

## CHAPTER 1

### INTRODUCTION

#### 1.1 HISTORY

The Huli people live in the central mountains of the Papua New Guinea mainland, at a latitude of  $6^{\circ}$  below the equator and at a mean altitude of about 1500 metres above sea level. They number over 65,000 (Kloss & McConnel 1981), grouped in clans (hamigini) and subclans (hamigini emene) throughout the area shown in the map on page 2.

Some of their origin myths speak of ancestral kinship ties with neighbouring language groups, while genealogies and oral traditions suggest that there has been some migratory movement within the area they regard as their own. They have probably been living in this area for 600 to 1000 years (Blong 1979), or possibly even longer, given that the Highlands of Papua New Guinea have been inhabited for at least 2,500 years (White & O'Connell 1982: 176).

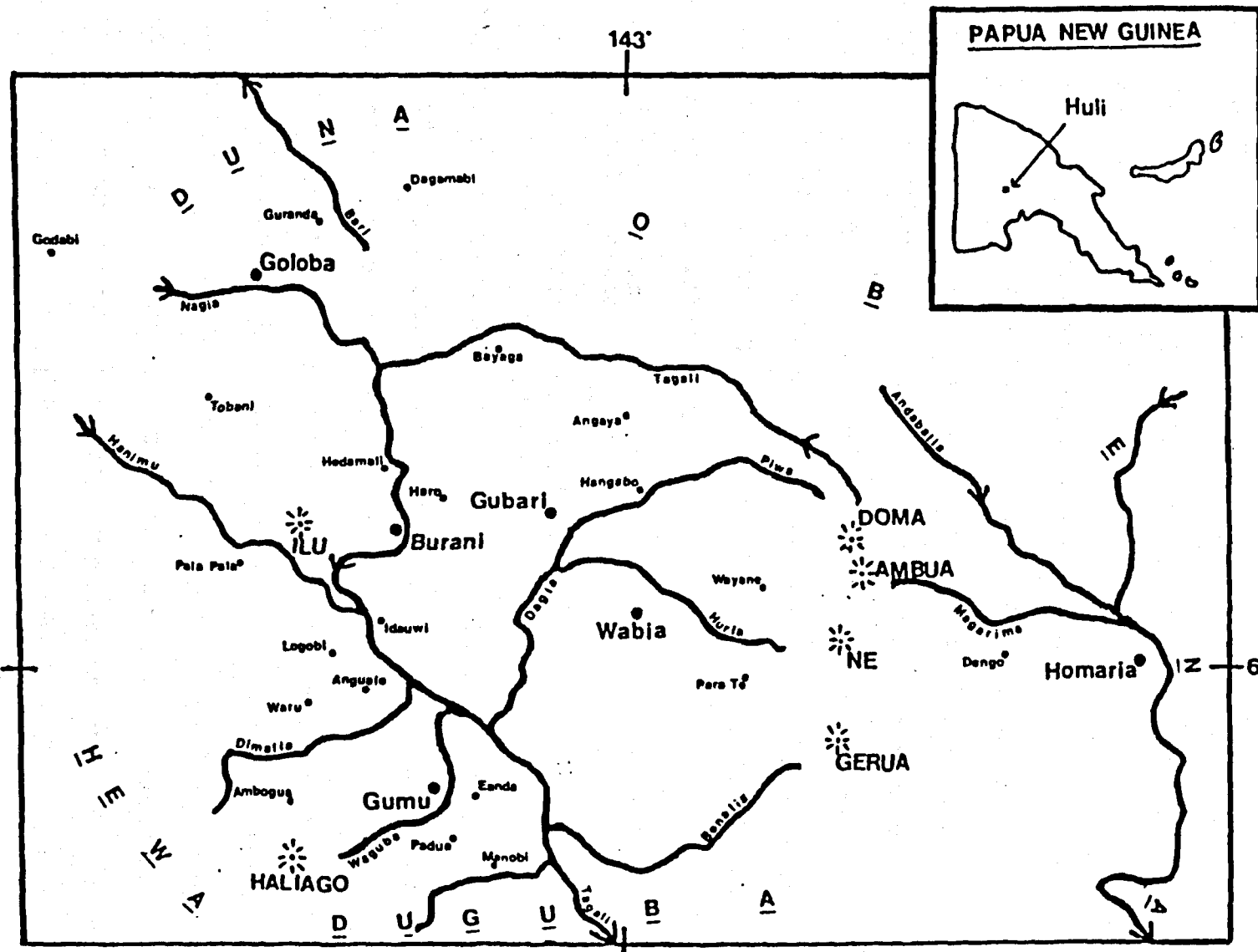
The present-day inhabitants of the land employ a system of shifting cultivation whereby virgin bush is cleared and the ground tilled as need arises, leaving old worn-out tracts of land to recuperate through natural re-forestation. The secondary forests that then appear become available for clearing and recultivation within the space of two to four generations, although in the higher and less fertile regions the forests tend to degrade into grasslands rather than to return to their original state.

The restricted population movements induced by this cyclic pattern of agriculture are largely responsible for the fact

**Figure 1:**  
**Map of Huli**  
**Country**

**KEY:**

- Important Huli locus
- ☼ mountain peak
- ~ river



that the Huli have no remembered contacts with language groups other than their immediate neighbours before 1935, when an Australian administration patrol led by Hides and O'Malley trekked into Huli country.

This first contact surprised both parties, since neither was aware of the other's existence. Both were cautious, but initial relations were cordial, and the patrol made its way across the southern edge of Huli territory. Hides camped above a huge intermontane basin, and came to call it "Tarifuroro" when an old Huli who had come to visit them gestured towards the valley and said this (Hides 1939: 91). It seems likely now that what the Huli probably said was

[t<sup>h</sup>ayaɬi p<sup>h</sup>ɔɬɔɬɔ]  
Tagali porogo  
Tagali go-ɬS-SIMP PRES-DET  
(to the) Tagali (river) I go  
I'm going to the Tagali

but, whatever the case, this 'name', shortened for convenience to "Tari", was eventually given to the largest administration centre to be set up in Huli country.

Unfortunately, the friendliness that marked the initial encounters between the Huli and the patrol did not last, and three Hulis - including one girl (Frankel 1986: 14) - had been shot dead before Hides and O'Malley moved on. When the next patrol, led by Taylor and Black, came through the area in 1938-39 it was allowed free passage, as was the party led by Smith, Clancy and Neville, which entered to set up a permanent administration centre and to commence work on an airstrip in 1951.

This airstrip and its adjoining settlement were called "Tari", and the Australian administration went on to establish similar centres at Goloba ("Koroba") in 1955 (Sinclair 1966),

Magarima ("Margarima") in about 1960, and Gumu ("Komo") in about 1965. The first christian missionaries arrived in Lumulumu (the Huli name for "Tari") in 1952.

## 1.2 LANGUAGE STUDIES

During the period 1954-55, W.M.Rule produced an orthography and a preliminary pedagogical grammar of the language, the latter being revised around 1964. The policy of the missionary group to which Rule belongs is to limit the availability of its language materials to those within its own organization. However, part of Rule's Huli grammar has been published by Oceania (Rule 1977) and is accessible in this form.

Among others who have contributed to the study of the Huli language by data collection and analysis are Rev. Berard Tomassetti, Timon Kaple, Myron Flax, Matthew Gross, Dominic McGuinness, Malachy McBride and Lawrence Pozzouli, all of the Order of Friars Minor Capuchin, and Rev. David Neis, Patrick Ruane and Kevin Flanagan.

G.C.J. Lomas produced a separate phonemic statement in 1969, and began production of a pedagogical grammar in 1974. He also produced a Huli-English dictionary and, in collaboration with Rev Malachy McBride, an English-Huli dictionary.

In about 1972 there was a general agreement among those working in linguistics and literacy to adopt Rule's earlier orthographic statement, and the bulk of language materials produced since then, including the Huli New Testament, have used it.

Between the years 1977-79, B. Cheetham visited the Huli country a number of times and made a study of formal and non-formal education systems. His circulated papers include one on

prosodic vowels (Cheetham 1977).

### 1.3 ETHNOLOGICAL STUDIES

R.M. Glasse has published a number of papers on Huli culture (Glasse 1959a, 1959b, 1965, 1968 and 1974), as well as a doctoral thesis (Glasse 1968). Although he was restricted to the vicinity of Lumulumu, his account remains the major and most significant one of Huli society.

Another anthropologist, P. Challands, conducted a demographic survey in the Tari basin in connection with a population control programme in the mid-1970s.

In 1975, B. Peters completed an honours thesis on Huli music (Peters 1975), and in the same year J. Pugh(-Kitigan) did likewise, her thesis being on the communicative function of music in Huli society (Pugh-Kitigan 1975). She pursued her studies to doctoral level and published further papers on Huli ethnomusicology (Pugh-Kitigan 1977, 1979 and 1984).

S.J. Frankel in 1976 researched the Huli attitude to sickness, completing a doctoral thesis in 1981 and publishing it in book form in 1986 (Frankel 1986).

L.R. Goldman also undertook anthropological studies among the Huli, and has published various accounts of Huli society (cfr Goldman 1979, 1980, 1983, 1986 and 1987).

With the exception of Challands, all those involved in ethnological studies of the Huli have either published their findings in journals or books, or have left written accounts of their work in thesis form. On the other hand, Rule alone of the linguists has published something of note on the language itself: the revision of his MA thesis (Rule 1977), which

appeared in 1977 (Rule 1977).

#### 1.4 THIS PRESENT STUDY

This study has been influenced by the work of those mentioned in 1.3, but especially by Rev B. Tomassetti and M.Gross, and by W.M.Rule.

