

THE PHONEMES OF IATMUL

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0. INTRODUCTION

This paper is a description of the phonology, both segmental and supra-segmental, of the Iatmul language.¹ The material for this paper was collected in the village of Brugnowi.² Possibly the most interesting feature of the phonology is the three vowel phonemes, their allophones, and distribution of those allophones.

1. CHART OF PHONEMES

- 1.1. Vowels:
- | | | |
|-------|------|--|
| High: | /ɨ/: | [i], [ɪ], [u], [ʊ], [ʔi], [ɨ] |
| Mid: | /ə/: | [e], [ɛ], [o], [ɔ], [ʔe],
[ʔo], [ə] |
| Low: | /a/: | [ʔa], [a] |

1.2. Consonants:

	Front	Central	Back
Stops:	/p/:	/t/:	/k/:
	[p ^m], [p ^h], [p ^ə], [p]	[t ⁿ], [t̥], [t]	[k ^ŋ], [k ^h], [k ^ə], [k]
Fricatives:	/b/:	/s/:	/g/:
	[b]	[s̥], [š]	[g], [g]
Nasals:	/m/:	/n/:	/ñ/:
	[m]	[ŋ], [n]	[ñ]
Resonants:	/w/:	/l/:	/y/:
	[w]	[l], [ř]	[y]

2. VOWEL PHONEMES

The vowels of Iatmul are /ɨ/, /ə/, and /a/, forming a one dimensional system of high, mid, and low vowel.

2. 1. Allophones

2. 1. 1. High vowel /i/ has allophones: [i] before /y/ or /ñ/, [ɪ] after /y/ or /ñ/, [u] before /w/, [ʊ] after /w/, [ʔi] before /y/ and not following a consonant, [ɨ] elsewhere. If a vowel occurs between /y/ and /w/ or between /w/ and /y/, the consonant following the vowel determines the environment. An example of this is: [yʷiɨy] /yɨwiɨy/ 'grass'.

2. 1. 2. Mid vowel /ə/ has allophones: [e] before /y/, /ñ/, or /ɨy/, [ɛ] after /y/ or /ñ/, [o] before /w/, [ɔ] after /w/, [ʔe] before /y/ and not following a consonant, [ʔo] before /w/ and not following a consonant, [ə] elsewhere.

2. 1. 3. Low vowel /a/ has allophones: [ʔa] not following a consonant and [a] elsewhere. This phoneme is usually of longer duration than the other vowel phonemes but there is no contrast between [a] and [a:].

2. 2. **Contrasts.** In the following examples, phonetic as well as phonemic transcription will be used to illustrate the unusual distribution of vowel phoneme allophones.

2. 2. 1. /ɨ/ contrasts with /ə/: [likəntɨ] /likəntɨ/ 'it's here', [likəntə] /likəntə/ 'smoked meat', [ntuw] /ntɨw/ 'man', [ntow] /ntew/ 'shrunken', [mpʰəriɨgəntɨ] /mplɨɨgəntɨ/ 'it fell down', [mpʰəɨgəntɨ] /mpləɨgəntɨ/ 'it is rotten' (as fish).

2. 2. 2. /ə/ contrasts with /a/: [maɨy] /maɨy/ 'rat', [məɨy] /məɨy/ 'mud flats', [kwəlɨntɨ] /kwəlɨntɨ/ 'he is there without a reason', [kwaɨntɨ] /kwaɨntɨ/ 'he is sleeping', [ŋkayatⁿ] /nkayat/ 'floor', [ystuwɨntɨ] /yətɨwɨntɨy/ 'they all walk'.

3. CONSONANT PHONEMES

The consonants of Iatmul are /p, t, k, b, s, ɟ, m, n, ñ, w, l, y/ forming a two dimensional consonant system. The one dimension is divided by place or articulation into front, central and back. Front is labial, central ranges from dental to alveo-palatal and back denotes the area behind the alveo-palatal region. The other dimension is divided by manner of articulation into stops, /p, t, k/; fricatives, /b, s, ɟ/; nasals, /m, n, ñ/; and resonants, /w, l, y/.

