ; t^yun^ykukan^yara he carried it in his mouth

(V_{et}(N_s + 642 + V_{et}) + 221 + 312).

2.3.1.6. Two N_b — t^yut^yu head and pin^yil back when occurring independently — alternate suppletively to t^yita- and t^yana- respectively when, combined with 642, they are also in compound with ka- (V_{et}) carry.

Examples are : t^yitaŋkakaŋkulumuŋu I will carry it on my head (V_{et}(N_b + 642 + V_{et}) + 231 + 241 + 311) ; t^yanaŋakawan^yi carry me pickaback! (V_{et}(N_b + 642 + V_{et}) + 211 + 324).

2.3.1.7. Morphologically conditioned optional external sandhi occurs in two forms : (1) n^yara ~ n^yiri that (distant or understood). (N_d) optionally occurs in the shape n^yiri when following ŋani what? (N_i) : ŋani n^yiri ~ ŋani n^yara what is that in the distance? n^yara occurs elsewhere. (2) kut^yara ~ kut^yari two (N_n) optionally occurs in the shape kut^yari when preceding ŋaran^y yet (P) : kut^yari ŋaran^y ~ kut^yara ŋaran^y two more ; kut^yara occurs elsewhere.

2.3.2. Morphologically Conditioned Alternation in Minor M

2.3.2.1. Verb stems occur in five subclasses (identified by the alphabetic symbols a through e) which (1) select various alternants of suffixes 211, 221, 222, and 231, and (2) differ, in some cases, as to their compatibility with various members of 200 and with sequences of members of 200. Members of morphophonemic subclass a number upwards of 500. Members of subclass b

number in the twenties. Compounding aside, subclass c contains a unique member ($\eta a-$ eat) ; subclass d consists of two members ($ya-$ go and $ma-$ take, grasp), as does subclass e ($ka-$ carry and $yI-$ give). In the minor morpheme inventory, allomorphs of members of 200 which alternate in accord with the abovementioned morphophonemic subclasses of verb stems are distinguished by alphabetic notation (a through e) from allomorphs alternating under the influence of other types of morphological conditioning (indicated by decimal numbering).

Examples of suffixes 211, 221, 222, and 231 occurring in sequence with a single member of each morphophonemic subclass now follow in separate paragraphs.

kat^yala sit down! ($V_{ai} + 211$) ; $\eta alpiyi$ go in! ($V_{bi} + 211$) ; ηala eat it! ($V_{ct} + 211$) ; $mara$ pick it up! ($V_{dt} + 211$) ; $kawa$ carry it! ($V_{et} + 211$).

kat^yana I am sitting, I sat down ($V_{ai} + 221 + 311$) ; $\eta alpin^yini$ I am entering, I entered ($V_{bi} + 221 + 311$) ; ηana I ate it ($V_{ct} + 221 + 311$) ; $mana$ I picked it up ($V_{dt} + 221 + 311$) ; kan^yana I carried it ($V_{et} + 221 + 311$).

$\eta anin^yini$ I am eating it ($V_{ct} + 222 + 311$) ; $manin^yini$ I am taking it ($V_{dt} + 222 + 311$) ; $kanin^yini$ I am carrying it ($V_{et} + 222 + 311$).

$kat^yalkunu$ let me sit down! ($V_{ai} + 231 + 311$) ; $\eta alpunu$ let me enter! ($V_{bi} + 231 + 311$) ; $\eta alkunu$ let

me eat it! ($V_{ct} + 231 + 311$) ; mankuṇu let me take it!
 ($V_{dt} + 231 + 311$) ; kaṅkuṇu let me carry it! ($V_{et} +$
 231 + 311).

2.3.2.2. Suffix 211, when occurring in sequence with a stem of morphophonemic subclass b, and followed by 2341, 1343, 1344, or 2348, has a zero alternant. In other environments shared with subclass b, -yi ~ -ya- ~ -y- occur. Example : puṅkalili let's (du incl) not fall down! ($V_{bi} + 211 + 2341 + 411$).

2.3.2.3. Suffix 222, when in sequence with a stem of subclass e, and followed by 232 or 233, has alternants -ṅi- ~ -ṅa-. In other environments shared with subclass e, the alternants -ṅin^yi- ~ -ṅin^ya- ~ -ṅin^y- occur. Examples : kaṅimali we du incl should have carried it ($V_{et} + 222 + 233 + 2341$) : kaṅin^yali we du incl are carrying it ($V_{et} + 222 + 2341$).

2.3.2.4. Suffix 241 exhibits alternations which are non-coordinate with the alternations conditioned by morphophonemic subclasses a-e. Set 241.2 occurs preceding 312 (unless 312 is followed by a member of decades 320 or 330), 1345, 1346, and 2347. Allomorphs of alternant set 241.1 occur in all other environments. Examples are : yankuḷin^y he will go ($V_{di} + 231 + 241 + 312$) ; yankulumun you will go ($V_{di} + 231 + 241 + 331$) ; yat^yalamantapulu they du will follow you ($V_{at} + 241 + 338 + 2347$) ; yat^yalkuḷin^ypulu they du will follow him ($V_{at} + 231 + 241 + 2347$).

2.3.2.5. Suffix 312 has an alternant -ŋa which occurs word-finally following 242, and an alternant set -rV which occurs word-finally following members of decades 220 and 230. In other environments, -∅ occurs.

Examples are : wanilŋa he stayed long ago ($V_{bi} + 242 + 312$) (optionally replaceable by wanin^yilŋa($V_{bi} + 221 + 242 + 312$)) ; wanin^yiri he is staying, he stayed ($V_{bi} + 221 + 312$) ; wantulin^y he will stay ($V_{bi} + 241 + 312$).

2.3.2.6. Suffix 2341, unless followed by 361-381 or 371-391 and/or preceded by 231, constitutes an environment which conditions the occurrence of /a/ as the terminal vowel of the preceding morpheme. This rule overrides all other morphophonemic rules. Examples : yiriŋiŋi I see him, I saw him ($V_{at} + 221 + 311$) : yiriŋali we du incl see him, saw him ($V_{at} + 221 + 2341$) ; pit^yununu I am bruised ($V_{ai} + 221 + 311$) : pit^yunali we du incl are bruised ($V_{ai} + 221 + 2341$) ; kulpuli let's (du incl) return! ($V_{bi} + 231 + 2341$) ; kan^yt^yilipila we du incl will look for it ($V_{aip} + 241 + 2341 + 371$).

2.3.2.7. The first four suffixes of decades 340-350, and suffix 2348-2358, undergo alternation according as they occur as the first member (i.e. actor) or as the second member (i.e. non-actor) of a sequence involving decades 310 through 350. Part of the alternation in those of the above suffixes which include first person

among their referents consists in an extension to the left of the shape -ŋa- in alternants occurring as second member. Examples are : yiriŋalit^yanin^yi we du incl saw them pl ($V_{at} + 221 + 2341 + 2358 + 362$) : yiriŋiyiŋalin^yi they pl saw us du incl ($V_{at} + 221 + 2348 + 1351 + 362$) ; Ruwin^yiyiŋiŋa we pl excl shot it for you ($V_{bt} + 221 + 1344 + 369 + 371$) : Ruwin^yinŋanaka you shot it for us pl excl ($V_{bt} + 221 + 331 + 1354 + 363 + 371$) ; yiriŋin^yi we pl incl saw him ($V_{at} + 221 + 2342$) : yiriŋiŋan^yt^yu-rin^yi he saw us pl incl ($V_{at} + 221 + 1352 + 362$).

2.3.2.8. Allomorphs of alternant sets 1345.2 and 1346.2 occur following 241 and 322. 1345.1-1355.1 and 1346.1-1356.1 occur elsewhere. Examples are : kulpuŋin^yuru you pl will return ($V_{bi} + 241 + 1346$) ; wuralapit^yumpulu you du will/should tell me ($V_{at} + 241 + 325 + 1345$) ; maŋan^yumpulu you du took it ($V_{dt} + 221 + 1345$).

2.3.2.9. Alternant set 363.2 occurs when preceded by 311 (according to subanalysis). 363.1 occur elsewhere. Examples are : wirilkul^yin^ypaŋaŋu he will don it ($V_{at} + 231 + 241 + 312 + 1367 (= 311 + 363)$) : wirilkul^yin^ypulaku he will put it on them du ($V_{at} + 231 + 241 + 312 + 2357 + 363$).

2.3.2.10. Suffix 371-391 has alternants -u (when following 361-381), -wa (when following (231 + 312) and (234 + 312)), and -a elsewhere. The alternant -wa and suffixes 231 and 234 are mutually conditioned in that

(1) by way of exception to the rule of phonological conditioning stated in 2.2.2.4., 231 does not alternate to a vowel-excluded shape when in sequence with (312 + 371-391), but retains -u- in its overt alternants ;
 (2) 234 alternates to -ka- (which occasionally varies sporadically to -ku-) when in sequence with (312 + 371-391). Examples are : wunmin^yalu his broke down (V_{bi} + 221 + 312 + 381 + 391) ; kulpuru let him return! (V_{bi} + 231 + 312) : kulpuwa let him return therefore! (V_{bi} + 231 + 312 + 371) ; wunmin^yikuwalu if only his were to break down! (V_{bi} + 221 + 234 + 371 + 381 + 391) ; wunmin^yina yours broke down (V_{bi} + 221 + 312 + 339 + 371).

2.3.2.11. The alternants of 519 are list-selected.

Examples are : pantalmaṭat^yi the place of desert walnut trees (N_s + 519) ; marṇumaṭat^yi the place where the aborigines are (N_s + 519) ; wankuRuru 1. stony place
 2. 'Western' movie (N_s(wanku stone) + 519) ; wilkiRiri rainbow (N_s(wilki curve) + 519).

2.3.2.12. The alternants of 521 are list-selected.

Examples are : kanupiniri he skinned it (V_{at}(N_b(kanu skin) + 521) + 221 + 312) ; muwarpinit^yi he spoke to me (V_{ai}(N_b(muwar speech) + 521) + 221 + 312 + 325) ; wankan^yumananta he saved you (from death) (V_{at}(N_s(wankan^yu alive) + 521) + 221 + 312 + 338) ; warpat^ywarpat^ykaramanat^yumpulu you du waved to me (V_{ai}(N_s(N_s + 811) + 521) + 221 + 325 + 1345).