I have used the method of phonological description devised by Chomsky & Halle (1968) and modified by others such as Hyman (1975). This method has its drawbacks, particularly in correlating the proposed distinctive features with physiological data produced through scientific instruments, as is demonstrated in empirical studies seeking to differentiate between 'tense' and 'lax' (cf Maddieson & Ladefoged 1985), and efforts to describe 'aspiration' (cf Chomsky & Halle 1968: 326-329). However, it also offers economy of description, allowing the enquirer to explore phonological change in an interesting way, and to establish useful rules that point to the motivation for this change.

The description of verb morphology identifies three classes of verbs, along with three distinct suffix groups. It elaborates on the notions of existential verbs (EV) and adjunct + pro-verb (APV) constructions, taking up the insights of Adrienne Lang (Lang 1975). The APV in particular is shown to be a configuration that persistently re-occurs, demanding consideration at various levels of language structure.

The semantico-syntactic description of the language relies heavily on the functional-systemic theories of M.A.K. Halliday (Halliday 1978, 1985a, 1985b, etc.), which offer interesting insights into the language and its use.

Typological features such as switch-reference and covert

noun classification are discussed, as are registers and genres. The linguistic description is preceded by a general description of Huli society, and is rounded out by a description social and linguistic changed occasioned by the advent of 'Western' culture and the new languages that came with it.

Seven texts are then presented that illustrate many of the linguistic and socio-cultural features described in preceding chapters of the thesis. These are followed by appendices that contain data on a tone survey, a glossary of the Huli that occurs in the body of the thesis, and a list of verbs randomly selected when conducting a survey into the semantic domains of verb classes.

### 1.5 ENVOY

This grammar is clearly an account of only a small part of the language. It is an initial attempt by a non-native speaker to come at some of the interlayered networks and systems that are constituents of a living and ever-changing reality made up of the language and its speakers. Perhaps it is only the native speaker who has enough access to a language and to the culture it signals to enable him/her to write a linguistic description that is truly coherent. I would hope that when the day comes for a native speaker to write such a description of Huli, this study, and others like it, will provide the writer with a useful starting point.

## CHAPTER 2

### TRADITIONAL SOCIETY

#### 2.1 GEOGRAPHICAL SETTING

The land in which the Huli people dwell is one of contrasting scenery, notable for its rugged mountain ranges and fertile, swampy valleys. The rivers that drain the area are subterranean in sections, and there are numerous caves and potholes in the limestone rock formations. In places the rivers run swiftly through deep gorges, while elsewhere they take a less hurried course through swamplands in the wide, expansive intermontane basins. The slopes of all but the tallest of the highest mountains are covered in dense rainforests, with here and there an outcrop of white limestone cliff or a patch of light green swordgrass.

The rainforests provide timber, vine and bamboo for the construction of dwellings and the crafting of artifacts, while pandanus palms in the high bush yield crops of nuts, rich in protein and harvested each year. Small game animals, such as pigs, possums and cassowaries, also provide a source of protein, and are hunted for their pelts and feathers.

There are areas of volcanic soil, ideal for the cultivation of sweet-potato, which is the staple diet. Other arable land is to be found in the higher parts of swamps - like the areas around their edges - and on mountain knolls and the smaller high plateaux where people plant their gardens and husband their pigs.

The success of Huli subsistence economy is linked to the



climatic conditions, and although these are sub-tropical, the average annual rainfall is high. Persistent and heavy rain always brings the threat of flooding and crop damage, while periods of drought can cause frost to occur in the higher regions.

Some people live at heights as great as 2,000 metres above sea-level, while others dwell in the deeper mountain valleys and in the lower areas of the central cordillera at altitudes of only 1,000 metres. Consequently, temperatures across Huli country can vary greatly, although the main body of the population - in the Wabia-Lumulumu-Burani-Goloba region - enjoys a daily temperature of about 20°C and an average nightly temperature of around 10°C. This temperate climate persists throughout the year, with no seasonal variations.

The climate, the rugged terrain, the flora and fauna: all these are important environmental factors in Huli life. They are constant referents in Huli poetical expressions (cf Pugh-Kitigan 1975: 191), and especially in Huli music, which is an extension of speech (Peters 1975: 53) and functions as a significant form of communication, both phatic and ritual. Environmental factors are also determinants in Huli structural and behavioural patterns, and Huli technology and ideology.

## **2.2 TRADITIONAL BELIEFS**

The complicated account of Huli beliefs given in Glasse 1965 is based on data he gathered in Hoyabia, near Lumulumu. Since his day, others have queried his findings (e.g. Goldman 1983; Frankel 1986), especially in regard to his main claim: that the Huli descent system is cognatic. It is certainly true that Glasse's view was limited by his being unable at the time

of his fieldwork to move freely in and out of what was then restricted territory, but subsequent studies have also been based on data gathered in particular communities, not from the wider, more general Huli population. Barnes has said that 'Huli institutions are likely to remain analytically controversial' (Glasse 1968: 4), and while this might be true, some aspects of Huli culture identified by Glasse are widely held or known. I will describe these briefly, adding observations of my own.

2.2.1 **dama** These are a loose hierarchy of supra-human beings that inhabit the sky, rivers and water holes, caves and dense bushlands, and - especially - the higher reaches of the mountains. They control the climate and the land, and affect fertility in both soil and livestock. They can cause a variety of sicknesses and misfortunes in humans, including death, and are constantly and capriciously active in human affairs.

The originating **dama** of the Huli and their neighbours are generally less malevolent than others, and all **dama** can to some extent be placated and persuaded to desist from causing harm. Sometimes they can be tricked or warded off, and it is even possible to manipulate some of them and harness the powers that they possess (cf Glasse 1965: 33-37).

2.2.3 **dinini** Less powerful than **dama**, but still more powerful than humans are the **dinini** or ghosts of the dead. These, too, are active in human affairs, male ghosts being benevolent and protective towards their descendants, while female ghosts are invariably spiteful and malevolent to all except their own offspring. Some **dinini** have wandered in from other places and taken up their abode in Huli territory, and these may be looked upon as having almost the status of **dama**. **dinini** cannot be ap-

peased, only tricked or thwarted by the use of strategies more powerful than theirs (cf Glasse 1965: 29-32).

2.2.4 **tomia** This is a general term for power that is not necessarily attached to **dama** or **dinini** but can reside in some material objects - such as stones - or be generated by certain religious formulae called **gamu**. It can cause sickness or death, either accidentally or through human manipulations (cf Glasse 1968: 105-106).

2.2.5 **wali** This is the Huli word for 'woman' or 'women', who are all regarded as being unwittingly endowed with **tomia**, especially potent in their menstrual blood. They are seen as being a baleful influence on and a potential source of danger to men. On occasions they may consciously use their powers to cause harm (cf Glasse 1968: 106), and men have to learn ritual strategies to guard themselves against them.

## 2.3 SOCIAL STRUCTURES

Having looked at some salient aspects of Huli ideology, we shall now consider in outline Huli social structures. It is convenient to examine these under the classification labels 'hereditary' and 'non-hereditary', although there is some overlap between these categories.

### 2.3.1 Hereditary Social Structures

2.3.1.1 **hamigini** This is a social group with residential rights within a defined territory. Membership is reckoned in terms of descent - cognatic according to Glasse 1968, agnatic according to Frankel 1986. Whatever the case, membership is

established by being able to trace one's ancestors back through many generations, and thus demonstrate one's claim to identity with the group. The Huli term **hamigini** is equivalent to what Glasse calls a 'parish' (Glasse 1968: 23-24), while his term 'parish section' equates with the Huli **hamigini emene**.

2.3.1.2 **hamigini emene** This is a unit residing within and owning a portion of the territory occupied by a **hamigini**. At this point it will help to clarify matters if I start to call a **hamigini** a clan and a **hamigini emene** a subclan, always bearing in mind that for the purposes of this study the terms 'clan' and 'subclan' take their definitions from the Huli terms to which they have been made to correspond.

Subclans are autonomous and are the basic social units of Huli society, making war, initiating peace and paying indemnities without obligations to consult the rest of the clan (cf Glasse 1968: 24). Claims to membership and to territorial rights are based on a person's being able to establish descent from the founder of the subclan, or relationship with a subclan member. Affines also become resident members, as do those who are permitted through bonds of friendship to reside within the subclan and align themselves with it in its activities (cf Glasse 1968: 24-35). Non-kin, however, can never claim the position accorded to full members of a subclan.

This position has to do with the amount of security enjoyed as regards land tenure, and the extent to which a person is morally obliged to be involved in subclan activities. It also governs the degree of support a person is expected to give or can expect to receive in discharging obligations or accepting death indemnities from others.

This basic pattern is complicated by the fact that a person may, by descent, be affiliated to more than one subclan, and a further complication arises in that people can, and frequently do, reside multilocally. Hence, an individual will usually belong in one way or another to more than one subclan at a time. This mobility and freedom of choice mean that kinship and other ties extend beyond subclan territorial boundaries.

2.3.1.3 Kinship structures. The extent of close kinship within Huli society is reflected in the language: 'brothers and sisters' include what we would call half-brothers, half-sisters, and all parallel cousins (cf Glasse 1968: 148). Within these parameters, siblings of the opposite sex call each other reciprocally **mbalini**, female siblings call each other **hagabuni**, and male siblings share among themselves the label **hamene**. The label **aba** includes one's father and all those whom he calls **hamene**, and the term **āija** includes one's mother and all those whom she calls **hagabuni**.

The terminology and the semantic fields covered by each item indicate the generally wide concept of family held by the Huli, although when occasion demands, finer and more precise distinctions can be made. Thus, the relationship between paternal uncle and nephew/niece is designated by the reciprocal term **ajane**, while the term **ama** is used reciprocally of the relationship between maternal aunt and nephew/niece.