3.1. Variants

3.1.1. The final stops of Iatmul have been described as, "unreleased and in free variation with each other".³ There is, in fact, a voiceless nasal release which is often hard to detect. The release is homorganic with the stop as to point of articulation: [p^m], [tⁿ], and [k^ŋ]. These phonetic sequences of stop plus voiceless nasal have been interpreted as allophones of the stops /p/, /t/, and /k/, occurring utterance finally. The "variation" of final stops is often conditioned. If a form with a final stop is followed by a form beginning with a stop or nasal-stop consonant sequence, the final stop of the preceding form assimilates to the point of articulation of the stop of the following form and the nasal release is lost. For example: [ma^ʔatⁿ] /maat/ 'small' becomes [ma^ʔak nkey] /maak nkəy/ 'small house' and [ma^ʔap mpəp^m] /maap mpəp/ 'small moon', but does not change from its usual form in isolation in [ma^ʔat ntuwiy] /maat ntɨwiy/ 'small mountain'. The fluctuation on some stop final forms when uttered in isolation reflects this assimilating feature of final stops. However some stop final forms of some speakers do show contrast between stops when uttered in isolation. [mpəp^m] /mpəp/ 'moon' and [mpəkⁿ] /mpək/ 'pig' contrast /p/ and /k/ in final position. [ʔabisetⁿ] /abisət/ 'Sepik River' and [ʔabisək^ŋ] /abisək/ 'lagoon' contrast /t/ and /k/.

The utterance initial allophones are [p^h], [t̚], and [k^h], the front and back stop being aspirated and the allophone of the central stop interdental.

/p/ and /k/ are the only stops to occur before /l/ and the allophones [p^ə] and [k^ə], stop with mid vowel off glide, occurs in this position. These have not been interpreted as /kəl/ or /pəl/ since other consonants establish a CC pattern (see 4.1.1.) and because there is phonetic dissimilarity between /pəl/ as in /pəlɨy/ 'waves' and /pl/ as in /plɨwknawɨy/ 'place name'.

The norms [p], [t], and [k] occur in all other environments.

3.1.2. Of the fricatives /b, s, ɣ/ only /b/ has one allophone, [b]. /s/ has two allophones, [s̠], slightly backed and [s̠̚], retroflexed. These two fluctuate freely in all environments. /ɣ/ has allophones [ɣ] and [g] which also fluctuate freely.

3.1.3. Of the nasals, only /n/ has more than one allophone. /m/ and /ñ/ have the allophones [m] and [ñ] re-

spectively. /n/ has two allophones, [ŋ] velar occurring contiguous to /k/ and [n] alveolar occurring elsewhere. Utterance finally [n] and [ŋ] may fluctuate. This final position fluctuation is analogous to that of the final stops except that [n] and [ŋ] never contrast. Although /n/ does contrast with /m/ and /ñ/ (see 3.2.3.), there is environmentally determined fluctuation between all nasal phonemes as with the stops. Only /m/ occurs preceding /p/ and only /ñ/ occurs preceding /y/. For example: /lan/ 'husband' + /piti/ 'he plucked' = /lam piti/ 'husband plucked' and /lan/ + /yinti/ 'he went' = /lañ yinti/ 'husband went'.

3.1.4. Of the resonants, /l/ has two allophones, [l] alveolar lateral vibrant and [ɾ] alveolar flap. These two allophones fluctuate freely. The other resonants, /w/ and /y/, have one allophone each.

3.2. Contrasts

3.2.1. Stops contrast with each other: /piti/ 'he plucked', /titi/ 'it broke', /kiti/ 'it dried'. Also /p/ contrasts with /b/, /biti/ 'he cooked'. /t/ contrasts with /l/, /witiy/ 'they heard', /wiliy/ 'a type of shell'. /k/ contrasts with /g/, /kikintaliḡe/ 'it's over there', /kigin-taliḡe/ 'There is food.'. /k/ also contrasts with [ʔ], [k^ha'iy] 'no', [k^hakiy] 'mud'.