2.3.2.13. Alternant 532.2 of suffix 532-622 is selected by members of N_c which have horizontal referents ; alternant 622.2 is selected by members of N_c having both horizontal and vertical referents, and by ηunari yonder, $n^y\text{ani}$ here, kara thus, and waRin^y other. 532.1 - 622.1 occurs elsewhere. Examples are : $\text{kakaraku}\dot{\text{t}}\text{it}^y\text{a}$ mara take it from the east side! ($N_c + 532 + 621 V_{dt} + 211$) ; $\text{yalin}^y\text{t}^y\text{iku}\dot{\text{t}}\text{i}$ yanin^yiri he's travelling in the northern quadrant ($N_c + 532 V_{di} + 222 + 312$) ; $\text{kaRaku}\dot{\text{t}}\text{i}$ ka\text{t}i northwest ($N_c + 532 + 532$) ; $\text{t}^y\text{ina}\eta\text{a}$ \eta\text{aluka}\dot{\text{t}}\text{i}\eta\text{i} in the sole of the foot ($N_b(\text{t}^y\text{ina foot}) + 642 N_b(\eta\text{alu belly}) + 532 + 642$) ; $\text{yalin}^y\text{t}^y\text{iku}\eta\text{u}$ yanin^yiri he's travelling northwards ($N_c + 622 V_{di} + 222 + 312$) ; $\text{waRin}^y\text{kun}\dot{\text{u}}$ t^yariyi head towards another compass point! ($V_{bi} (N_w + 622 + 2523) + 211$) ; $\text{mayaka}\dot{\text{t}}\text{i}$ yara go to the house! ($N_s + 622 V_{di} + 211$).

2.3.2.14. Alternants 534.2 and 534.3 of suffix 534-624 are selected by members of restricted lists of N . 534.1-624.1 occur elsewhere. Examples are : $\text{t}^y\text{itama}\text{t}^y\text{a}\dot{\text{t}}\text{u}$ thunderstorm from east ($N_s(N_s(\text{t}^y\text{itama lightning}) + 534)$) ; $\text{kun}\dot{\text{t}}\text{urt}^y\text{iri}$ muddy, of water ; dusty ($N_s(N_s(\text{kun}\dot{\text{t}}\text{ur dust, muddiness}) + 534)$) ; $\text{mamput}^y\text{a}\dot{\text{t}}\text{in}^y$ sheep ($N_s(N_b(\text{mampu hair, fur, wool}) + 534)$).

2.3.2.15. Alternant 652.4 of 542-652 is selected by one member of N_c (kanka above) ; 652.3 by two N_c (kuRili ~ ku - south and kakara ~ kaka - east) ; 652.2-542 is selected by other N_c , and by sequences of N_{vt} ($= V_t + 211$);

652.1 occurs elsewhere. Examples are : kankaRaṅu from above ($N_c(\text{kanka above}) + 652$) ; kakaṅi from the east ($N_c + 652$) ; kaRaṅu from the west ($N_c(\text{kaRa west}) + 652$) ; $t^y\text{an}^y t^y\text{alu}$ yantalkuru punarat y inaṅu let the sun get at it and dry it out! ($N_s + 641$ $V_{at} + 231 + 312$ $N_{vt}(V_{at}(N_s + 2711) + 221) + 652$) ; $t^y\text{impuṅulu}$ from the egg ($N_s + 652$).

2.3.2.16. Suffix 642 occurs in alternant 642.4 in the single sequence $t^y\text{uṅkuka-}$ carry in the mouth and in alternant 642.3 in the single sequence $t^y\text{aṅkat}^y\text{i-}$ put it in the mouth (see examples in 2.3.1.5.). 642.2 is selected by N_c ; 642.1 occur elsewhere. Examples are : kaRa t^y iri in the west ($N_c + 642$) ; paṅiṅi in the eye ($N_b + 642$).

2.3.2.17. Suffix 2611-2631-2661 has four alternants (2611.2-5) which are list-selected. All members of these lists are also N_k (kinship terms). The alternant 2611.1-2631.1-2661.1 occurs elsewhere. Examples are : piṅara paired younger brother and mother's brother's daughter, etc (N_k (piṅa- t^y i category of mother's brother's daughter) + 2611) ; $n^y\text{upaRara}$ paired son and sister's son (man speaking), etc (N_k ($n^y\text{upa-}t^y\text{i}$ category of mother's brother's daughter) + 2611) ; kaḷuṅu paired father's father and elder sister, etc (N_k (kaḷu- t^y i father's father, son's son) + 2611) ; kuṅṅalkara paired daughter and father's mother, etc (N_k (kuṅṅal daughter) + 2611);

marŋulut^yiri two aborigines, ergative ($N_s + 641 + 2661$).

2.3.2.18. Suffix 612-632-662 has ten alternants (612.2-11) which are list-selected, or which occur in sequence with a single noun. Exemplification follows in which one noun is listed in sequence with each alternant.

waRaraŋu rags ($N_s + 612.1$) ; yarapulan^yara
aeroplanes ($N_s + 612.2$) ; paŋan^ykaŋaŋu children (N_s
+ 612.3) ; paŋan^ywuŋu children ($N_s + 612.4$) ;
marŋukuru aborigines ($N_s + 612.5$) ; piRirimiŋi fully
initiated men ($N_s + 612.6$) ; miŋawan^yt^yari women (less
preferred in Wanyali than ŋal^yunkuru)($N_s + 612.7$) ;
yukurumuŋtu dogs ($N_s + 612.8$) ; kaŋapalkuRan^ya middle
siblings ($N_s + 612.9$) ; n^yarumpamaŋiŋi wives and
sisters ($N_s + 612.10$) ; Rampanumpanu grouped mother's
brothers and father's fathers, etc ($N_k + 612.11$).

2.3.2.19. Suffix 682, when preceded by 642 or 652, occurs in nonreduplicated shape (682.2). In other environments there is apparently free variation between 682.1 and 682.2 without change in meaning. Examples are : waŋal
purpin^yiri kuRilaŋumara the wind is blowing from near to
south ($N_s V_{oi} + 221 + 312 N_c + 652 + 682$) ;
t^yun^yt^yumaramara amongst the Velleia panduriformis
(broad-leaved poison shrubs) ($N_s + 682 + 642$).

2.3.2.20. Suffix 2711 occurs in alternant 2711.2 when in sequence with V_a or with members of a listable group of N . 2711.1 occurs elsewhere. Examples are : t^yula

warkit^yipili lead the blind person! ($N_s V_{at}(V_{ai}(\text{warki-}$
crawl, creep) + 2711) + 211) ; yawata wiṅṅit^yipilinpa-
 naṅalu don't frighten your horse! ($N_s V_{at}(N_s + 2711)$
 + 211 + 331 + 1367 + 371 + 411) ; ṅalpat^yilimin you
should make him enter ($V_{at}(V_{bi} + 2711) + 241 + 331$) ;
 miṅṅit^yiṅṅi I ran ($V_{ai}(N_s + 2711) + 221 + 311$).

2.3.2.21. Suffix 721 occurs in alternant 721.1 when in
 sequence with nouns, 721.2 with verbs. Examples are :
 maṅun^ypiṅi open law¹ ($N_s(\text{maṅun}^y \text{ Dreamtime}) + 721$) ;
 wuralpiṅi information ($N_s(V_{at}(\text{wura- tell}) + 721)$).

2.3.2.22. Suffix 722 occurs in four alternants, all of
 which are list-selected. 722.2 occurs in sequence with a
 verb, the other three alternants with nouns. Examples :
 t^yinul foot, as of bed ($N_b(t^y \text{ ina foot}) + 722$) ;
 kankaru head, as of bed ($N_c(\text{kanka above}) + 722$) ;
 pilur doughy part of bread ($N_b(\text{pilu viscera}) + 722$) ;
 t^yaRil clean (of water), clear (of eye) ($V_{bi}(t^y \text{ aRi- flow})$
 + 722).

2.3.2.23. Suffix 733 occurs in two alternants. 733.1 is
 selected by nouns, 733.2 by verbs (see examples in
 1.4.2.2.).

2.3.3. Reduplication

2.3.3.0. We posit a nondivisive reduplicative operator —
 111, variously glossable as diminutive, repetitive,
continuative, descriptive, and collective.

2.3.3.1. Alternants of 111 occurring in sequence with V
 are listed below in successive paragraphs.

$(V_a)_n(V_a)$. wiḷanwiḷanaḷana I patted it ($V_{at}(V_{at} +$
 111) + 221 + 311) (wiḷanaḷana I hit him) ; wiRirpinwiRir-
 pinini I kept on trying to strike (a match) ($V_{at}(V_{at}(N_s +$
 521) + 111) + 221 + 311) (wiRirpinini I scraped it) ;
 kan^yt^yin^ykan^yt^yinilpa he searched round for it long ago
 ($V_{aip}(V_{aip} + 111) + 221 + 242 + 312 + 371$) (kan^yt^yinilpa
he searched for it long ago).

Partial reduplication of V_a . wapawapakanakata prone
to jumping ($N_s(N_v(V_{ai}(V_{ai} + 111) + 221) + 812)$)
 (wapakanana I jumped).

$(V_b)^2$. ganiku kalikalin^yinpanin^ya why are you
scratching yourself? ($V_{bt}(V_{bt} + 111) + 221 + 331 + 1366 +$
 371) (kalin^yin you dug) ; wantuwantulumunu I'll con-
tinue to stay ($V_{bi}(V_{bi} + 111) + 241 + 311$) (wantulumunu
I'll stay) ; t^yupit^yupin^yiri wanayiṭi the rain is easing
 ($V_{bi}(V_{bi} + 111) + 221 + 312$ N_s) (t^yupin^yiri it is
stopping).

$(V_{c-d} + 221)^2$. yaṇiyanin^yiri he's wandering around
 ($V_{bi}(V_{di} + 111) + 221 + 312$) (yaṇin^yiri he's going).

$(V_e + 222)^2$. (This is not attested in the corpus, but is postulated on the basis of pattern analogy : *kaṅikaṅin^yini).

2.3.3.2. Alternants of lll occurring in sequence with N are listed below.

$(N_s + n)^2$. n^yarunn^yarun a smile ($N_s + 111$)
(n^yaru laughter).

$(N_s + r)^2$. wiḷkirwiḷkir crooked, zigzag ($N_s + 111$) (wiḷki curve).

$(N_{s,b} + 1^y)^2$. mampul^ymampul^y hairly ($N_b + 111$)
(mampu hair) ; piḷil^ypiḷil^y full of holes ($N_s + 111$)
(pili hole not in the ground).

Partial reduplication of N_s or N_b . waṅkarunṅkaru ~
waṅkaraṅkara spider web ($N_s + 111$) (waṅkaru spider) ;
kumpurumpuru bladder ($N_b + 111$) (kumpu urine).

$(N_s)^2$. ḷirpiḷirpi scattered clouds ($N_s + 111$)
(ḷirpi chip of wood) ; palkunpalkun mackerel sky
($N_s + 111$) (palkun cicatrice) ; pinkapinka skull
($N_s + 111$) (pinka seashell) ; miṭan^yamiṭan^ya all the
older people ($N_s(N_b + 515) + 111$).

Most, though not all, color terms are sequences of $(N_s + 111)$ or $(N_b + 111)$. Examples are : pit^yiripit^yiri red ($N_b + 111$) (pit^yiri blood) ; warul^ywarul^y green ($N_s + 111$) (warul^y green grass, greenery) ; punṭapunṭa grey ($N_s + 111$) (punṭa ash) ; miṭamiṭa white (as clothes, paper) ($N_b + 111$) (miṭa grey hair, old person).

Some time expressions are sequences of ($N_s + 111$).

Example : RukaRuka about 4 p.m. ($N_s + 111$) (Ruka late afternoon — about 5 or 6 p.m.).