It can be seen that while a subclan is an extended family, kinship structures go well beyond its confines.

2.3.1.4 Marriage. Although marriage is an institution rather than a hereditary structure, it is convenient to consider

it here.

2.3.1.4.1 In Huli society a man is free to take as many wives as he can afford. Choice of marriage partners is restricted to some extent by hereditary kinship structures, custom demanding agnatic exogamy but forbidding the marriage of close cognates (Glasse 1968: 49). This leaves open the possibility of marriages extending beyond clan confines, and even to other language groups.

2.3.1.4.2 A young man and woman may freely choose to marry each other, or a man's bride may be selected for him by his sub-clan or close kin. Either way, the marriage is instituted by the bride's kin receiving from the groom's kin a suitable bride-wealth - a payment made mainly in pigs, varying in number from 15 to 30. The groom has the right to designate the bride's place of residence, and has the duty to build a house for her and give her land on which to work a garden.

The bride is expected to rear the children, tend the garden, and herd the pigs. Girls are her continuing responsibility, but her sons go to live with their father when they reach the age of nine or ten. In general, the husband is deemed to have greater rights over the children than the wife, and even after divorce he can claim the major share of any brideprice paid for daughters living with his former wife or her kin (Glasse 1968: 54).

2.3.1.4.3 Divorce is not infrequent, the commonest cause being failure of the woman to produce children. A man will be anxious to recover the pigs paid for a woman who proves to be lazy or unbiddable, while on her part a woman can end an unsatisfactory

union simply by leaving her husband (Glasse 1968: 76).

### 2.3.2 Non-hereditary Social Structures

In Huli society there are no hereditary chiefs or offices that carry political power that underpins the hereditary structures described above (cf Glasse 1968: 21). An exception to this can be found in some clans where the reposit of geneological history is in the hands of a single individual, who can trace his ancestry back to the clan founder. Apart from this, power and social importance can be achieved by any man with the right combination of talents, ambition and industry, a man's influence over others being in direct proportion to his mastery of practical skills and the strategies necessary for combating malevolent influences. In almost every case, mastery of skills and strategies is linked directly to mastery of their associated varieties of language, and one who has command of esoteric or secret registers and genres is held in regard, and others will tend to listen to his counsel and follow his lead.

This type of leadership is exercised in various areas of social and economic activity, and I shall describe some of these now.

2.3.2.1 **homogo** A man who has succeeded in gaining wealth above the ordinary is called a **homogo**. His success is evident in the size and productivity of his gardens, the number of his wives and of his children, and the health, size and number of his pigs. He usually has gardens in several subclan territories, residing multilocally, and his influence is felt by many. He clearly has the wisdom and secret strategies necessary for success, and his advice is sought - and bought - by others. Because of his standing in different subclans he is a natural ar-

arbitrator in times of dispute, while his wealth makes him a valuable associate when death indemnities have to be met or when bridewealth has to be paid. He may or may not be also recognized as a **manaji**.

2.3.2.2 **manaji** One who is in possession of considerable secret knowledge is called a **manaji**. His knowledge is of religious rites and divinations, and his power has been proved. He may also be a custodian of Huli myths and lore. Among the publicly acknowledged **manaji** are figures of influence such as the leaders of the **haroli** or bachelor cult (cf Cheetham 1979: 89) and the leaders of cave cults (cf Habel 1979).

2.3.2.3 **dandaji** These are men skilled in war and hunting, knowledgeable in the use of fighting spells and strategies, and in the secret language necessary for journeying into the high bush. They are natural candidates for leadership in war, although war parties usually tend to follow the successful man of the moment.

2.3.2.4 **dombagwa** An arbitrator in disputes is known as a **dombagwa**. He usually has command of the special register called **damba bi** (cf Goldman 1980: 224), and is skilled in remembering details, so that he is able quickly and vividly to relate the background to the matter under dispute (Peters 1975: 19) and to point towards a solution. He is frequently, but not necessarily, a **homogo**. An accomplished **dombagwa** will chant the **damba bi** in monotone.

2.3.2.5 **Singers** There is no generic term in Huli that covers those who exercise an influence in society through music. Players of the **gāwā** 'mouth bow' and **hirijule** 'jaw's harp' art-



iculate words as they play, telling stories and recounting everyday happenings (cf Peters 1975: Pugh-Kitigan 1975). Chanters of the long and intricate *bi te* 'folktales' make an essential contribution to poetry and to phatic communion, as do the singers of ritual *u* 'love chants'. Performers of the *dawe* 'wail for dead men' and the *dugu* 'wail for dead women and children' are leaders in important social functions, esteemed for their skills. Players of the *gāwā* and *hirijule* may also be feared a little, since *gamu* 'religious formulae' are known to gain potency when performed on these instruments.

2.3.2.6 *jagibano* Men who achieve no distinction in society and are patently unsuccessful - with few children, poor gardens and sickly pigs - are called *jagibano*. They are presumed to have failed to have gained even the minimum knowledge of everyday living skills and the basic *gamu* necessary for ordinary success. They are at the opposite end of the continuum from the *homogo*. A *jagibano* may be married, but more typically he is single. Such single men, including widowers, are called *daloali*, and generally they have little social influence. A marked exception to this, however, is the *daloali* who leads the *haroli*.

2.3.2.7 *haroli* Significant in Huli society are the members of the bachelor cult, the *haroli* or *ibagija*. This cult is part of the initiation process for young men, the group being led by an older, celibate, man, the ritual *daloali*. He is admired and feared for his command of *mana* 'lore' and *gamu* 'religious formulae', for his wealth in pigs and for his spartan way of life. Young men pay highly to join the cult for two or three years, learning from the *daloali* - who is also a *manaji* -

the complexities of traditional mythology and lore, especially the religious strategies for warding off the evil influences of women. The *haroli* are segregated from the rest of society, living in large tracts of dense bush into which no woman or married man may go.

2.3.2.8    *kebeali*       Similarly segregated from others are the curators of cave shrines (cf Habel 1979: 19-24; Goldman 1979), the *kebeali* or *gebeali*. These custodians of the shrines are meant to refrain from contact with women during their terms of office, and to dwell apart from the rest of the community. They are privy to the religious rites and formulae necessary for mediation with the *dama* that inhabit the shrines, and can command high fees for the placatory services that they perform.

2.3.2.9    *wali*       The position accorded women in Huli ideology is reflected in the social structures. Women live apart from men and have little voice in decisions taken at subclan level. Even when they have been the cause of a war they take no part in the fighting or in subsequent negotiations for peace (cf Glasse 1968: 99-100). Their say in the choice of a marriage partner depends to some extent on how assertive they are (cf Glasse 1968: 52), but ultimately it is the male members of the subclans involved who control the decision and settle on the bridewealth.

2.3.2.9.1    A woman may own pigs and other valuables, and she is entitled to the food she grows in her gardens, but she can never achieve the wealth and influence that a man can. She may gain a certain standing among other women as a chanter of *dugu* or a player of the *gāwā* or *hirijule*, or as one who possesses special secret knowledge and *gamu* (cf Pugh-Kitigan 1975: 45),

but her political influence in society at large is not significant.

## 2.4 TECHNOLOGY

This word is used to designate the means employed by a society to control its environment and enhance its well-being. Under this heading I would like to consider briefly gamu, gardening, animal husbandry, and houses and other artifacts.

2.4.1 gamu This term is used generically of religious formulae, which are directed primarily towards achieving material well-being through the manipulation of non-material controlling forces. Thus there are gamu associated with nearly every situation to be encountered in daily life, and a simple working knowledge of these is considered normal. There are also gamu performed at clan and subclan levels, led by those that have the specialist knowledge required - such as the kebeali already mentioned (cf 2.3.2.8 above).

2.4.2 mabu There is a variety of gamu to accompany the important practice of gardening. Gardens, called mabu, are made by clearing the bush and digging over and composting the soil before planting. Each person has a large garden in an area of cleared bush, drained by deep ditches and protected from stray pigs by wooden fences. The initial heavy work of clearing the bush is done by the man, but the woman will then do the mounding and planting if the garden is meant for her, otherwise the man usually completes the work by himself.

2.4.3 anda A similar division of labour is observed in constructing anda 'houses'. The man cuts down the trees and

adzes the planks from which the walls and rafters are made, and the woman brings bundles of swordgrass to be used for thatching. Usually houses are not situated by the owner's main garden, but scattered through the bush, each house having its own gama 'small garden' around it. A typical anda is about 1.5 metres in height, 2 metres wide, and 3.5 metres long, with a dirt floor that has a scooped-out fireplace in the middle.

2.4.4 Some artifacts. Essential artifacts for Huli undertakings are the stone axe, aju, and the hardwood digging stick, keba. String is made by rolling tree fibres together, and is used to bind the axe head to the haft. It is also used for a variety of other purposes, one of them being to make the woven string bags, nu, carried by men and women alike. Men weave it into an apron or sporran to cover their genitals, using sprigs of leaves to cover the buttocks. Most men wear a manda 'wig', woven from human hair, and most have a danda 'bow' and timu 'arrow/s' for hunting and for warfare.

Women dress in hurwa 'skirts', made from dried reeds and, like men, will frequently carry a dalu tu 'raincape' in their bags. Women seldom smoke, and those that do use pipes made of bamboo (mundu be), just as the men do. Other important artifacts are the tabage 'drum', played by dancers, and the gāwā 'mouth bow' and hirijule 'jaw's harp', mentioned in 2.3.2.5.