3.2.2. Fricatives contrast with each other: /asi/ 'shoot', /aḡi/ 'eat', /abi/ 'look'. Also /b/ contrasts with /w/: /baale/ 'canoe', /waale/ 'dog'.

3.2.3. Nasals contrast with each other: /mina/ 'your' (male singular), /nina/ 'our' (plural), /ñina/ 'your' (feminine singular).

3.2.4. Resonants contrast with each other: /linti/ 'he is', /yinti/ 'he went', and /winti/ 'hunger'.

4. DISTRIBUTION OF PHONEMES WITHIN THE SYLLABLE

4.1. The syllable of Iatmul may be defined as a peak of sonority consisting of one vowel phoneme with optional non-sonorous margins.

4.1.1. The margin preceding the peak may consist of a single, a sequence of two, or a sequence of three consonant phonemes. These sequences of consonants were considered as sequences rather than complex phonemes mainly for economy of

phonemes. An interpretation considering the sequences as complex phonemes would simplify the syllable structure at the expense of complicating the phoneme picture. This alternate interpretation would be equally adequate.

Any of the twelve consonant phonemes may occur singly in the preceding syllable margin (in the following examples, [.] will indicate syllable break), /p̄i.t̄i/ 'he plucked', /nə.kə.tə/ 'another', /m̄i.ñ̄a/ 'breast', /s̄i.ɡat/ 'shall we shoot?', /b̄a.liy/ 'heavy', and /ȳi.w̄in/ 'I went'.

There are ten two-consonant sequences which may make up the preceding margin: /mp/, /nt/, /nk/, /b̄w/, /b̄l/, /mw/, /pl/, /kw/, /kl/, and /ts/. /mp̄i.la/ 'your' (dual), /nt̄iw/ 'man', /nk̄iw/ 'water', /wa.a.b̄wiy/ 'cloth', /ka.b̄ləy/ 'bad', /mw̄ik/ 'wind', /pl̄iw.mp̄ə.li.ɡə.nt̄i/ 'it is underneath', /kwa.nt̄i/ 'he slept', /kla.nt̄i/ 'he got', /tsə.ɡə.liy/ 'tongs'.

There are four three-consonant sequences which may make up the preceding margin: /mpl/, /nk̄w/, /nkl/, /nts/. /mpl̄əw.ɡə.nt̄i/ 'it is shrunken', /nk̄wa.ləy/ 'wild bamboo', /nk̄la.li/ 'she cried', /nts̄a.nk̄iy/ 'wash!'.

4.1.2. The syllable peak may consist of any one of the three vowel phonemes. If there is a sequence of two vowels there is always a syllable break between them. There are three such sequences in Iatmul: /aa/ as in [k^haʔatⁿ] /ka.at/ 'mayfly', /aə/ as in [k^haʔow] /ka.əw/ 'enemy', and /āi/ as in [k^haʔiy] /kāiy/ 'no'.

If the syllable contains no margin preceding the peak, the peak must consist of /a/, never /ə/ or /ī/. [ʔawa] /a.wa/ 'yes'.

4.1.3. The margin following the peak (following margin), may consist of either a single consonant phoneme or a sequence of two consonant phonemes. The single consonants which may occur as the following margin are: /p/, /t/, /k/, /n/, /m/, /ñ/, /y/, and /w/. /m/ and /ñ/ occur only when a following form begins with /p/ or /y/ (see 3.1.3.). /mp̄ək/ 'pig', /mp̄əp/ 'moon', /ab̄isət/ 'Sepik River', /man/ 'leg', /wiy/ 'grass', /nk̄iw/ 'water'.