In the example below, ($N_b + 111$) is in obligatory sequence with a member of 500: panipanimanan^yi t^yan^yt^yaiu
the sun is dazzling me ($V_{at}(N_b(\text{pani eye}) + 111 + 521) + 221 + 312 + 324 N_s + 641$).

In the following example, ($N_b + 111$) is obligatorily compound-included (as first member) : kanukanukan^yiri
it's shedding its skin ($V_{ei}((N_b(\text{kanu skin}) + 111) + ka-(V_{et}) \text{carry}) + 222 + 312$). (kanu skin, being a noun, is an independent stem ; *kanukanu is not attested in isolation).

As indicated in 1.6.1., numerous nouns occur in reduplicated shapes for which nonreduplicated analogs are not attested. There is also a category of reduplicated shapes whose meaning appears to be totally unrelated to that of the nonreduplicated analog, e.g. wariwari wild bean tree : wari cold. In cases such as wariwari we posit a unitary morpheme, rather than ($N_s + 111$).

2.3.3.3. Examples of 111 occurring in sequence with ($N + 600$) are listed below.

paRunupaRunu yanara he walked all the way in the spinifex ($(N_s + 642) + 111 V_{di} + 221 + 312$) (paRu spinifex) ; karpunukarpunu about 30 minutes before sunrise ($(N_s + 642) + 111$) (karpu sun).

NOTE

1. I owe this form to H. Petri.

CHAPTER THREE

MORPHOLOGY

3.0. This chapter relates to the morphemic composition of stems and to the privileges of occurrence of stems in sequence with suffixes. For the purposes of stating these distributions, we group morphemes trichotomously — into (1) M(ajor), numbering in the thousands, (2) m(inor), numbering less than sixty, and (3) $\frac{M}{m}$ ~ $\frac{m}{M}$, numbering a dozen or more (by inventory count).

By text count, M as a class account for 42% of all morphemes ; individual members of M recur infrequently. The classes m and $\frac{M}{m}$ ~ $\frac{m}{M}$ account respectively for 50% and 8% of all morphemes in texts, and their individual members recur with high frequency. Unless occurring in compounding, M characteristically enjoy a highly flexible relative order relationship with each other within the contour span. Of the six possible permutations in the order of subject, object, and verb, all occur in texts. Such permutations of M are non-message-altering. Members of m are either the operator of reduplication, or suffixes occurring in most cases in unique relative order relationships with each other and with those members (or classes) of M with which they occur in sequence. In cases where permutations of m are possible, such permutations are invariably message-altering. $\frac{M}{m}$ ~ $\frac{m}{M}$ are morphemes which partake of the characteristics of M in some of

their occurrences, and of m in others. Instances of the former are symbolized $\frac{M}{m}$, and of the latter, $\frac{m}{M}$.

M occur in three classes — V(erbs), N(ouns), and P(articles) — the membership of which is determined by criteria of combinability with suffixes or sets of suffixes referred to as DIVISIVES. Divisives are those suffixes which are exclusively combinable with all members of a given class of M . Non-divisives are suffixes which (1) are combinable only with certain members of a given class of M — in which case they are diagnostic of subclasses of that class, or (2) are combinable with members of more than one class.

In the minor morpheme and $\frac{m}{M}$ inventory which follows, several conventions are adopted relative to the categorization of morphs :

(1) We formally demark a boundary between levels of morphemic analysis and subanalysis by introducing a distinction between IN-CLUSTER MORPHEME SEQUENCES and OUT-OF-CLUSTER MORPHEME SEQUENCES. The latter are involved in traditional morphemic analysis. The former are polymorphic sequences (in some cases occurring in complementary distribution with single morphs) which function as single entities in verb morphology and have referents such as 2nd du actor, 1st pl excl actor. Such sequences (all of which are also members of $\frac{M}{m} \sim \frac{m}{M}$) are identified by the millennial prefix 1. Other members of $\frac{M}{m} \sim \frac{m}{M}$ are

identified by millennial prefix 2. In other respects, the numbering of $\frac{M}{m} \sim \frac{m}{M}$ integrates with that of m .

(2) Minor morphemes are numbered by centuries according as they are operators or suffixes, and according to the classes of M with which they occur in sequence. The single member of 100 is a nondivisive operator. Suffixes listed in centuries 200, 300-1300-2300, and 400 combine only with V ; 500-2500 and 600-2600 combine only with N ; 700-2700 combine with certain subclasses of V and N ; 800-2800 with certain subclasses of N and P ; 900 with certain subclasses of V , N , and P .

(3) Suffixes which are mutually exclusive and have similar — but not necessarily identical — distribution are grouped in decades. Suffixes of a given decade which are subcategorizable on grounds of minor distributional differences are numbered in discontinuous sequence (e.g. 361, 362, 366, 367).

(4) Suffixes which occur in more than one order relative to the stem are numbered doubly in the inventory, e.g. 532-622. In subsequent exemplification, such suffixes are identified by single number only, depending on the relative order occurring in a particular example.

(5) Morpheme alternants whose distribution is morphologically determined are distinguished by alphabetic notation (where the selectors are verb stems), otherwise by differential decimal numbering. Phonologically determined alternants are not so distinguished.

Minor Morpheme Inventory

100 Operator

110 Reduplication

111 diminufactive, continuative, descriptive,
collective

200 Suffixes of Relative Orders 1-3 in Seq(uence) V

210 Mood, Order 1, S(tatus) Q(uo)

211 imperative

211.a -lV ~ -l-

211.b.1 -yi ~ -ya- ~ -y-

211.b.2 -∅

211.c -lA ~ -l-

211.d -rA ~ -r-

211.e -wa

220 Tense₁, Order 1, SQ and Tr(ansformative)

221 realis nonfuture-nominalizing (in seq
V_{a-b}) ; past (in seq V_{c-e})

221.a -nV- ~ -n-

221.b -n^yi- ~ -n^ya- ~ -n^y-

221.c-d -nA- ~ -n-

221.e -n^ya- ~ -n^y-

222 realis present-nominalizing (only in seq V_{c-e})

222.c-d -nin^yi- ~ -nin^ya- ~ -nin^y-

222.e.1 -nin^yi- ~ -nin^ya- ~ -nin^y-

222.e.2 -ni- ~ -na-

230 Aspect, Order 2, SQ

231 optative

231.a,c -lku-

231.b -∅-

231.d -nku-

231.e -ŋku-

232 -kin^yA- ~ -kin^y- (past) continuative

233 -mV- ~ -m- (past) irrealis

234 -kV- volitional

240 Tense₂, Order 3, SQ

241 future

241.1 -lVmV- ~ -lVpa- ~ -lVpi-

241.2 -lin^y ~ -lin^ypa- ~ -lin^ypi-
~ -lin^yp-

242 -l- ~ -lpV- ~ -lp- (past) remote

250 Order 1, Tr (Nominalizing)

251 -lkara human agent

300 Person-marking Suffixes (Rel Orders 4-12) in seq V (SQ)

310 Singular Actor, Non-2nd, Order 4

311 -nV ~ -n- 1st

312 3rd

312.1 -rV

312.2 -ŋa

312.3 -∅

320-360 1st Singular Non-actor, Orders 5 and 9

324-364 -n^yi ~ -n^ya- ~ -n^y- direct goal

325-365 -t^yi ~ -t^yu- ~ -t^y- indirect goal

330(-360) 2nd Singular, Orders 6 and 9

331 -n ~ -npV- ~ -np- actor

338-368 -ntV ~ -nt- direct goal

339-369 -ŋu ~ -ŋ- indirect goal

340-350 Nonsingular, Orders 7 and 8

2341-1351 1st du incl

2341.1 -li ~ -la- ~ -l-

1351.2 -ŋali-

2342-1352 1st pl incl

2342.1 -n^yi ~ -n^yu ~ -n^ya- ~ -n^y-

1352.2 -ŋan^yt^yurV-

1343-1353 1st du excl

1343.1 -layi ~ -laya- ~ -lay-

1353.2 -ŋalayi- ~ -ŋalaya-

1344-1354 1st pl excl

1344.1 -yini ~ -yiŋa- ~ -yiŋ-

1354.2 -ŋanA-

1345-1355 2nd du (non-imp); 2nd sing (to MoBr) (*non-imp*)

1345.1-1355.1 -n^yumpulV ~ -n^yumpul-

1345.2 -umpulu ~ -umpul-

1346-1356 2nd pl (non-imp)

1346.1-1356.1 -n^yurV ~ -n^yur-

1346.2 -uru ~ -ur-

2347-2357 -pulV ~ -pul- 3rd du (non-imp) ;
2nd du (imp, to non MoBr) ;
2nd sing (imp, to MoBr)

2348-2358 3rd pl (non-imp) ; 2nd pl (imp)

2348.1 -yi ~ -ya- ~ -y-

2358.2 -t^yanA-

360(-380) Non-actor, Orders 9 and 11

361-381 -lV ~ -l- 3rd sing indirect goal

362 -n^yi ~ -n^y ~ -n^y- nonsingular and
reflexive-reciprocal direct goal

363 nonsingular and reflexive-reciprocal
indirect goal

363.1 -ku ~ -k-

363.2 -ŋu ~ -ŋ-

1366 -n^yi ~ -n^y ~ -n^y- direct
reflexive-reciprocal

1367 -nVŋu ~ -nVŋ- indirect reflexive-
reciprocal

370-390 Relational, Orders 10 and 12

371-391 purposive-benefactive

371.1 -a

371.2 -wa

371.3 -u

400 Closing Suffixes in seo V

410 Aspect-Mood, Order 13, SQ

411 -lV avolitional-admonitive

412 -ŋVrV (past) conditional

500 Stem-forming Suffixes in seo N

510 Order 1, SQ

511 -pinti complementive

512 -munin^y consanguinative

513 -pirayi derogative

514 -kil place name formative

515 -n^ya personalizing

516 -mal frequentive

517 -ri place adverb formative, descriptive

518 -t^yi singular kin

519 locational

519.1 -maṭat^yi

519.2 -RVrV

520 Order 1, Verbalizing

521 stative transitive-intransitive

521.1 -pi-

521.2 -mV-

2522 -kari- stative intransitive

2523 -t^yari- inceptive intransitive

530-620(-670) Functional Overlap Class, Order 2, SQ

531-621-671 -t^ya resultative

532-622 adessive

532.1-622.1 -kaṭi

532.2 -kuṭi

533-623 -kulu privative

534-624 possessed of

534.1-624.1 -t^yaṭin^y ~ -t^yaṇin^y

534.2 -t^yaṭu

534.3 -t^yiri

535-625-675 -mili ~ -mila- possessive

540-650 Functional Overlap Class, Order 2, SQ

542-652 -ṅu relative

600 Non-stem-forming Suffixes in seo N

610 Number, Order 1, SQ (See under 660)

620-530(-670) Functional Overlap Class (Relational₁),
Order 2, SQ

621-531-671 -t^ya from, after

622-532 towards

622.1-532.1 -kaṭi

622.2 -kunu

623-533 -kulu without, -less

624-534 -t^yaṭin^y ~ -t^yaṇin^y possessed of

625-535-675 -mili ~ -mila- of

630 Number, Order 3, SQ (See under 660)

640 Relational₂, Order 4, SQ

641 -lu ~ -t^yu ergative, transitive actor

642 locative

642.1 -ŋV ~ -t^yi

642.2 -t^yiri

642.3 -ŋka-

642.4 -ŋku-

643 -mun^yil free of

644 -n^yuku on target

2645 -waṭuwaṭu hidden by, covered by

2646 -wanti ready for

650(-540) Relational₃, Order 5, SQ

651 -ku for, to

652-542 1. away from 2. consequential

652.1 -ŋulu

652.2 -ŋu

652.3 -ni

652.4 -Raŋu

660-610-630 Number, Orders 1, 3, 6, SQ

2611-2631-2661 dual

2611.1-2631.1-2661.1 -t^yiri

2611.2 -rV

2611.3 -RVrV

2611.4 -ŋu

2611.5 -kuru ~ -kura- ~ -kara

612-632-662 plural

- 612.1-632.1-662.1 -raḡu ~ -araḡu ~ -ḡu
- 612.2 -ara
- 612.3 -karḡu
- 612.4 -wuḡu ~ -wuḡa-
- 612.5 -kuru ~ -kura-
- 612.6 -miḡi ~ -miḡa-
- 612.7 -n^yt^yari
- 612.8 -munḡu
- 612.9 -kuRan^ya
- 612.10 -maḡiḡi ~ -maḡiḡu ~ -maḡiḡka
- 612.11 -mpanu