2.4.5 Animal husbandry. The most important domesticated animal is the pig, nogo. It is easily cared for, being allowed to roam free during the day, or simply left tethered to a clump of grass while its owner is busy in the garden. At night, pigs are herded into a separate part of the woman's house, into a pen called a golia, and there shut in and fed on sweet potato.

Other animals domesticated for food are chickens, which were introduced by white people, and cassowaries, although the latter are regarded as exceptional, since they do not play a significant role in the Huli economy. Dogs are kept for hunting purposes, or as household pets, and are not considered to be edible meat.

## 2.5 SOCIAL BEHAVIOUR

The social behaviour of the Huli cannot be described in detail here, and I shall concentrate on brief descriptions of the behavioural patterns of women and of men, and on the notion of taga 'loss of face'.

2.5.2 wali A woman's daily round involves herding the pigs, looking after the children, and weeding and gathering food from her garden. She prepares food for herself and her children by baking sweet potatoes in hot embers, or steaming them in an oven made by heating stones and then placing the food on them before covering them over with banana leaves and earth. She works away little by little at tasks such as rolling string and making it into pig ropes or string bags, and at making skirts for herself and for her daughters.

She spends much time socializing with other women, establishing a network of relationships and dependencies through casual barter and exchange, or through simple phatic communion. She acquires knowledge of gamu in this way, and uses it as the needs arise. She may also practice on and become skilled in playing the gāwā or the hirijule.

She joins the other women of her kindred to wail and mourn at burial ceremonies, and may become a leader of dugu chants.

She is similarly present and involved at clan and subclan rituals, and will expect her husband to give her vegetables and pig meat cooked in the long earthen ovens dug out for the occasion by the menfolk.

Her daughters receive no formal education from her or from the other women of her group, but copy their mother and assist her from an early age with the domestic chores. When her daughters reach puberty they will be instructed briefly by their mother or by older women on the need to hide during menstruation, and on the gamu to be used to secure a strong husband and to protect him when he is away hunting or at war. They will begin to notice young men, especially the haroli, whom they will see from time to time at ceremonies and celebrations.

A girl may become a man's first or second wife, and will usually leave her subclan to join his. She will have her own house, to which her husband never comes, and will meet him in the bush to consummate their union. Older women will assist her at childbirth and supply advice on the gamu and other measures necessary for childbearing.

2.5.3      **agali**      A young Huli boy leaves his mother's house when he is about nine years old and goes to live with his father and male relatives. He ceases to accept food cooked by women, and begins to learn from his father important things like gardening, hunting, cooking, and warfare. He learns who his enemies are and where the subclan and clan boundaries lie.

He learns to respect and obey the older men, who reward him for minor services and generally protect him, giving him food and shelter when he needs them. He gradually and informally begins to acquire skills, and in his early teens will begin

to make his own garden and look after himself. He will be given small pigs by friends, and will either herd them himself or get his mother or sisters to herd them for him.

He may or may not become a haroli, and if he does he will have to rely on his network of relationships within his subclan when arranging for his garden and pigs to be cared for while he is away. In return for this care he is expected to pay pigs and food.

While with the haroli his knowledge of sacred myths, lore and gamu is deepened. He learns how to conduct himself in a manly way, to put up with unusual privations, and to negotiate the difficult and sometimes dangerous task of surviving in the dense bush. He is taught the strategies necessary to combat the evil influences of women, and how to weave the upward-curving manda 'wig' that is worn by the haroli.

When he leaves the bachelor cult he becomes a warrior, returning to his subclan but ready to join in warfare between other subclans, even when he has no personal interest in the matters under dispute, for to be brave and daring is to earn esteem. Thus he becomes involved in the chain of conflict and revenge that is endemic in Huli society. He will not be significant in subsequent peace negotiations, but will attend the mourning feasts for those killed. He will not be allowed to remain for the evening courting parties that follows these feasts, at which only married men and unmarried women may be present.

Indeed, he will not have much influence in these affairs, nor in decision making at subclan level, but will follow the decisions and directions laid down by older men. He will also join hunting parties that from time to time go to the high bush

to seek game and to harvest pandanus nuts, and will learn the *tajanda bi* 'bush language' used by his subclan to confound the *dama* and *dinini*.

He will soon marry, having little part in the negotiations over the bridewealth, but being responsible for assembling the number of pigs eventually decided upon. If he cannot meet the price he has to rely on his kinsfolk and friends to assist him, and will incur debts that he must eventually repay in full. But he will not be pressed to make repayments, and within the delicate and complex web of interpersonal relationships will remain always to some degree in debt, with others always to some degree in debt to him, for the rest of his life.

He may begin to specialize in certain forms of *gamu*, paying pigs to others for the knowledge they impart. If he pursues his specializations, he may eventually become acknowledged as a *manaji*, and in his turn will begin to command fees for his services.

Generally, his interests expand and his individual initiative begins to develop as he starts to reside multilocally and to participate in the affairs of a number of subclans simultaneously. When conflicting claims arise amongst these subclans, he may adopt a neutral position by withdrawing to another place or he may espouse the cause of one particular group (cf Glasse 1968: 136).

As his wealth increases he has to acquire more and larger gardens for his pigs, which in turn means more wives to take care of these assets. More demands will be made on him for assistance, and he will become recognized as a *homogo*. He becomes an important man, known beyond the confines of his own clan, and he will begin to wield an influence throughout a wide area.



(cf Glasse 1968: 136.)

Such a *homogo* has to have considerable interpersonal skills, knowing the right things to say and the correct registers to select when addressing people. Others, less endowed with these talents, will achieve influence in the other modes of leadership outlined in 2.3.2. specializing in the registers associated with these pursuits. (Cf Glasse 1968: 135-136; Peters 1975: 1-17; Cheetham 1979: 88-89.)

2.5.4. *taga* This word can be glossed as 'shame' or 'loss of face', and, together with *turu* 'well-being' or 'maintenance of face', is central to a behavioural norm that says one should avoid inducing *taga* in another and foster his/her *turu*. Failure to observe the prohibitive aspect of the norm can have serious consequences, since *taga* always has to be repaired or assuaged.

If the *taga* is private, then the experiencer can normally be compensated in private. However, if *taga* is caused publicly, the aggrieved party will usually seek some form of public redress, such as a moot at which the compensation can be fixed (eg Goldman 1980: 219-220). If *taga* is experienced by whole subclans, the compensation claimed can be high, and war may ensue if the claim is not met.

*turu* is seen as a condition that each person should be allowed to maintain in himself or herself. To ensure that one does not destroy this condition in another by causing *taga*, even accidentally, requires circumspection in a society where most words and actions are in the public domain. To foster *turu* in another requires *dara* 'empathy' or 'sympathy', and certain associated skills.

Brown and Levinson have proposed a universal,

highly abstract notion of 'face' which consists of two specific kinds of desires ('face-wants') attributed by interactants to one another: the desire to be unimpeded in one's actions (negative face) and the desire (in some respects) to be approved of (positive face). (1987: 13)

Given that every utterance is potentially face-threatening for both speaker and hearer, the speaker employs a range of politeness strategies to cope with this problem (Brown & Levinson 1987 67 et seq). These include whether or not to do the face-threatening act (FTA); whether to do it off record (ambiguously) or on record (unambiguously); whether to do it baldly (explicitly and clearly) on record or to redress the hearer's positive face (positive politeness) or negative face (negative politeness).

This fairly comprehensive description provides a template for surveying a speech community's politeness strategies. It is possible to cross-reference it to the broad categories of Huli taga-avoidance (face saving) strategies and turu-fostering (face giving/maintaining/enhancing) strategies.

taga-avoidance may address the hearer's positive or negative face. It is operative, for example, in the use of bi jōbage 'veiled talk' (cf 10.5.3.13) - circumlocutions and covert references - when airing grievances, and in the careful use of softeners, such as the enclitic (-) be (cf 5.5.1), when addressing people one is not sure of, or who are evidently more powerful than oneself. This latter category includes older people of both sexes.

turu-fostering strategies usually attend to the negative face of the hearer, and include prompting devices such as supportive anaphoric bridging (cf 4.3.2.2;12.2.1]), and also affirming utterances such as

agali hegeneme bajwa ore birida  
man tongue-ERG well very do-2S-SIMP PAST-MOD  
you're not just a talker: you've acted on what you said

daraba  
empathy-MOD  
I feel empathy with you  
(said on coming upon someone enjoying a sunset)

Included under *turu*-fostering are strategies to repair *taga*, which may be used to signal supportive acceptance of the hearer even when the *taga* was not caused by the speaker. Thus,

ai daraba  
ah empathy-MOD  
ah, I feel empathy with you/ sorry for you  
(said when the hearer fell off his motorbike)

can be seen as a repair strategy.

Besides humans, *dama* and *dinini* also have to be taken into account. If they are offended, they will feel not *taga*, but wrath. However, their negative face can be addressed and they can be made to feel *turu* by propitious behaviour.

The question of politeness strategies is a fascinating one, and deserves a study in its own right. The work of Piirainen-Marsh and Marsh (1987) illustrates that such an undertaking requires a careful analysis of a very considerable amount of authentic data. In this present thesis this matter cannot be given such detailed attention, but it is taken up again in the sections cited above, and in the exploration of texts in chapter 12.

## 2.6 NEIGHBOURS & PUTATIVE MIGRATIONS

The people of the Gubari-Wabia area (cf map p.2) regard their homeland as having been bequeathed to them by a common putative male ancestor called Huli (cfr Glasse 1968: 20). According to their myths, the brothers of Huli - Duna, Obena, Hewa and Duguba - founded the neighbouring tribes, to whom the Huli consider themselves to be related in some way.