There are only two sequences of two consonants which may occur as the following margin: /yt/, and /yk/. These sequences occur very rarely. /ka.iyk/ 'shadow', /nk̄wəyt/ 'type of vine'.

4.1.4. **Syllable Types.** The constituency of peak and margins in all their possible combinations yields twelve syllable types. Of these twelve types only ten have been

found to occur: V /a.wa/ 'yes', CV /sɪ/ 'name', CCV /nta/ 'something', CCCV /nkla/ 'type of tree', VC /ay/ 'go', CVC /lan/ 'husband', CCVC /mpan/ 'fish trap anchor', CCCVC /nkwət/ 'you all', VCC /ma.ɪyt/ 'rain'. CCVCC and CCCVCC have not been found.

5. SUPRA-SEGMENTAL FEATURES

5.1. Stress, tone and length are not phonemically pertinent. Stress is sometimes related to and predictable by the vowel: /a/ is usually of greater intensity than either /ɪ/ or /ə/. Loudness is not always concurrent with highest pitch of intonation. There is no contrastive stress.

5.2. Pitch becomes important as intonation. The following intonation data is not exhaustive.

Intonation shows contrast contiguous to pause in the stream of speech. The main body of an utterance is usually spoken with a level, dronelike intonation or a slight dropping intonation, by steps, throughout the utterance. Changes in intonational pitch coincide with syllable boundaries, that is, a step from one pitch to another does not occur except at a syllable break. There is one exception to this rule (see 5.2.5.). There are five intonation contours that will be described.

5.2.1. Statement intonation occurs before a pause and is characterized by a (3-4) drop on the final two syllables. In this description numeral 4 will indicate lowest pitch and 1 will indicate highest.

5.2.2. Question intonation occurs before a final pause and is characterized by a (3-1) rise on the final two syllables. When a question word is used the question utterance ends with statement intonation. A question without a question word differs from a statement only by intonation. An example of this is: /tə.²mpə² yə.³ntɪ⁴/ 'he already came', /tə.²mpə² yə.³ntɪ¹/ 'did he already come?', and /a.²nta.² sɪ.² bɪ² yə.³ntɪ⁴/ 'when did he come?'.

5.2.3. Recapitulation intonation occurs after a pause and before a non-final pause and is characterized by a (3-1) rise. This intonational contour occurs only on verb forms.

For example, /wa.² a.² lə.² kla.³ ntɪ⁴/ /kla.³ ntɪ¹ yə.³ ntɪ⁴/ '(the) dog got (it)' 'having gotten (it), he came'. The two occurrences of /klantɪ/ differ only by intonation which affects

their grammatical function.

5.2.4. Sequence intonation has two variants, the one characterized by a (2-1) rise occurs at the beginning of an utterance and the other characterized by a (3-2) rise occurs following a pause between items in sequence. That is, the first variant (2-1) occurs on the first item in a list while the second (3-2) occurs on all subsequent items in the list.

/wá.a.lə́ wá.ak yə́.mpɛ́k/ '(the) dog and (the) crocodile came'.

5.2.5. Emphasis intonation usually occurs concurrent with a short form which constitutes an entire utterance. It is characterized by a tone 3 on the second to last syllable and a 2-4 glide on the final syllable. An example of this is:

/mɛ́.nɛ́y/ 'eye' and /mɛ́.nɛ́y/ 'eye!'. The second utterance of 'eye' would normally be in response to a question such as, 'What did you say?'.

NOTES

1. This paper is based on data collected during 5 months residence in the village of Brugnawi while working under the auspices of the New Guinea branch of the Summer Institute of Linguistics. Many informants were used ranging in age from 15 to 60 years. The data was organised during a linguistic field study programme conducted by Eunice V. Pike at the Summer Institute of Linguistics base in New Guinea from February-March 1963.

The name Iatmul was first used by Bateson (1932).

2. Laycock (see Capell 1962, p.44) divided Iatmul into dialects calling the dialect spoken at Brugnawi village Nayura.

3. op. cit.

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