670 Relational₁, Order 7, SQ

- 671-621-531 -t^ya from, after
- 675-625-535 -mili ~ -mila- of

680 Closing, Order 8, SQ

- 681 -kuRin^y instead of
- 682 near to, pertaining to
 - 682.1 -maramara
 - 682.2 -mara
- 683 -kupali ~ -kupanu ~ -kapanu ~ -kapana
similar to
- 684 -yinki in contact with
- 685 -yuwi putative
- 686 -maḡa comparative, moderative
- 2687 -pali ~ -pālu demonstrative

700 Suffixes in seq V and N

710 Nonclosing, Order 1, Verbalizing

2711 causative

2711.1 -t^yi-

2711.2 -t^yipi-

720 Stem-forming (Nominalizing), Order 1

721 abstractive

721.1 -piṭi

721.2 -lpiṭi

722 descriptive

722.1 -ul

722.2 -l

722.3 -ru

722.4 -r

730 Closing, SQ

731 -pa relative

732 -kura causal

733 vocative

733.1 -kayi

733.2 -ku

800 Suffixes in seq N and P

810 Nominalizing

811 -kVrV adverbial

812 -kVtV habitulative

820 Closing, SQ

2821 -yit^yi ~ -t^yi assertive

900 Suffixes in seq V, N, and P

910 Closing, SQ

911 -la emphatic

912 -ti particularizing

3.1. Stem Composition

3.1.0. STEMS are defined as single morphemes or juncturally uninterrupted sequences of morphemes (optionally terminating in one of suffixes 221, 222, 251, or a member of 500, 710, 720, or 810).

Those of the above which are DEPENDENT and can be immediately followed by the divisive suffix 221 are V(erbs). Those which are INDEPENDENT and can be immediately followed by the divisive suffix 651 are N(ouns). Those which cannot be immediately followed by 221 or 651 are P(articles). Some P are dependent, some independent. A single morpheme which meets one of the above sets of criteria is termed a ROOT (V^x , N^x , or P^x), exemplified by naka- (V^x) send, t^yuru (N^x) snake, and put^yu (P^x) if. STEM-FORMING SUFFIXES (SF) are those suffixes — listed in parentheses in the preceding paragraph — which can be immediately followed by one or other of the divisives 221 and 651.

COMPOUNDS are a category of stems containing two or more M or $\frac{M}{m}$ — including sequences of Stem + non-SF

+ Stem — in which (1) primary stress is limited to the first member, (2) the members occur in fixed order relative to each other, and (3) no extraneous morpheme can intervene between the constituent members.

A relatively low number of N — probably less than 10% of those listed in the lexicon — are polymorphemic. About two-thirds of V (as listed in the lexicon) are polymorphemic, with SF predominating over compounding in frequency of occurrence. In texts, on the other hand, two-thirds of V are monomorphemic.

Compounding is discussed in section 3.1.1., and SF-included sequences in 3.1.2.

3.1.1. Compounding

3.1.1.1. Verb compounds involve a relatively large number of morphemes as first member, and relatively few as second member, and are accordingly discussed from the point of view of the latter. Examples follow, listed in successive paragraphs, of verbs occurring as second member in compounds.

(1) -ya- (V_{di}) go ; common to all compounds which include this morpheme is the referent verb of motion.
 Examples are : punan^ymariyanin^yiri he's walking along with his hands clasped behind him ($V_{di}(N_s + -ya-) + 222 + 312$) ; Ra·rRa·rkarayanara it went along with a rustling noise (as snake) ($V_{di}((P + 111) + 811 + -ya-) + 221 + 312$);
waṭayanara he went off the road, he went the wrong way

(V_{di}(P_d + -ya-) + 221 + 312).

(2) -ka- (V_{et}) carry. t^yitaŋkakawa carry it on your head! (V_{et}(N_b + 642 + -ka-) + 211); kaRirkan^yana I slipped (V_{ei}(N_s + -ka-) + 221 + 311); waŋakan^yara he took it off the road, he took it the wrong way (V_{et}(P_d + -ka-) + 221 + 312).

(3) -yI- (V_{etp}) give. murayin^yan^ya he cheated me (V_{etp}(P_d + -yI-) + 221 + 312 + 324 + 371).

(4) -yaka- (V_{atp}) leave, quit. mituyakaŋaŋa I didn't believe him (V_{atp}(N_s + -yaka-) + 221 + 311).

(5) -paŋi- (V_{ai}) (not attested outside of compounds). t^yunarapaŋiŋiya^{lu} they encircled him (V_{ai}(N_s + -paŋi-) + 221 + 2348 + 361); kuŋipaŋiŋipulu they du are fighting (V_{ai}(N_s + -paŋi-) + 221 + 2347).

(6) -kama- (V_{ai}) call, shout. t^yuRikamala taste it! (V_{at}(N_s + -kama-) + 211).

(7) -pat^yi- (V_{at}) bite. t^yuRipat^yina he tasted it (V_{atp}(N_s + -pat^yi-) + 221 + 312 + 371); mi^yapat^yina he rubbed his nose (V_{aip}(N_b + -pat^yi-) + 221 + 312 + 371).

(8) -Ruwi- (V_{bt}) hit with missile. ŋiŋiŋiRuwin^yini I twisted it (V_{bt}(N_s + -Ruwi-) + 221 + 311).

(9) -puri- (V_{at}) pull. ŋaŋaŋpurili stretch it! (V_{at}(N_s + -puri-) + 211).

The following exemplifies compounding of the type
N + 600 + V : paniluyirininjalayiku you are jealous of
us du excl ($V_{ai}(N_b(\text{pani eye}) + 641 + V_{at}(\text{yiri- see})) +$
 $221 + 331 + 1353 + 363$).

Compounding of two V is exemplified in kamapina-
karin^yininti I heard you calling out ($V_{bt}(V_{ai}(\text{kama-}$
call out) + $V_{bt}(\text{pinakari- hear})) + 221 + 311 + 338$).

3.1.1.2. Noun compounds are exemplified below.

mitut^yawa false teeth ($N_b(N_s(\text{mitu false, false-}$
hood) + $N_b(t^y\text{awa mouth}))$); kalurut^yawa carpet snake
($N_s(N_s(\text{kaluru black}) + N_b(t^y\text{awa mouth}))$) ($T^y\text{awa-}$
kaluru also occurs with the same referent);
kut^yarapawaRat^ya three ($N_n(N_n(\text{kut}^y\text{ara two}) + P_c$
(pa and) + $N_n(\text{waRat}^y\text{a one}))$); kamit^yikapalit^yi
large vehicle, e.g. grader or semitrailer ($N_s(N_k(\text{kami-}$
+ 518 mother's mother) + $N_k(\text{kapali-} + 518 \text{father's}$
mother)); t^yapunkutu^tu kitten ($N_s(N_s(t^y\text{apun joey,}$
kangaroo's young) + $N_s(\text{ku}^t\text{utu puppy}))$); pitapita-
wanku European cat gone wild ($N_s(N_b(\text{pitapita forehead}$
+ $N_s(\text{wanku stone}))$); wiṭirṅumpa policeman ($N_s(N_s$
(wiṭir severe, stern) + $N_b(\text{ṅumpa face}))$);
walaṅkarpuluku leader ($N_s(N_s(\text{walaṅkar ahead}) + N_s$
(puluku person, 'bloke')); yanin^yipuluku traveller
($N_v(V_{di}(\text{ya- go}) + 222) + N_s(\text{puluku person})$).

3.1.2. SF-included Sequences

3.1.2.1. Types of V in which the member to the right is an SF are exemplified below.

(1) N + 521. t^yagapiniri he spat (V_{ai}(N_b(t^yaga saliva) + 521) + 221 + 312) ; paRapiniri he subincised him (V_{at}(N_b(paRa urethra) + 521) + 221 + 312) ; t^yapirminina I asked him (V_{atp}(N_s(t^yapir request) + 521) + 221 + 311 + 371).

(2) N + 111 + 521. panipanimanara it dazzled him (V_{at}(N_b(pani eye) + 111 + 521) + 221 + 312).

(3) N + 2522. warikarin^yini I am cold (V_{bi}(N_s + 2522) + 221 + 311) ; waRarkarin^yiri he was standing (= he was in a standing position) (V_{bi}(N_s + 2522) + 221 + 312). In pinakarin^yiri he heard it, pinakari- is analyzed as a monomorphemic V, since pina- never occurs unless followed by -kari-.

(4) N + 2523. mil^ya kanin^yt^yarin^ya he stooped over (N_b(mil^ya nose) (V_{bip}(N_c(kanin^y down) + 2523) + 221 + 312 + 371)) ; waRart^yarin^yiri he stood up (V_{bi}(N_s(waRar standing position) + 2523) + 221 + 312).

(5) N + 600 + 2523. waRat^yagat^yarin^yipulu they du got married (V_{bi}(N_n(waRat^ya one) + 642 + 2523) + 221 + 2347); kaRagut^yarin^yini I turned eastwards (V_{bi}((N_c(kaRa) west) + 652) + 2523) + 221 + 311).

(6) N + 2711. $kun\dot{t}an^y t^y inin^y in$ you embarrassed me ($V_{at}(N_s + 2711) + 221 + 324 + 331$) ; $win\dot{t}it^y ipini-$
 $n^y in$ you frightened me ($V_{at}(N_s + 2711) + 221 + 321 + 331$).

(7) N + 600 + 2711. $\eta ura\dot{n}at^y iniri$ he married her ($V_{at}(N_s(\eta ura \text{ camp}) + 642 + 2711) + 221 + 312$) ;
 $pi\dot{t}i\dot{n}it^y inini$ I buried it ($V_{at}(N_s(pi\dot{t}i \text{ hole in ground}) + 642 + 2711) + 221 + 311$).