This notion of the primacy of Gubari-Wabia, and of its being the originating locus of the Huli people is fairly widespread, and acknowledged by Huli clans even in the outer regions of Huli territory. Wabia in particular is often designated by other Huli clans as being Huli ore 'true Huli', and many oral traditions tell of migrations from there to other loci.

The traditions suggest that there have been migrations from Wabia southwest into the Gumu area, south towards Gudubu, and across the Doma Peaks into Magarima and Kandep. Migration also seems to have occurred just north of Gubari into the Gambe, and thence across into the Goloba area. From Goloba, migratory strands can be traced into the high western swamplands and then down through the Hanimu valley into the area around Gumu. Another strand extends from Goloba down to Burani and environs, while a third follows the eastern bank of the Tagali river down to Tani and Hiwanda.

There is some linguistic evidence supporting these claimed migrations in that Huli dialects seem to follow the same geographical boundaries. The map overleaf shows Huli isolects, indicating phonological, morphological and lexico-semantic variations; putative migrations are shown by arrows.

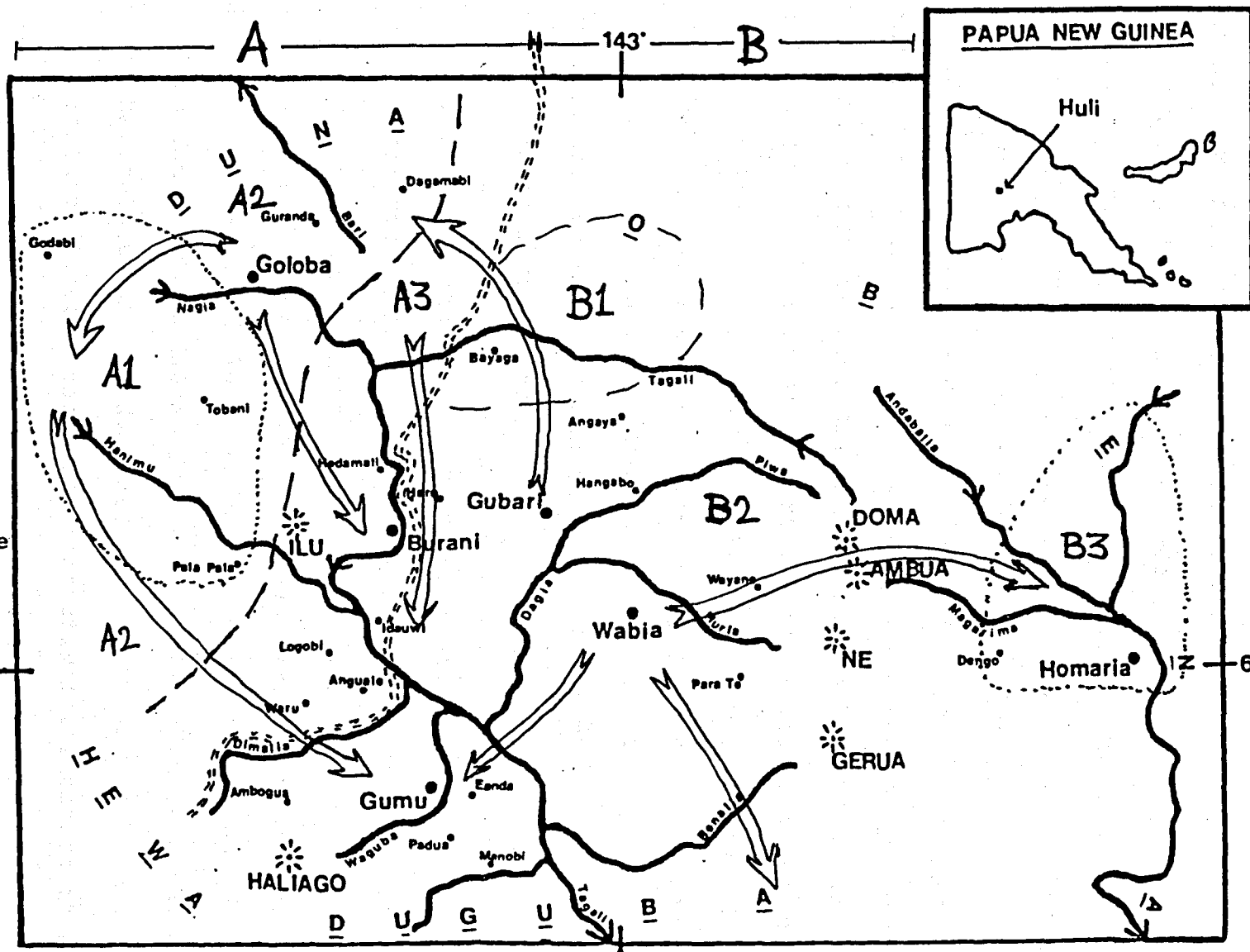
2.6.1 Isophones. A major phonological boundary extends along

Figure 2:

Isolects and  
migrations

KEY:

- isophone
- A-B isophone
- ..... isomorph
- ➔ putative migration
- Important Huli locus
- ☼ mountain peak
- ~ river



the isophone which divides dialect A from dialect B. Speakers of dialect A front and raise the phoneme /a/ to non-allophonic [e] when it occurs in the penultimate syllable of inflected verbs, whereas speakers of dialect B realize it as one of the phoneme's allophones.

Within dialect A there are further divisions. Speakers of A2 tend to aspirate word-initial vowels - very likely under the influence of Duna, whose speakers in the Goloba-Gelabo area show a similar tendency. Many A1 and A2 speakers also substitute [p] for [ɸ̃] (cf 3.10.1.4) in certain word-medial environments.

Speakers of A3, besides aspirating word-initial vowels, also tend to replace word-initial stops with their corresponding fricatives, while speakers of B1 do not aspirate initial vowels, but do tend to substitute [ɸ̃] for [p<sup>h</sup>] and [β] for [b] in word-initial positions.

2.6.2 Isomorphs. The lines encircling dialects A1 and B3 are isomorphs. Dialect A1 differs from other Huli dialects in that verb forms which in other dialects are Precautionary (5.4.6) or Permissive (5.4.8) become Imperative Future (5.2.15) in this dialect. While there does not seem to be any obvious explanation for this there is a ready explanation for the process that sets up the B3 dialect.

In this dialect, there is a tendency for speakers to omit word-final vowels. It seems likely that this could be due to the influence of Wola language speakers, with whom the Huli of the Magarima area share a land boundary, and with whom they intermix and intermarry. Wola is related to the Mendi language family, in which final vowels are usually deleted.

## 2.7 CONCLUSIONS

It seems reasonable to suggest that personal well-being and the esteem of others are important values in Huli society. They are attained through acquisition of wealth and of leadership status, which in their turn come through the mastery of practical skills and of the strategies needed to influence both supra-human beings and other members of society. This mastery depends heavily on knowledge of and proficiency in certain registers and genres of the language.

Social power and prestige are not inherited but acquired, and positions of leadership depend on a person's ability to articulate genres such as gamu, or registers such as damba bi, and the services connected with these positions usually command fees. Hence, leadership leads to increased wealth, which in turn generates more prestige and power, which then produce further increases of wealth ..... and so on. Clearly, non-hereditary social structures are integral components of the Huli economic system.

At the same time, hereditary social structures are also bound up with the values of personal well-being and social esteem. For society to remain in equilibrium, kinship and sub-clan ties, and the mutual obligations these entail, must be preserved. The responsibility for this rests largely with the older men, who are normally the ones with most wealth and influence.

It is interesting that the dual concerns over personal autonomy and group acceptance are reflected in the taga-turu norms and the avoidance and fostering strategies that are encoded even in the morphology of the language.

The rôle of women is a minor and subservient one, and they

are excluded from positions of significant influence and social power. They, too, need to master certain linguistic and practical skills in order to maintain their social status and fulfil the expectations of society.

This picture of traditional Huli society is basically the same throughout the land in which the Huli people dwell, and through which they see themselves to have diffused in migratory waves from a single originating locus. Neighbouring language groups are regarded as related in some mysterious, half-explained way, but, except in peripheral areas such as the northwest and southeast, are inconsequential in every life.

The perturbation consequent upon the introduction of Tok Pisin and English is discussed in Chapter 11. Before coming to that I would like to present a description of the phonology and grammar of the language.



## CHAPTER 3

### SEGMENTALS

#### 3.1 INTRODUCTION

There are thirty-nine Huli phonemes, twenty of them being obstruents. Of these obstruents, those that carry the specification [-continuant] form a series whose members include segments that are [+nasal], segments that are [+round], and others that have both of these specifications.

Rounding and pre-nasalization are found among the obstruents that are [+cont], and phonemic rounding is also present in the series of glides.

The phonemes are set out in figure 3 below, the first six lines being [-cont] obstruents, the next three [+cont] obstruents, and the eleventh and twelfth lines glides.

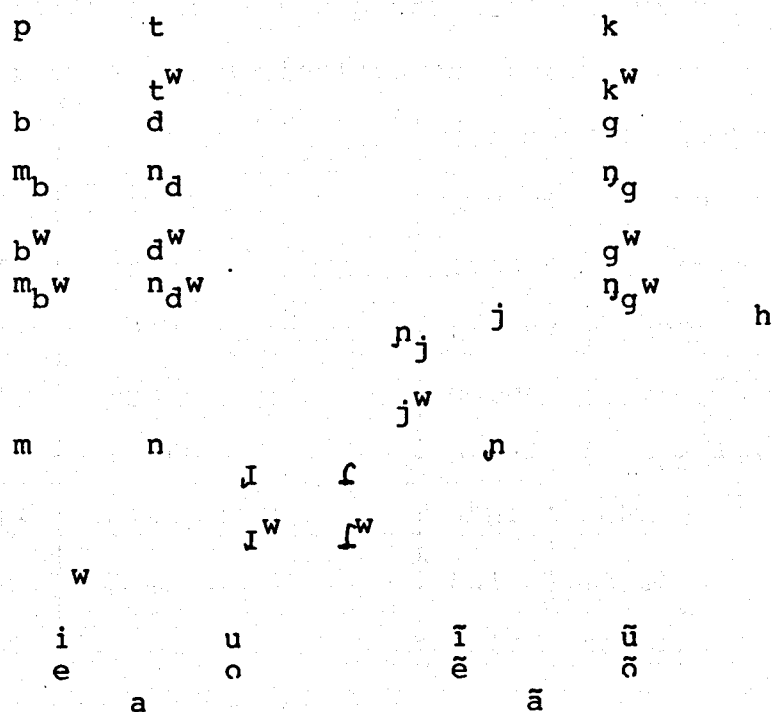


Figure 3: The phonemes

3.1.1 The major classes of Huli segments are obstruents, liquids, nasals, glides and vowels. They are distinguished by specification of the features [consonantal, syllabic, sonorant, nasal, continuant], as in table 1 below.

	obstruents	liquids	nasals	glides	vowels
consonantal	+	+	+	-	-
syllabic	-	-	-	-	+
sonorant	-	+	+	+	+
continuant		+	-	+	+

Table 1: Specification of major classes of segments

3.1.1.1 At this point it will be useful to make some observations concerning the features [nasal], [aspiration] and [tense].

3.1.2 [+nasal] Huli has prenasalized plosives that contrast with non-prenasalized plosives and with nasals. Examples are:

$\left[ \begin{array}{l} {}^m\text{bu:} \\ \text{bu:} \\ \text{mu:} \end{array} \right]$	peel liver sand	$\left[ \begin{array}{l} {}^h\text{t}^{\text{am}}\text{b}^{\text{on}}\text{e} \\ \text{t}^{\text{ab}}\text{e}^{\text{ne}} \\ \text{t}^{\text{am}}\text{e}^{\text{ne}} \end{array} \right]$	grown cold chosen relative
$\left[ \begin{array}{l} {}^n\text{de:} \\ \text{de:} \\ \text{ne:} \end{array} \right]$	then eye tooth	$\left[ \begin{array}{l} \text{a}^n\text{d}^{\text{ba}} \\ \text{ad}^{\text{og}}\text{e} \\ \text{an}^{\text{ona}} \end{array} \right]$	soot armpit species of tree
$\left[ \begin{array}{l} {}^{\eta}\text{gi:} \\ \text{gi:} \\ \text{ni:} \end{array} \right]$	give arm sun	$\left[ \begin{array}{l} \text{a}^{\eta}\text{gi} \\ \text{agi} \\ \text{ani} \end{array} \right]$	when what where

3.1.2.1 I shall follow the suggestion of McCawley (Chomsky &

Halle 1968: 317, footnote) and regard prenasalized plosives as obstruent nasals, distinguished from members of the class 'nasal' by the specification [-son]. Similarly, segments that undergo environment induced nasalization will be specified as [+nasal] without implying that they are also [+son]. The feature specifications of nasals and obstruent nasals are given in table 2.

	obstruent nasals	nasals
consonantal	+	+
syllabic	-	-
sonorant	-	+
nasal	+	+

Table 2: Specification of obstruent nasals and nasals

3.1.3 [aspiration] There is an opposition between aspirated and unaspirated segments that carry the specifications [+cons, -syll, -son, -nasal, -cont], as shown in the examples:

[p <sup>h</sup> i:] stake	[t <sup>h</sup> u:] boundary	[k <sup>h</sup> ɛ:] you are
[pi:] word	[tu:] sugar	[kɛ:] leg

3.1.3.1 Ladefoged (1982: 47-48, 130-134) describes aspiration as the voicing lag that follows the articulation of a segment, and notes that the degree or intensity of the aspiration is in correspondence with the delay of voice onset. Prior to this, Chomsky and Halle had suggested specifying the phonetic features [voicing, tenseness, glottal constriction, (heightened) subglottal pressure] to describe aspiration (cf Chomsky & Halle 1968: 326-329).

3.1.3.2 There are not enough data about aspiration in Huli to make it possible to describe its intensity or to specify the list of features given by Chomsky and Halle. Hence, the phonological term [aspiration] has been adopted as a cover feature, indicating delay of voicing onset in respect to the release of the articulation (cf Ladefoged 1982: 256, 258), prescinding from the question of more precise specification.

3.1.4 [tense] Maddieson & Ladefoged (1985) have raised serious questions about the place of [tense] among the inventory of phonetic features. They present data from Jingpho, Hani, Yi and Wa - four non-Chinese languages spoken in Southern China - that suggest that this feature needs to be understood as language specific. Although their data base is too restricted to allow them to make strong claims, they suggest that

...while the terms "lax" and "tense" may sometimes be a useful shorthand in a linguistic description, it is necessary to spell out exactly what is to be understood by them in each case. (1985: 59)

3.1.4.1 In the case of Huli, the feature [tense] is useful in the description of vowels. Those that are closer to the periphery of the vowel space are considered to be [+tense], while the less peripheral ones are specified as [-tense]. The full specification of Huli vowels is set out in tables 8 and 9.

3.1.4.2 The difference between [+tense] and [-tense] vowels is more than that of location within the articulatory vowel space. For instance, [+tense] vowels can occur in isolation as whole words, while [-tense] vowels cannot; only [-tense] vowels can occur in final position in vocalic glides. Examples illustrating these differences are:

[i:] 1S pronoun      [e:] garden      [u:] chant

[k<sup>h</sup>æ̃I] praise      [aU] here!      [æ̃εa] descendant

3.1.4.3 These matters concerning features will be taken up again as they occur. I will leave them for now, and pass on to the description of Huli non-syllabic segments, beginning with the class 'obstruents'.

## 3.2 OBSTRUENTS

3.2.1 Non-continuant obstruents and their feature specifications are set out in table 3. These segments will be discussed in turn.

	p	p <sup>h</sup>	p <sup>w</sup>	b	b <sup>w</sup>	m <sub>b</sub>	m <sub>b</sub> <sup>w</sup>	t	t <sup>h</sup>	t <sup>w</sup>	t <sup>h</sup> <sup>w</sup>	d	n <sub>d</sub>	n <sub>d</sub> <sup>w</sup>	k	k <sup>h</sup>	k <sup>w</sup>	k <sup>h</sup> <sup>w</sup>	g	ŋ <sub>g</sub>	g <sup>w</sup>	ŋ <sub>g</sub> <sup>w</sup>
high	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+
cor	-	-	-	-	-	-	-	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-
voice	-	-	-	+	+	+	+	-	-	-	-	+	+	+	-	-	-	-	+	+	+	+
nasal	-	-	-	-	-	+	+	-	-	-	-	-	+	+	-	-	-	-	-	+	-	+
round	-	-	+	-	+	-	+	-	-	+	+	-	-	+	-	-	+	+	-	-	+	+
aspir	-	+	-	-	-	-	-	-	+	-	+	-	-	-	-	+	-	+	-	-	-	-

Table 3: Non-continuant obstruents

3.2.1.1 [p] This is produced with a forward positioning of the lips. It occurs word-initially, where it is in opposition to [p<sup>h</sup>], and word-medially, where, with some speakers, it is in free-variation with [b]. Examples are:

[pa:] hit

[pəɔɔ] nest, hide

[pɪɪ<sup>y</sup>a] sit

[puni] liver

[ɲapia] slime cabbage

[kəpi] type of arrow

3.2.1.2 [p<sup>h</sup>] occurs in word-initial position. Speakers push their lips forward as they articulate this segment, frequently releasing the occlusion with friction, so that [p<sup>h</sup>] is in free variation word-initially with the segment [p̤]. Examples are:

[p<sup>h</sup>aβε] fence                      [p<sup>h</sup>ɔɔ] (I) go  
 [p<sup>h</sup>Iɿyɤ] ten                      [p<sup>h</sup>u:] go

3.2.1.3 [p<sup>w</sup>] Evidence for the existence of this segment is limited to the occurrence:

[p<sup>w</sup>aIa] hornbill

3.2.1.4 [b] is the voiced counterpart of [p], occurring in word-medial position. The degree of voicing can vary considerably, from full to partial, designated here by [b], to [p] (cf 3.2.1.1). This segment is always contiguous with vowels that are [+high], and is in free variation with [β] in the environment

$$\begin{array}{c} \text{V} \\ [+high] \\ [-back] \end{array} \quad \text{---} \quad \begin{array}{c} \text{V} \\ \left( \begin{array}{c} [+high] \\ [-back] \end{array} \right) \\ \text{V} \\ [-tense] \end{array}$$

Examples:

[aIuba] reed grass                      [ibagIjɤ] initiate  
 [ubIjɤ] species of bird                      [ħabia] slime cabbage

3.2.1.5 [b<sup>w</sup>] is the labialized counterpart of [b]. It occurs in word-medial position, limited to the environment

$$\begin{array}{c} \text{V} \\ [+round] \\ [-tense] \end{array} \quad \text{---} \quad \begin{array}{c} \text{V} \\ [+low] \end{array}$$

Examples:

[m <sup>w</sup> ab <sup>w</sup> ayɛ]	marriageable	[ħub <sup>w</sup> a]	wrapping
[k <sup>w</sup> ab <sup>w</sup> a]	feral	[ħ <sup>w</sup> ab <sup>w</sup> ayɛ]	cockatoo

3.2.1.6 [m<sup>b</sup>] is the prenasalized counterpart of [b], and occurs initially and medially in words. In initial position the degree of nasalization varies with different speakers, while medially the degree of voicing varies.