(8) V + 2711. $\eta alpat^y inin\dot{i}t^y anin^y i$ I made them enter ($V_{at}(V_{bi}(\eta alpi- \text{enter}) + 2711) + 221 + 311 + 2358 + 362$).

3.1.2.2. Types of N in which the member to the right is an SF are exemplified below.

(1) $V_{a-b} + 221$, $V_{c-e} + 222$. $t^y urka\dot{n}a \text{ yakan}\dot{a}ka$
I wish he would quit stamping his feet ($N_s(V_{at} + 221) + V_{atp} + 221 + 234 + 312 + 371$). There are also sequences of ($V + 220$) + 500 or 812, e.g. $wa\dot{t}ma\dot{n}apinti$ tire patch ($N_s(V_{at}(wa\dot{t}-ma- \text{adhere})(N_s + 521) + 221) + 511$) ;
 $pit^y un\dot{u}t^y a$ a bruise ($N_s(V_{ai}(pit^y u- \text{be bruised}) + 221) + 531$) ; $yiri\dot{n}iku\dot{l}u$ invisible ($N_s(V_{at}(yiri- \text{see} + 221) + 533)$) ;
 $\eta ul^y a\dot{n}amili$ soap ($N_s(V_{at}(\eta ul^y a- \text{wash}) + 221) + 535$) ; $\eta a\dot{n}in^y imili$ edible ($N_s(V_{ct}(\eta a- \text{eat}) + 222) + 535$) ; $muwarpi\dot{n}ikiti$ 1. talkative 2. orator ($N_s(V_{ai}(N_b(\text{muwar speech, language}) + 521) + 221) + 812$) ;
 $wura\dot{n}akata$ informative ($N_s(V_{at}(wura- \text{tell}) + 221) + 812$) ; $wura\dot{n}akul\dot{u}kutu$ uninformative ($N_s(V_{at}(wura-$

tell) + 221) + 533 + 812).

(2) V + 251. kampalkara cook, chef ($N_s(V_{at} + 251)$) ; t^y ipalkara driver ($N_s(V_{at} + 251)$)).

(3) N + 511. ṅaṅkapinti razor ($N_s(N_b(\text{ṅaṅka beard}) + 511)$) ; t^y ut y upinti comb ($N_s(N_b(t^y\text{ut}^y\text{u head}) + 511)$)).

(4) N + 512. pipimunin y Ego's own (non-classificatory) mother ($N_s(N_k(\text{pipi classificatory Mo, MoSi}) + 512)$)).

(5) N + 513. mayipirayi rubbishy food ($N_s(N_s(\text{mayi vegetable food}) + 513)$) ; wal y pilipirayi poor white man ($N_s(N_s(\text{wal}^y\text{pili white man}) + 513)$)).

(6) N + 514. ṅarpat y uṅṭikil (name of a particular rockhole) ($N_s(N_s(\text{ṅarpa ??}) + N_s(t^y\text{uṅṭi cave}) + 514)$)).

(7) N + 515. miṭan y a old person ($N_s(N_b(\text{miṭa grey hair}) + 515)$)).

(8) N + 516. maḷumal often ($N_s(N_n(\text{maḷu many}) + 516)$) ; kut y aramal twice ($N_s(N_n(\text{kut}^y\text{ara two}) + 516)$)).

(9) N + 517. palari there, near ($N_s(N_d(\text{pala that, near}) + 517)$) ; kuḷkari mindful ($N_s(N_b(\text{kuḷka ear}) + 517)$)).

(10) N + 518. t^y amut y i mother's father (N_k

(N_i + 518)) (obligatorily in sequence).

(11) N + 519. pantalmat^yi the place of the desert walnut trees (N_s(N_s(pantal desert walnut tree) + 519)).

(12) N + 531. pulpit^ya old (N_s(N_s(pulpi in the past, formerly) + 531)) ; waṅkarut^ya web (N_s(N_s(waṅkaru spider) + 531)).

(13) N + 532. kaRakuti the west side (N_s(N_c(kaRa west) + 532)).

(14) N + 533. n^yarukulu solemn (N_s(N_s(n^yaru laughter) + 533)) ; mayikulu foodless, foodlessness (N_s(N_s(mayi vegetable food) + 533)).

(15) N + 534. wapalt^yaṭin^y porcupine (N_s(N_s(wapal hobbles (Eng. loan)) + 534)) ; mamput^yaṭin^y sheep (N_s(N_b(mampu hair, fur, wool) + 534)).

(16) N + 535. warit^yirimili ice (N_s(N_s(wari cold + 534) + 535)) ; ṅat^yumili that which is mine (N_s(N_p(ṅat^yu I) + 535)). Members of 530 are recombina- ble, e.g. mayikulut^ya famished (N_s(N_s(mayi vegetable food) + 533 + 531)) ; palin^ymilit^ya the one (e.g. letter) from his (e.g. wife) (N_s(N_p(palin^y he, she) + 535 + 531)). In theory, any member of 530 is recursive¹, e.g. *ṅat^yumilimilimili... the one belonging to the one belonging to the one ... belonging to me, but this is not yet attested for Nyaṅumaṭa.

(17) N + 542. kaRa^ygut^ya from the west (N_s(N_c
(kaRa west) + 542 + 531)).

(18) N + 721. ma^ygun^ypi^ti open law (N_s(ma^ygun^y
Dreamtime) + 721).

(19) V + 721. wura^lpi^ti information (N_s(V_{at}(wura-
tell) + 721)).

(20) N + 722. kanka^ru head, as of bed (N_c(kanka.
above) + 722).

(21) V + 722. t^ya^ri^l clean, clear (N_s(V_{bi}(t^ya^ri-
flow) + 722)).

(22) N + 811. n^yi^miⁿ^ykara a blink (N_s(N_s(n^yi^miⁿ^y
blink) + 811)).

(23) P + 811. pi[·]p^kuru noise of car horn (N_s(P
(pi[·]p beep!) + 811)).

(24) N + 812. mi^ti^ki^ti car (N_s(N_s(mi^ti act of
running) + 812)) ; ka^ri^ki^ti an alcoholic (N_s(N_s(ka^ri
bitter, liquor) + 812)).

(25) P + 812. muⁿu^kata disinclined, negative
(N_s(P(muⁿu no, not) + 812)).

3.2. Sequences of V + non-SF

3.2.0. The Nyanumata verb stem occurs in obligatory sequence with at least one suffix — i.e. it is dependent. An example of the minimally expanded verb word is kawa carry it! ($V_{et} + 211$). An example of a complex verb stem in sequence with a relatively large number of non-SF suffixes — not itself attested but analogizable from other forms — is waRin^ykunut^yinimilpilayin^yumpulukajara he and I would have caused the one belonging to you du to turn in a different direction long ago ($V_{at}(N_n (waRin^{y}}$ other) + 622 + 2711) + 221 + 233 + 242 + 1343 + 1355 + 363 + 371 + 412), in which 1343 and 1355 are subsequently cut, on the level of subanalysis, into two morphemes each.

Verb morphology is treated herein in three separate stages. In the first two — discussed in 3.2.1. and 3.2.2. — sequences of $V + 200 + 300 + 400$, and $V + \dots + 730/900$, are stated (1) exclusive of permutations and combinations of 300, except where sequences of non-300 are determined by 300, and (2) exclusive of permutations and combinations of non-300. In the third, members of 1000 are subjected to subanalysis.

Verb stems are categorized in terms of four separate parameters, indicated in notation by small roman letters, occurring in left-to-right succession in the order in which they are listed below.

(1) The series relating to the first parameter (a-e) denotes membership in morphophonemic subclasses (see 2.3.2.1.).

(2) In the second parameter, s indicates that of actor categories, third person singular (312) alone is compatible with a given stem (as in puyin^ya I am full, sated ($V_{astp} + 221 + 324 + 371$)) ; z indicates that singular actor (311, 312, or 331) is incompatible with the stem so marked (e.g. kurṇanapulu they du are conversing ($V_{azi} + 221 + 2347$)). Absence of the symbols s and z denotes lack of restriction on the cooccurrence of actor with stem.

(3) In the third parameter, all verb stems are accompanied by one of two symbols : t(transitive) denotes compatibility with direct object suffixes or suffix sequences, viz. 324, 338 ... ; i(ntransitive) denotes incompatibility with such suffixes (see the two examples in (2) above).

(4) In the fourth parameter, the symbol p distinguishes stems which occur obligatorily in sequence with suffix 371 (as in the first example in (2) above). Other stems are unmarked for this parameter.

3.2.1. Sequences of non-300 non-SF Verb Suffixes

3.2.1.1. Occurrences of 200 and 400 in sequence with V, together with the corresponding negative transformations (i.e. preceded by the particle *munu*), and possible sequences of V + 220 + 651 are accounted for below. For all sequences in which either 311 or 312 can occur, the latter is used in exemplification only in such instances as involve suffixial selection which is nonidentical with that of 311. Examples are drawn from all five morphophonemic subclasses only in cases where suffix selection is determined by such subclasses.

(1) V + 211 abrupt imperative. $\text{min}^{\text{y}}\text{t}^{\text{y}}\text{ili}$
light it! ($V_{\text{at}} + 211$). *munu* $\text{min}^{\text{y}}\text{t}^{\text{y}}\text{ilinpili}$ don't
light it! (P $V_{\text{at}} + 211 + 331 + 411$) ($\text{min}^{\text{y}}\text{t}^{\text{y}}\text{ilinpili}$
 also occurs with identical referent); (*munu*) $\text{min}^{\text{y}}\text{t}^{\text{y}}\text{i-}$
 linili I'd better not light it, let me not light it
 ((P) $V_{\text{at}} + 211 + 311 + 411$); (*munu*) $\text{min}^{\text{y}}\text{t}^{\text{y}}\text{ilili}$
he'd better not light it, he might light it (with
 admonitive implication) ((P) $V_{\text{at}} + 211 + 312 + 411$).

(2) $V_{\text{a-b}} + 221$ nonfuture realis, $V_{\text{c-e}} + 221$ past
realis. $\text{min}^{\text{y}}\text{t}^{\text{y}}\text{inini}$ I am lighting it, I lit it ($V_{\text{at}} +$
 $221 + 311$); $\text{kan}^{\text{y}}\text{ana}$ I carried it ($V_{\text{et}} + 221 + 311$).
munu $\text{min}^{\text{y}}\text{t}^{\text{y}}\text{inikini}$ I am not lighting it (P $V_{\text{at}} + 221$
 $+ 234 + 311$); *munu* $\text{galpin}^{\text{y}}\text{ikini}$ I am not going in
 (P $V_{\text{bi}} + 221 + 234 + 311$); *munu* $\text{nanin}^{\text{y}}\text{ikini}$ I am

not eating it (P $V_{ct} + 222 + 234 + 311$) ; munu yanı-
n^yikini I am not going (P $V_{di} + 222 + 234 + 311$) ;
munu ka^yin^yikini I am not carrying it (P $V_{et} + 222 +$
 $234 + 311$). munu min^yt^yinimini I didn't light it
(P $V_{at} + 221 + 233 + 311$) ; munu ɲalpimini I didn't
go in (P $V_{bi} + 233 + 311$) ; munu ɲaⁿamaⁿa ~ munu
ɲanimini I didn't eat it (P $V_{ct} + 221 + 233 + 311$) ;
munu yaⁿamaⁿa ~ munu yaⁿimini I didn't go (P $V_{di} +$
 $221 + 233 + 311$) ; munu kaⁿamaⁿa ~ munu kaⁿimini I
didn't carry it (P $V_{et} + 222 + 233 + 311$).