Examples:

[m <sup>b</sup> ɪf <sup>y</sup> a]	one	[m <sup>b</sup> ɔɪa]	species of frog
[ɛ <sup>m</sup> bɔnɛ]	skull	[t <sup>h</sup> ɔ <sup>m</sup> bɛ]	stomach

3.2.1.7 [m<sup>b</sup><sup>w</sup>] This segment is found mainly in the speech of dialect A1 (cf 2.6.1). It occurs in medial position, following a vowel that is [+round]. The examples below illustrate this segment from items collected in A1 dialect and contrasted with other dialects:

<u>A1</u>	<u>gloss</u>	<u>other dialects</u>
[p <sup>m</sup> b <sup>w</sup> a]	yellow	[a <sup>m</sup> buwa]
[t <sup>h</sup> p <sup>m</sup> b <sup>w</sup> aɪɛ]	string apron	[t <sup>h</sup> a <sup>m</sup> baɪɛ]
[ku <sup>m</sup> b <sup>w</sup> a]	shade	[ku <sup>m</sup> ba]

3.2.1.8 [t̪] This segment is dental rather than alveolar in articulation, the apex of the tongue being placed on the back of the upper teeth. It occurs in word-initial position, and, in some compound lexical items, it may be in free variation with its voiced counterpart, [d], word-medially. Examples:

[t̪a <sup>n</sup> gɛ]	cowrie shell	[t̪iba]	chop down
[t̪ɛ:]	eye	[t̪ama]	spirit
[t̪ɔt̪ɔ]	dirt	[t̪ <sup>h</sup> i <sup>h</sup> tu]	vine fibres

3.2.1.9 [t<sup>h</sup><sub>ɲ</sub>] is the aspirated counterpart of [t<sub>ɲ</sub>], occurring in initial and medial positions. In the

latter case it constitutes an internal word boundary: the juncture where two words compound

to make a third, new, word. In dialect A2 it is in free variation with [s] word-initially. Examples:

[t <sup>h</sup> <sub>ɲ</sub> ɔɣɔ]	bridge	[t <sup>h</sup> <sub>ɲ</sub> u:]	boundary
[t <sup>h</sup> <sub>ɲ</sub> aya]	shame	[t <sup>h</sup> <sub>ɲ</sub> i:]	2S pronoun
[t <sub>ɲ</sub> t <sup>h</sup> <sub>ɲ</sub> ani]	swordgrass	[ya <sup>h</sup> <sub>ɲ</sub> ayaja]	star

3.2.1.10 [t<sup>w</sup><sub>ɲ</sub>] This initial position segment is of infrequent occurrence, and is produced by rounding and narrowing the labial orifice in the articulation of [t<sub>ɲ</sub>]. Examples:

[t <sup>w</sup> <sub>ɲ</sub> ɛ:]	retch	[t <sup>w</sup> <sub>ɲ</sub> a:]	howl
[t <sup>w</sup> <sub>ɲ</sub> ĩ:]	twitter	[t <sup>w</sup> <sub>ɲ</sub> ãnia]	break into

3.2.1.11 [t<sup>hw</sup><sub>ɲ</sub>] is the labialized counterpart of [t<sup>h</sup><sub>ɲ</sub>], and like that segment is of infrequent occurrence. It is found only in word-initial position. Examples:

[t <sup>hw</sup> <sub>ɲ</sub> ɛ:]	splutter	[t <sup>hw</sup> <sub>ɲ</sub> aɪɪ <sup>m</sup> bu]	species of vine
[t <sup>hw</sup> <sub>ɲ</sub> ã:]	cheek	[t <sup>hw</sup> <sub>ɲ</sub> ĩ:]	species of bird

3.2.1.12 [d] occurs in word-medial position, being articulated by forming an occlusion with the apex and front of the tongue and the upper back area of the teeth. Examples:

[adɔɣɛ]	armpit	[p <sup>h</sup> ɔdagɪ]	pointed roof
[ɛdɛ]	there	[madanɛ]	miserly, mean

3.2.1.13 [n<sup>d</sup><sub>ɲ</sub>] is the prenasalized counterpart of [d<sub>ɲ</sub>], and occurs in word-initial and word-medial pos-



itions. In initial position, the degree of nasalization varies from speaker to speaker, while medially there is considerable range in the degree of voicing. Examples:

[ <sup>n</sup> duɪi]	wedge	[t̪ɪ <sup>n</sup> di]	ground, soil
[ <sup>n</sup> dɔba]	tree sap	[ka <sup>n</sup> dɔma]	sweet potato species

3.2.1.14 [<sup>n</sup>d<sup>w</sup>] The evidence for this segment is slight. It occurs initially and medially in words, as shown in the examples:

[ <sup>n</sup> d <sup>w</sup> ɛ:]	croak	[ɔ <sup>n</sup> d <sup>w</sup> ang]	owner
[ɲɔ <sup>n</sup> d <sup>w</sup> a]	species of banana plant		

3.2.1.15 [k] is produced by raising the tongue body to form an occlusion with the velum. It occurs initially and medially in words, being in free variation with its voiced counterpart in the latter position. Examples:

[kana]	ditch	[ka <sup>m</sup> bɛ]	cane grass
[ki:]	arm	[kɛ:]	leg
[Ikɪni]	son	[t̪ <sup>h</sup> iki]	crosswise

3.2.1.16 [k<sup>h</sup>] is the aspirated counterpart of [k]. It occurs word-initially and, indicating an internal word boundary, word-medially. Examples:

[k <sup>h</sup> ɔ:]	I am	[k <sup>h</sup> aju]	thievery
[k <sup>h</sup> uni]	bone	[k <sup>h</sup> ɛ:]	untruth
[yak <sup>h</sup> u <sup>n</sup> di]	star	[k <sup>h</sup> afajak <sup>h</sup> ɛ]	cockroach

3.2.1.17 [k<sup>w</sup>] occurs initially and medially in words, being the labialized counterpart of [k].

Examples:

[k <sup>w</sup> a:]	hollow	[t̪uk <sup>w</sup> a]	uproot
[k <sup>w</sup> ɛɪi]	glittering	[t̪ <sup>h</sup> uk <sup>w</sup> a]	pluck

3.2.1.18 [k<sup>h<sup>w</sup></sup>] is the labialized counterpart of [k<sup>h</sup>], and occurs in word-initial and word-medial positions. It occurs only infrequently, and when it appears in medial position it indicates an internal word boundary.

Examples:

[k <sup>h<sup>w</sup></sup> a:]	species of tree	[k <sup>h<sup>w</sup></sup> ʒ:]	snipe
[k <sup>h<sup>w</sup></sup> ik <sup>h<sup>w</sup></sup> i]	dispute	[ʰɔmak <sup>h<sup>w</sup></sup> i]	burial pall

3.2.1.19 [g] This is the voiced counterpart of [k]. It occurs in word medial position, contiguous with vowels that carry the feature specification [+high], and also in the environment

$$\begin{matrix} \text{V} \\ \begin{bmatrix} -\text{low} \\ -\text{back} \end{bmatrix} \end{matrix} \quad \text{---} \quad \begin{matrix} \text{V} \\ \begin{bmatrix} -\text{low} \\ -\text{back} \end{bmatrix} \end{matrix}$$

Examples:

[mɛgɛ]	mockery	[agil]	what?
[tɯgil]	species of sweet potato	[nigil]	nettle

3.2.1.20 [g<sup>w</sup>] is the labialized counterpart of [g]. It occurs word-medially, in the same environment as that given for [bw] in 3.2.1.4. Examples:

[k <sup>h</sup> ɲg <sup>w</sup> a]	wrong	[ <sup>m</sup> bɲg <sup>w</sup> a]	tree oil
[p <sup>h</sup> ug <sup>w</sup> a]	swamp	[ɲg <sup>w</sup> anɛ]	ancestor

3.2.1.21 [ɲg] This the prenasalized counterpart of [g], occurs initially and medially. Examples:

[ɲga:]	sweet smelling	[aɲgɛ]	bund
[ɲgu:]	foul smelling	[ʰuɲgi]	shrub

3.2.1.22 [ɲg<sup>w</sup>] is the labialized counterpart of [ɲg], occurring in initial and medial positions. In

the latter case it is always preceded by a vowel that carries the specification [+round]. Examples:

[ŋ<sup>w</sup>g<sup>w</sup>i:] nose                      [p<sup>h</sup>uŋ<sup>w</sup>ga] soot  
 [ŋ<sup>w</sup>g<sup>w</sup>ɛɪ] gathering              [t<sup>h</sup>ŋ<sup>w</sup>g<sup>w</sup>ia] paddle

3.2.2 **Continuant obstruents** and their feature specifications are set out in table 4. They will be described in turn.