(3) $V_{c-e} + 222$ present realis. ka^yin^yini I am
carrying it ($V_{et} + 222 + 311$). The corresponding nega-
tive sequences are stated in (2) above.

(4) $V_{a,c-d} + 221 + 233$, $V_b + 233$, $V_e + 222 + 233$
past irrealis, past conditional (protasis). min^yt^yinimini
I was about to light it, I should have lit it, if I had
lit it ($V_{at} + 221 + 233 + 311$). See also munu ɲalpimini
etc. under (2) above.

(5) (4) (+ 300) + 412 past conditional (apodosis).
min^yt^yinimini^ɲiri I would have lit it ($V_{at} + 221 + 233$
 $+ 311 + 412$) ; munu min^yt^yinimini^ɲiri I wouldn't have
lit it (P $V_{at} + 221 + 233 + 311 + 412$).

(6) $V_{a-b} + 221 + 234$, $V_{c-e} + 222 + 234$ volitional.
min^yt^yinikini I want to light it ($V_{at} + 221 + 234 +$

311) ; $\text{min}^y \text{t}^y \text{inikiri}$ I wish he would light it (V_{at} + 221 + 234 + 312) ; $\text{ganin}^y \text{ikiri}$ I wish he would eat it (V_{ct} + 222 + 234 + 312).

(7) , c-d + 221 + 232, V_b + 232, V_e + 222 + 232 past continuative. $\text{min}^y \text{t}^y \text{inikin}^y \text{ini}$ I was lighting it (V_{at} + 221 + 232 + 311) ; $\text{galpikin}^y \text{ini}$ I was entering (V_{bi} + 232 + 311) ; $\text{ganikin}^y \text{ini}$ I was eating it (V_{ct} + 221 + 232 + 311) ; $\text{yanikin}^y \text{ini}$ I was going (V_{di} + 221 + 232 + 311) ; $\text{kanikin}^y \text{ini}$ I was carrying it (V_{et} + 222 + 232 + 311).

(8) V + 221 + 242 remote past realis. $\text{min}^y \text{t}^y \text{inilpini}$ I lit it long ago (V_{at} + 221 + 242 + 311) ; $\text{min}^y \text{t}^y \text{inilga}$ he lit it long ago (V_{at} + 221 + 242 + 312). $\text{munu min}^y \text{t}^y \text{inimilpini}$ I didn't light it long ago ($P V_{at}$ + 221 + 233 + 242 + 312). In this sequence, V_{b-e} pattern analogously to munu galpimini etc. in (2) above.

(9) (4) + 242 remote past irrealis, remote past conditional (protasis). $\text{min}^y \text{t}^y \text{inimilpini}$ I was about to light it long ago, if I had lit it long ago (V_{at} + 221 + 233 + 242 + 311).

(10) (4) + 242 (+ 300) + 412 remote past conditional (apodosis). $\text{min}^y \text{t}^y \text{animilpininiri}$ I would have lit it long ago (V_{at} + 221 + 233 + 242 + 311 + 412). The negative sequence is analogous to (5) above, viz.

munu min^yt^yinimilpinigiri.

(11) V + 231 optative. min^yt^yilkunu let me light it! (V_{at} + 231 + 311) ; munu min^yt^yilkun don't light it! (P V_{at} + 231 + 331). munu V + 231 occurs in sequence with 2nd person actor (331, 1345, 1346) only.

(12) V_a + 241.1, V_a + 231 + 241.2, V_b + 241, V_{c-e} + 231 + 241 future, future conditional, nonabrupt imperative. min^yt^yilimini I'll light it, if/when I light it (V_{at} + 241 + 311) ; min^yt^yilkulin^y he'll light it, etc. (V_{at} + 231 + 241 + 312) ; ḡalpulumunu I'll enter, etc. (V_{bi} + 241 + 311) ; ḡalpuliny^y he'll enter, etc. (V_{bi} + 231 + 241 + 312) ; ḡalkulumunu I'll eat it, etc. (V_{ct} + 231 + 241 + 311) ; ḡalkulin^y he'll eat it, etc. (V_{ct} + 231 + 241 + 312) ; the corresponding sequences with V_{d-e} are analogous to those with V_c. munu ḡat^yuluku min^yt^yinaku I won't light it (P N_p + 641 + 651 N_v(V_{at} + 221) + 651) (munu ḡat^yulu min^yt^yinaku also occurs with identical referent) ; munu ḡat^yu(ku) ḡalpin^yaku I won't enter (P N_p (+ 651) N_v(V_{bi} + 221) + 651) ; munu ḡat^yulu(ku) ḡaniny^yaku I won't eat it (P N_p + 641 (+ 651) N_v (V_{ct} + 222) + 651) ; munu ḡat^yu(ku) yaniny^yaku I won't go (P N_p (+ 651) N_v(V_{di} + 222) + 651) ; munu ḡat^yulu(ku) kaniny^yaku I won't carry it (P N_p + 641 (+ 651) N_v(V_{et} + 222) + 651).

(13) V_{a-b} + 221 + 651, V_{c-e} + 222 + 651 purposive.

min^yt^yinaku (in order) to light it (V_{at} + 221 + 651);
 nalpin^yaku (in order) to enter (V_{bi} + 221 + 651) (V_{c-e}
 as in (12)).

(14) V_{a-b} + 221 + 231 + 241 remote future, remote
 future conditional. min^yt^yinaŋkulumunu I'll light
 it, if/when I light it (a long time hence) (V_{at} + 221
 + 231 + 241 + 311) ; min^yt^yinaŋkulin^y he'll light
 it a long time hence, etc. (V_{at} + 221 + 231 + 241 + 312);
 nalpin^yan^ykulumunu I'll enter a long time hence, etc.
 (V_{bi} + 221 + 231 + 241 + 311). V_{c-e} are not attested
 in sequences analogous to the above. We predict that
 further eliciting would show V_{c-e} + 222 + 231 + 241 to
 be a grammatical sequence, e.g. *yanin^yan^ykulumunu
I'll go a long time hence, etc.

3.2.1.2. Occurrence of members of the disjunctive series
 730 and 900 in sequence with V is exemplified below.

(1) V + ... + 731 relative. gananalū marŋu-
 kuralū miRaŋu t^yinaku // t^yinamanayin^yit^yanin^ypa
 kukunt^yayi # we (pl excl) aborigines know what
 tracks are what when we track sheep (N_p + 641
 N_s + 612 + 641 N_s N_s + 651 V_{at}(N_b + 521) + 221 +
 1344 + 2358 + 362 + 731 N_s).

(2) V + ... + 732 causal. kuwari puntat^yi ŋama
 minpilimiŋiŋa kuyi ŋaŋat^yin^ypakura # I'm going to

drink your milk now in revenge for your eating my meat

(N_s P N_s V_{at} + 241 + 311 + 339 + 371 N_s
V_{ct} + 221 + 325 + 331 + 371 + 732) (or alternatively —
without referential change — kuwari gama minpilimiŋiŋa
puntat^yi kuyikura ŋanat^yinpa # in which 732 is in
sequence with N_s).

(3) V + ... + 733 vocative. yuŋkulumuŋuluku ↑VE
hey, I'll give (them) to him! (V_{etp} + 231 + 241 + 311
+ 361 + 733).

(4) V + ... + 911 emphatic. t^yanpin^yiyiŋa
paŋan^ywuŋu the children are swimming! (V_{bi} + 221 + 2348
+ 911 N_s + 612).

(5) V + ... + 912 particularizing. yankuliŋi
let's go (du incl)! (V_{di} + 231 + 2341 + 912).

3.2.2. Sequences of V with 300

3.2.2.1. Members of 300 are formally distinguished from other suffixes which have compatibility with V in that they occupy suffixial relative orders 4-12 in verb morphology (200 occupy orders 1-3, and 400 occupy order 13). Semantically, 300 are united by the referent person, shared by no other m.

Categories marked by 300 include three numbers (singular, dual, and plural) and three persons (first, second, and third) ; in nonsingular first person forms an opposition is maintained between inclusive of addressee

and exclusive of addressee. Members of 300 other than 371-391 also have referents divided between

- (1) Actor
- (2) Direct Goal
- (3) Indirect Goal

Included under (2) and (3) are sequences marking a non-differentiated category of reflexivity-reciprocality. An occurrence of 371 in sequence with (1) ± (2) above has the referent purposive, e.g. $nul^y \text{anapanin}^y$ you are washing yourself ($V_{at} + 221 + 331 + 1366$) : $nul^y \text{anapanin}^y a$ you are washing yourself therefore ($V_{at} + 221 + 331 + 1366 + 371$). An occurrence of 371 in sequence with (1) + (3) above has a referent-changing value : (1) + (3) = Actor + Indirect Goal ; (1) + (3) + 371 = Actor + Benefactive.

Benefactive sequences (i.e. (3) + 371) other than 3rd singular (marked by 361 + 371) can be followed by 3rd singular benefactive. The maximal expansion of 300 consists of the sequence Actor + non third singular benefactive + third singular benefactive, e.g. $kampananupulalu$ they du cooked it for (him who is) yours ($V_{at} + 221 + 339 + 2347 + 371 + 381 + 391$).

All V, unless in sequence with 211, are obligatorily marked for actor (including occurrences of the zero alternant of 312). The category third singular direct

goal is unmarked. All other non-actor categories are overtly marked.

As indicated in 3.2.0., V are dichotomized on one level into (1) those stems (V_t) which can occur in sequence with direct goal and ⁽²⁾ those (V_i) which cannot. A large percentage of both V_t and V_i are compatible with both indirect goal and benefactive. No attempt is made herein to distinguish such V as are incompatible with sequences marking these categories.

Possible sequences of V_t with 300 are summarized categorically as follows :

- (1) V_t + Actor \pm 371 (with 3rd singular direct goal implied)
- (2) V_t + Actor + Direct Goal \pm 371
- (3) V_t + Actor + Indirect Goal \pm (371(\pm (381 + 391)))

Possible sequences of V_i + 300 are as listed in (1) and (3) above.

In a small number of sequences, actor follows non-actor and precedes 371. These sequences are :

- (1) 320 + (one of 331, 1345, 1346, and 2347), e.g. kampanat^yura you pl cooked it for me (V_{at} + 221 + 325 + 1346 + 371) ; yat^yanikin^yin^yipulu they du were following me (V_{at} + 221 + 232 + 324 + 2347).

- (2) (one of 336 and 337) + 2347, e.g. mimalamanu-pulu they du will wait for you sg (V_{ai} + 241 + 339 +

2347) ; $\text{gul}^{\text{y}}\text{alamantapula}$ they du will wash you there-
fore ($V_{\text{at}} + 241 + 338 + 2347 + 371$).

In all other sequences, actor precedes non-actor.

The sequence $V + 211$, when not itself in sequence with 411, is restricted vis-à-vis its compatibility with actor to suffixes 2347 and 2348. In such sequences, 2347 has the referent 2nd singular actor when Ego's mother's brother is the addressee, and 2nd dual actor otherwise. 2348, when in sequence with 211, has the referent 2nd plural actor. Examples are : $\text{mayi yuwan}^{\text{y}}\text{ipula}$ 1. you du give me food! (to non mother's brothers) 2. you sg give me food! (to MoBr) ($N_{\text{s}} V_{\text{etp}} + 211 + 324 + 2347 + 371$) ; yarayi you pl go away! ($V_{\text{di}} + 211 + 2348$).

Certain categories of actor and non-actor are incompatible, viz.

(1) 1st (sg, du, pl) actor with 1st (sg, du, pl) non-actor, apart from the sequences ... 311 + 325 ± 371, and ... 311 + 350 + 363 + 371. Examples of the latter are : $\text{wiriṇiṇit}^{\text{y}}\text{i}$ I donned it ($V_{\text{at}} + 221 + 311 + 325$); kampalamanāṇalika I'll cook it for us du incl ($V_{\text{at}} + 241 + 311 + 1351 + 363 + 371$).

(2) 2nd (sg, du, pl) actor with 2nd (sg, du, pl) non-actor.

(3) 2nd sg with 1st nonsingular inclusive, apart from the sequences ... 331 + 1351-2 + 363 + 371, e.g.

kampalamangan^yt^yuruka you should cook it for us pl incl
(V_{at} + 241 + 331 + 1352 + 363 + 371).

(4) 2nd non-sg with 1st non-sg inclusive.

(5) 1st non-sg inclusive with 2nd (sg, du, pl).

Exemplification of the occurrence of members of 300 -
alone and in sequence -- follow in successive paragraphs.

310. Ruwin^yini I shot it, I'm shooting it (V_{bt} +
221 + 311); pugkin^yini I fell down (V_{bi} + 221 + 311);
Ruwin^yiri he shot it, etc. (V_{bt} + 221 + 312).

310 + 320. Ruwin^yinit^ya I shot it for myself (V_{bt}
+ 221 + 311 + 325 + 371); Ruwin^yit^ya he shot it for me
(V_{bt} + 221 + 312 + 325 + 371); Ruwin^yit^yi he shot at me
(V_{bt} + 221 + 312 + 325).

310 + 330. Ruwin^yininti I shot you (V_{bt} + 221 +
311 + 338) (members of 310 are incompatible with 331);
Ruwin^yanu he shot at you (V_{bt} + 221 + 312 + 339).

320 + 331. Ruwin^yit^yin you shot at me (V_{bt} + 221
+ 325 + 331); Ruwin^yin^yin you shot me (V_{bt} + 221 +
324 + 331); Ruwin^yit^yinpa you shot mine, you shot it for
me (V_{bt} + 221 + 325 + 331 + 371).

331. Ruwin^yin you shot it (V_{bt} + 221 + 331).

310 + 350. Ruwin^yinipalayika I shot it for us du
excl (V_{bt} + 221 + 311 + 1353 + 363 + 371); Ruwin^yina-
layiku he shot at us du excl (V_{bt} + 221 + 312 + 1353 +

363).

331 + 350. Ruwin^yinpuluka you shot it for them
du (V_{bt} + 221 + 331 + 2347 + 363 + 371).

All members of 340 are also members of 350, and vice versa. Occurrence in 340 signals the category nonsingular actor ; occurrence in 350 signals the category non-singular nonactor, which is further specified by (1) 362 direct goal and 363 indirect goal, and (2) 371 purposive-benefactive. Examples are : Ruwin^yalipulin^yi we du incl shot them du (V_{bt} + 221 + 2341 + 2357 + 362) ; Ruwin^yipulunalin^ya they du shot us du incl therefore (V_{bt} + 221 + 2347 + 1351 + 362 + 371) ; Ruwin^yipulun^yumpuluka they du shot it for you du (V_{bt} + 221 + 2347 + 1355 + 363 + 371) ; Ruwin^yin^yit^yanaku we pl incl shot at them pl (V_{bt} + 221 + 2342 + 2358 + 363) : Ruwin^yiyiṅan^yt^yuraku they pl shot at us pl incl (V_{bt} + 221 + 2348 + 1352 + 363) ; Ruwin^yiyiṅin^yuruka we pl excl shot it for you pl (or ... shot yours (pl)) (V_{bt} + 221 + 1344 + 1356 + 363 + 371) : Ruwin^yin^yuruganaka you pl shot it for us pl excl (V_{bt} + 221 + 1346 + 1354 + 363 + 371).

320 + 340. Ruwin^yit^yura you pl shot it for me
(V_{bt} + 221 + 325 + 1346 + 371).

330 + 340. Ruwin^yanupulu they du shot at you
(V_{bt} + 221 + 339 + 2347).

310 + 360. Ruwin^yili he shot at him ($V_{bt} + 221 + 312 + 361$) ; Ruwin^yalu he shot his (eius) ($V_{bt} + 221 + 312 + 361 + 371$) ; Ruwin^yin^yanin^y I shot myself ($V_{bt} + 221 + 311 + 1366$) ; Ruwin^yin^yiŋa he shot his own ($V_{ot} + 221 + 312 + 1367 + 371$) (homonymous with $V_{bt} + 221 + 311 + 339 + 371$ I shot yours).

331 + 360. Ruwin^yin^ypalu you shot his ($V_{bt} + 221 + 331 + 361 + 371$) ; Ruwin^yin^ypanin^y you shot yourself ($V_{bt} + 221 + 331 + 1366$).

340 + 360. Ruwin^yin^yalu we pl incl shot his ($V_{ot} + 221 + 2342 + 361 + 371$) ; Ruwin^yipulunaŋu they du shot at each other ($V_{bt} + 221 + 2347 + 1367$) ; Ruwin^yiy^yanin^y (~ Ruwin^yiy^yanin^yi : 1366 is -n^yi ~ -n^y in the environment —#) 1. they pl shot themselves 2. they pl shot each other ($V_{bt} + 221 + 2348 + 1366$) ; Ruwin^yiyit^ya they pl shot mine ($V_{bt} + 221 + 2348 + 365 + 371$) ; Ruwin^yilay^yiŋa we du excl shot yours ($V_{bt} + 221 + 1343 + 369 + 371$) ; Ruwulupiyin^yinti we pl excl will shoot you ($V_{bt} + 231 + 241 + 1344 + 368$).

Sequence of ... + 370 + 380 + 390.

Ruwulupiyin^yin^yumpulukalu we pl excl will shoot it for the one belonging to you du ($V_{bt} + 231 + 241 + 1344 + 1355 + 363 + 371 + 381 + 391$).

3.2.3. Subanalysis of 1000

Morphs distinguished by the millennial prefix 1 —
i.e. in-cluster morpheme sequences — are discussed
below.

In the following table, members of N_p (personal pronouns) are compared to members of 300 (including those which are also members of 1000) which have overlapping referents. The conventions adopted are as follows :

(1) hyphens separate members of 300 already listed in the minor morpheme inventory (i.e. hyphens serve to mark morpheme boundaries in out-of-cluster morpheme sequences); periods separate morphemes which we now postulate on the level of subanalysis — i.e. morphemes occurring in in-cluster morpheme sequences.

<u>Independent</u> <u>Person</u> <u>Markers</u> (N _p)	<u>Dependent</u> <u>Actor</u>	<u>Person</u> <u>Direct</u> <u>Goal</u>	<u>Markers</u> <u>Indirect</u> <u>Goal</u>	<u>Referent</u>
ŋa.t ^y u	-n ^y V	-n ^y i	-t ^y i	<u>1st sg</u>
ŋa.li	-li	-ŋa.li-n ^y i	-ŋa.li-ku	<u>1st du incl</u>
ŋa.n ^y t ^y uru	-n ^y i	-ŋa.n ^y t ^y uri- n ^y i	-ŋa.n ^y t ^y ura- ku	<u>1st pl incl</u>
ŋa.la.yi	-la.yi	-ŋa.la.yi- n ^y i	-ŋa.la.yi- ku	<u>1st du excl</u>
ŋa.na.ŋa	-yi.ŋi	-ŋa.∅.ŋi- n ^y i	-ŋa.∅.ŋa-ku	<u>1st pl excl</u>
n ^y un.tu	-n	-n.tV	-ŋu	<u>2nd sg</u>
n ^y um.pala	-n ^y um.pulu	-n ^y um.puli- n ^y i	-n ^y um.pula- ku	<u>2nd du</u>
n ^y u.ra	-n ^y u.ru	-n ^y u.ri- n ^y i	-n ^y u.ra-ku	<u>2nd pl</u>
pali.n ^y	-rV	(unmarked)	-lV	<u>3rd sg</u>
pula.n ^y	-pulu	-puli-n ^y i	-pula-ku	<u>3rd du</u>
t ^y ana	-yi	-t ^y ani-n ^y i	-t ^y ana-ku	<u>3rd pl</u>
wal ^y t ^y a	(unmarked)	-ŋi.n ^y	-n ^y V.ŋu	<u>reflexive/</u> <u>reciprocal</u>

Only the most recurrent of the alternants of actor and singular nonactor are listed. For complete details of allomorphy, see the minor morpheme inventory.

Below are listed, within century zero, the additional constituent morphemes which we postulate from the above table. In cases where a morph is identified with a member of 100-900, such identity is indicated by numerical labels united by the symbol \equiv .

10 Bases

11 first person

11.1 $\eta a-$

11.2 $-\eta a-$

11.3 $-\emptyset-$

12 second person

12.1 $n^y un-$ ~ $n^y um-$ ~ $n^y u-$

12.2 $-n^y um-$ ~ $-n^y u-$ ~ $-n-$

13 third singular (\equiv 312)

13.1 $pala$ (N_d (demonstrative)) that(near)

13.2 $pali-$

14 1. third dual 2. dual (\equiv 2347-2357)

14.1 $pula-$

14.2 $-pulV$

15 third plural (\equiv 2348-2358)

15.1 $t^y ana$

15.2 $-t^y anA-$

15.3 $-yi$ ~ $-ya-$

20 Number

21 singular (= 518)

21.1 -t^yu

21.2 -tu

22 -li ~ -la- (= 2341) dual

23 plural (= 612)

23.1 -n^yt^yuru

23.2 -n^yt^yurV-

23.3 -na-

23.4 -ra

23.5 -rV-

23.6 -∅-

24 -n^y nonplural

30 Referent-changing

31 exclusivizing

31.1 -yi

31.2 -na

Morpheme identifications are exemplified below ; for those sequences which lend themselves to alternative or ambiguous interpretations, our analysis is spelled out in detail.

Independent Person Markers. na.t^yu 1st sg (11 + 21) ; na.n^yt^yuru 1st pl (11 + 23) ; na.la.yi 1st du

excl (11 + 22 + 31) ; ɲa.na.ɲa 1st pl excl (11 + 23 + 31) ; n^yu.ra 2nd pl (12 + 23) ; pula.n^y 3rd du (14 + 24).

Actor Markers (Dependent). -la.yi 1st du excl (11 + 22 + 31) ; -yi.ɲi 1st pl excl (15 + 311) ; -n^yum.pulu 2nd du (12 + 14).

Direct Goal (Dependent). -ɲa.la.yi-n^yi 1st du excl ((11 + 22 + 31) + 362) ; -ɲa.∅.ɲi-n^yi 1st pl excl ((11 + 23 + 31) + 362) ; -n.tu 2nd singular (12 + 21) ; -ɲi.n^y reflexive-reciprocal (311 + 362).

Indirect Goal (Dependent). -ɲV.ɲu reflexive-reciprocal (311 + 363).

3.3. Sequences of N + non-SF

3.3.1. Nouns, which are distinguished by the divisive suffix 641, are subclassed in terms of two crosscutting criteria : (1) compatibility with given members of 500 and 600, and (2) possibility of occurrence as complement of non-third person actor or goal. In the following chart, divisive criteria for subclasses of N are specified as to type in the first row, and in detail in the second. The symbol + indicates compatibility between a given subclass of N and a given suffix, or, in the case of N_b, compatibility with a given construction ; the symbol - indicates corresponding incompatibility.

Criterion type →	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)
	641	651	660	733	518	516	517	Can occur in seq 1-verb utt.	Can occur as comp of non-3rd actor or goal suffixes.
N _s (ubstantives)	+	+	+	-	-	-	-	-	-
N _p (ronouns)	+	+	-	-	-	-	-	-	+
N _d (emonstratives)	+	+	+	-	-	-	+	-	-
N _i (nterrogatives)	+	+	+	-	-	-	-	+	-
N _n (umerals)	+	+	-	-	-	+	-	-	-
N _k (inship terms)1	+	+	+	+	-	-	-	-	-
N _k (inship terms)2	+	+	+	+	+	-	-	-	-
N _c (ardinal points)	+	-	-	-	-	-	-	-	-
N _v (erbal nouns)	-	+	-	-	-	-	-	-	-
N _b (ody parts)	+	+	+	-	-	-	-	-	+

Examples attesting each occurrence of the symbol + in the chart now follow.

641. $\eta a l^{y} u n t^{y} u$ $y i r i \eta i n^{y} i$ the woman saw me (N_s + 641 V_{at} + 221 + 312 + 324) ; $n^{y} u n t u l u$ $w i \eta a n a n$ you hit him (N_p + 641 V_{at} + 221 + 331) ; $p a l a l u$ $y i n^{y} a n^{y} a$ that one (near) gave it to me (N_d + 641 V_{etp} + 221 + 312 + 324 + 371) ; $\eta a n i l u$ $w i \eta a n a n$ what did you hit it with? (N_i + 641 V_{at} + 221 + 331) ; $k a n^{y} a p u l i n^{y} i$ $n^{y} u n t^{y} i r i$ $p i p i l u$ $w a R a t^{y} a l u \uparrow$ did the one mother give birth to these two? (V_{et} + 221 + 312 + 2357 + 362 N_s + 2661 N_{k1} + 641 N_n + 641) ; $m a m a t^{y} i l u$ $y i r i \eta i r i$ elder brother saw him (N_{k2} + 518 + 641 V_{at} + 221 + 312) ; $k a R a l u$ $y a n i m a l a$ repair it (as you go) west! (N_c + 641 V_{at} + 211) ; $p a R i r t^{y} u$ $t^{y} u p a n a n a$ I extinguished it with my hands (N_b + 641 V_{at} + 221 + 311).

651. $m a y i k u$ $w a n k u \eta u$ $k a n \eta i n^{y} a$ he's climbing up on a rock for (vegetable) food (N_s + 651 N_s + 642 V_{bi} + 221 + 312 + 371) ; $w i r k a \eta a n a l i k a$ $\eta a l i k u$ cut it for us du incl! (V_{at} + 211 + 1351 + 363 + 371 N_p + 651) ; $p a l a k u$ it's for that person (near) (N_d + 651) ; $\eta a n i k u$ $n^{y} a r u p i n i n p a$ why are you laughing? (N_i + 651 $V_{ai}(N_s + 521)$ + 221 + 331 + 371) ; $m i n^{y} a w u k u$ $w a R a t^{y} a k u$ $k a n \eta i n^{y} a$ he's climbing up for one cat (N_s + 651 N_n + 651 V_{bi} + 221 + 312 + 371) ; $p i p i k u$ $\eta a t^{y} u m i l a k u$ $k a n^{y} t^{y} i n i n a$ I'm looking for my mother

($N_{k1} + 651 N_s(N_p + 535) + 651 V_{aip} + 221 + 311 + 371$) ;
 mamat^yiku kamalalu call out for elder brother! ($N_{k2} +$
 $518 + 651 V_{ai} + 211 + 361$) ; kapukapu muwarpinaku
come (here) for a talk! ($P N_v(V_{ai}(N_b + 521) + 221) +$
 651) ; t^yamakata nat^yumili min^yawu // muwarku munu #
my cat's silent, he won't meow ($N_s + 812 N_p + 625 N_s //$
 $N_b + 651 P$).

610-630-660. nat^yuragu palaragu wal^ypiliragu who
are those white men? ($N_i + 662 N_d + 662 N_s + 662$) ;
 pipit^yiri two (classificatory) mothers ($N_{k1} + 2661$) ;
 kalunu paired father's father and elder sister, etc.
 ($N_{k2} + 2611$) ; panit^yiri two eyes ($N_b + 2661$).

733. pipikayi ↑VE mother! ($N_{k1} + 733$) ;
 kakat^yikayi ↑VE mother's brother! ($N_{k2} + 518 + 733$).

518. See previous example.

516. kut^yaramal twice ($N_n + 516$).

517. palari there(near) ($N_d(pala \text{ that(near)}) +$
 517).

731. wayiti yirinin nanipa do you see anything?
 ($P + 912 V_{at} + 221 + 331 N_d + 731$).

N occurring as complement of non 3rd actor and
 goal suffixes. t^yinapukalu yurpanin^yi kan^yti the shoe
rubbed my heel ($N_s + 641 V_{at} + 221 + 312 + 324 N_b$) ;

t^yina ŋat^yu parapara I've got a pain in my foot (N_b N_p N_s).

3.3.2. Sequences of N + 600 are exemplified below.

N + 610 + 640. piRirimiŋalu yiriŋiyi the men saw it (N_s + 612 + 641 V_{at} + 221 + 2348).

N + 640 + 660. wal^ypilaluraŋu yiriŋiyi the white men saw it (N_s + 641 + 662 V_{at} + 221 + 2348).

N + 610 + 620 + 660. ɭirapiŋanaraŋumilit^yiri ŋurat^yiri the two 'camps' of the red-tailed black cockatoos (N_s + 612 + 625 + 2661 N_s + 2661).

N + 620 + 640 + 660. ŋat^yumilalut^yiri my two, ergative (N_s(N_p + 625) + 641 + 2661).

N + 640 + 650. munu ŋat^yuluku part^yaŋaku wiŋaku I must not look at the fire (P N_p + 641 + 651 N_v(V_{at} + 221) + 651 N_s + 651).

N (+ 530) + 650 + 660. n^yiriŋit^yaluraŋu maŋŋi waɭarin^ypilipiyit^yanaku waɭaŋkart^yakuraŋu the ones (who are) behind will pass the ones in front (N_s + 531 + 641 + 662 N_s V_{ai}(N_s + 521) + 241 + 2348 + 2358 + 363 N_s + 531 + 651 + 662).

N + 650 + 670. kunit^ya from the south (N_c + 652 + 671).

N + 640 + 680. ŋanilu miRuruluyuwi min^yt^yiniri kaRat^yiri wika what is it — a bad spirit lighting a

fire in the west? ($N_i + 641 N_s + 641 + 685 V_{at} + 221 + 312 N_c + 642 N_s$).

3.3.3. Examples follow of N occurring in sequence with non-SF members of centuries 700-900.

N + 730. $n^y aralu yin^y an^y a \text{ \textasciitilde} tupawun // gaRugupa wanin^y i\emptyset$ ($\eta ulipa\tau u$) that (man) who lives in Port Hedland gave me two pounds ($N_s + 641 V_{etp} + 221 + 312 + 324 + 371 N_s // N_s + 642 + 731 V_{bi} + 221$ (312 not in $\eta ul.$)).

N + 820. $gal^y payit^y i$ certainly good ($N_s + 2821$).

N + 900. $galiti$ we du incl are the ones ($N_p + 912$).

3.4. Particles

3.4.1. Particles are dichotomized according as they are dependent or independent. An example of a dependent particle is $wa\tau a-$ — occurring in two compound V — $wa\tau a-ya-$ go the wrong way ($V_{di}(P + V_{di})$) and $wa\tau a-ka-$ take the wrong way ($V_{et}(P + V_{et})$).

3.4.2. Of independent particles, some are incompatible with all suffixes (e.g. $pa\tau u$ now); a small number are compatible with members of 800 and/or 900. Examples are: $munukata$ disinclined, negative ($P(\text{munu no, not}) + 812$); $munit^y i$ certainly not! ($P + 2821$); $munula$ no! ($P + 911$).

3.5. Inventory of $\frac{M}{m} \sim \frac{m}{M}$

3.5.1. Listed below are the 16 morphemes which are identified as $\frac{M}{m} \sim \frac{m}{M}$, in the order in which they appear in the minor morpheme inventory (i.e. members of 1000 and 2000).

<u>M</u> Counterpart	<u>m</u> Counterpart
nali <u>we du incl</u> (N _p)	2341-1351
nan ^y t ^y uru <u>we pl incl</u> (N _p)	2342-1352
nalayi <u>we du excl</u> (N _p)	1343-1353
nanana <u>we pl excl</u> (N _p)	1344-1354
n ^y umpala <u>you du</u> (N _p)	1345-1355
n ^y ura <u>you pl</u> (N _p)	1346-1356
pulan ^y <u>they du</u> (N _p)	2347-2357
t ^y ana <u>they pl</u> (N _p)	2348-2358
kari- <u>be</u> (V _{bi})	2522
t ^y ari- <u>become</u> (V _{bi})	2523
waṭi-pi- } waṭi-t ^y i- }	<u>cover</u> (both V _{at}) 2645
waNU- <u>remain</u> (V _{bi})	
kut ^y ara <u>two</u> (N _n)	2611-2631-2661 (= -t ^y ara (2611.1 etc) in Wan ^y ali ₂)
pala <u>that(near)</u> (N _d)	2687
t ^y i- <u>do</u> (V _{at})	2711
yit ^y a <u>indeed, true, truth</u> (N _s)	2821

NOTE

1. Kenneth Hale observes comparable sequences in other Western Desert-Mudbura languages (personal communication).

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