	ɸ	β	j	ɲj	j <sup>w</sup>	x	ɣ	χ	χ <sup>w</sup>	ʁ	ŋ
high	-	-	+	+	+	+	+	-	-	-	-
back	-	-	-	-	-	+	+	+	+	+	+
low	-	-	-	-	-	-	-	-	-	-	+
anterior	+	+	-	-	-	-	-	-	-	-	-
voice	-	+	+	+	+	-	+	-	-	+	-
nasal	-	-	-	+	-	-	-	-	-	-	-
round	-	-	-	-	+	-	-	-	+	-	-

Table 4: Specification of continuant obstruents

3.2.2.1 [ɸ] This segment has been noted in 3.2.1.2 as occurring word-initially in free variation with [p<sup>h</sup>]. It is produced by speakers who push their lips forward and release the bilabial occlusion with friction. Examples:

[ɸu:] go                      [ɸa<sup>h</sup>ga] door  
 [ɸiɸ<sup>y</sup>a] ten                      [ɸɔ<sup>h</sup>gɔ] knot

3.2.2.2 [β] is the voiced counterpart of [ɸ], occurring in word-medial position. It is in free variation with [b] in the environment given in 3.2.1.4, and in complementary distribution with it in the environment

$$\begin{array}{ccc} & V & V \\ [-high] & \text{---} & [-high] \end{array}$$

Examples:

[iβi]	salt	[aβɛ]	yesterday
[aβa]	father	[ɔβmɛ]	stranger

3.2.2.3 [j] occurs in word-initial and word-medial positions. It is produced by raising the tongue body so that the blade forms a constriction with the palate, and then forcing air between the two while moving the tongue forward. With many speakers the tongue begins in a forward position, the blade being close to the alveolar ridge.

In word-initial position and in the environment

$$\begin{array}{ccc} & V & V \\ [-high] & \text{---} & [-high] \end{array}$$

friction can be slight to non-existent, and [j] is frequently in free variation with [y]. Word medially, [j] never follows a vowel that has the specification [+nasal], and is in complementary distribution with [y] in this environment (but see below, 3.2.2.4, for further discussion of this point).

Examples:

[Ijɛ]	1D pronoun	[jɔɔma]	(a) pouring
[jɛfi]	cassowary	[wajajɛ]	wax

3.2.2.4 [<sup>n</sup>j] This segment is found only in the lexical words [ãĩ<sup>n</sup>jɛ] and [I<sup>n</sup>jɛ], which can both be glossed as "mother". It is to be noted that in both cases the initial vowels are nasalized, so that it is possible to analyse the segment as an instance of environmentally induced nasalization. However, as noted above in 3.2.2.3, there are no other instances of [j] following a nasal segment, while the existence of [ɲ] is attested in dialects A1 and A2 (cf 3.4).

3.2.2.5 [j<sup>w</sup>] This is another segment that appears in one or two frequently occurring morphemes, but otherwise lacks a wide distribution in the language. It is found only word-medially, as in the examples

[baj <sup>w</sup> a]	good	[Iaj <sup>w</sup> a]	3-say-PAST
[p <sup>h</sup> Ij <sup>w</sup> a]	3-go-PAST	[pij <sup>w</sup> a]	3-do-PAST

3.2.2.6 [x] is produced by raising the tongue body to form a constriction with the velum. It occurs medially in words of more than two syllables in the environment

$$\begin{matrix} V \\ [-\text{high} \\ -\text{tense}] \end{matrix} \quad \text{---} \quad \begin{matrix} V \\ [-\text{high} \\ -\text{tense}] \end{matrix}$$

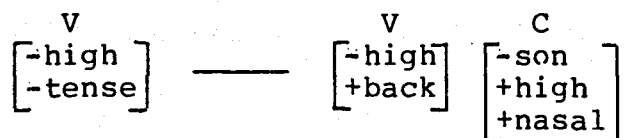
where it is in free variation with its voiced counterpart, [ɣ]. It also occurs in free variation with [χ], [χ] and [ʁ] in the bound morpheme /go/ (cf 5.5.2). Examples:

[t <sup>h</sup> axaɪi]	a river	[axɔɪia]	where?
[ɔxɔni]	that	[axaɪi]	man

3.2.2.7 [ɣ] occurs in word medial position in the same environments as and in free variation with [x], [χ] and [ʁ] - as above (3.2.2.6). Examples:

[aɣa]	cloak	[ɛɣa]	bird
[aɣɔ]	where?	[ɔɣɔ]	this

3.2.2.8 [χ] occurs word-medially. It is produced by raising the tongue body to form a constriction in the post-velar or uvular region. It is in free variation with its voiced counterpart [ʁ], and with [x] and [ɣ] in the bound morpheme /go/ (cf 5.5.2), its other occurrences being limited to the environment



Examples:

[kaχa <sup>ŋ</sup> gɛ]	new	[p <sup>h</sup> ɔɔχɔni]	(I) go
[k <sup>h</sup> ɛχɔni]	(you) are	[wanɛχa <sup>ŋ</sup> gɛ]	new

3.2.2.9 [χ<sup>w</sup>] The existence of this segment has so far been verified only in the term [χ<sup>w</sup>ɛni], which is a lexical item meaning "sweet smelling" in the *tajanda* register of communities living on the south-western ridges above the middle Tagali valley.

3.2.2.10 [ɓ] is the voiced counterpart of [χ], and is heard only in the bound morpheme /go/, where it is in free variation with the segments listed above in 3.2.2.6. The friction produced is slight. Examples:

[k <sup>h</sup> ɛɓ]	(you) are	[p <sup>h</sup> ɔɔɓ]	(I) go
[ɔɓ]	this	[k <sup>h</sup> ɔɓ]	I am

There is some evidence for the existence of labialized [ɓ<sup>w</sup>] in the utterance [tɛɓ<sup>w</sup>a] and its variant [tɛɓ<sup>w</sup>a], both of which can be glossed as 'many'. However, many speakers produce this word without constriction, the glide alone being articulated.

3.2.2.11 [h] is a pharyngeal fricative, occurring word-initially and word-medially. It is subject to environment induced nasalization when contiguous with a nasal vowel. Examples:

[ħaβanɛ]	fat	[ħɔ <sup>ŋ</sup> gɔ]	strength
[ħina]	sweet potato	[ħubi]	shrub
[ħa:]	go	[ħɔ̃nɛ]	spirit stone

[aʊ̃ɛ] dim sighted

[wãɛ] old person

### 3.3 LIQUIDS

The series of Huli liquids and their distinguishing feature specifications is given below in Table 5. Note that all segments share the feature [+voice].

	ɺ	ɺ <sup>w</sup>	ɭ	ɭ <sup>w</sup>
anterior	-	-	+	+
lateral	+	+	-	-
round	-	+	-	+

Table 5: Specification of liquids

3.3.1 [ɺ] is produced by lowering the tongue body and curling the apex back behind the alveolar ridge. The airstream passes over the sides of the tongue as it is flapped onto the ridge.

This segment occurs initially and medially, and is subject to environment induced nasalization when contiguous with nasal vowels. Examples:

[ɺɔ̃nɛ] again

[ɽuɺi] Huli

[ɺɛbaɣɛ] snake

[kɔɺɔba] red clay

[t̪<sup>h</sup>ɺɪ̃ɛ] stone

[māɺɪ̃] let's go

3.3.2 [ɺ<sup>w</sup>] occurs initially and medially in words, and is the labialized counterpart of [ɺ]. It does not enjoy a wide distribution. Examples:

[ɺ<sup>w</sup>abi] species of frog

[oɺ<sup>w</sup>a] Honey Eater

[paɺ<sup>w</sup>a] dull sound

3.3.3 [ɽ] occurs in word-medial position. It is produced by lowering the tongue body and flapping the apex of the tongue up to the alveolar ridge and back again.

Examples:

[ɽuɽu] rodent                      [ɽaɽiga] track  
[paɽɽ] (I) hit                      [kaɽɽɽɽ] squabble

3.3.4 [ɽ<sup>w</sup>] is the labialized counterpart of [ɽ], occurring in word-medial position. It is common in the bound morpheme [ɽ<sup>w</sup>a] (cf 5.2.6) Examples:

[ɽuɽ<sup>w</sup>a] skirt                      [ɽɔɽ<sup>w</sup>a] rafter  
[kanɔɽ<sup>w</sup>a] drain                      [ɽaɽ<sup>w</sup>a] say-3-PRES  
[ibaɽ<sup>w</sup>a] come-3-PRES

### 3.4 NASALS

Huli nasals are specified as a class by the features [+cons, -syll, +son, +nasal]. The series is given below in table 6, showing the feature specifications that distinguish the segments.

	m	n	ɲ	ŋ
anterior	+	+	-	-
coronal	-	+	-	-
back	-	-	-	+

Table 6: Specification of nasals

3.4.1 [m] occurs initially and medially in words. The bilabial occlusion is formed with the lips forward from the teeth. The velum is raised slightly after the relea-



se of the occlusion, so that segments following [m] are usually conditionally nasalized. The co-occurrence of this segment with [b] is described in 3.2.1.6 and 3.2.1.7. Examples:

[mɔŋɛ]	wasp	[ma <sup>h</sup> ga]	laziness
[ɛmɛnɛ]	little	[t <sup>h</sup> ɔmɔ]	food

3.4.2 [n] is articulated by raising the tongue and forming an occlusion in the dental-alveolar region. This segment occurs initially and medially, its co-occurrence with [d] having been noted in 3.2.1.13 and 3.2.1.14. Examples:

[nanɔ]	fungus	[p <sup>h</sup> ini]	root
[nɛ:]	tooth	[puni]	liver

3.4.3 [ɲ] occurs in word-medial position. It has been noted as forming a complex phone with [j] (cf 3.2.4). It is present in dialects A1 and A2 as a simple phone in lexis which, in other dialects, manifest the complex phone [ɲj]. Segments following [ɲ] are always conditionally nasalized. Examples:

[ɛmɛɲɛ]	little	[ɲapɔ]	woodcock
[ɬamipɲ]	let's talk	[puɬumaɲpɲ]	let's do (it)

3.4.4 [ŋ] occurs only preceding segments that are specified as [+cons, -syll, -son, -cont, +high, +voice]. Examples have been given in 3.2.1.21 and 3.2.1.22.

### 3.5 GLIDES

There are two segments within the class glides, specified as [-cons, -syll, +son, -nasal, +cont]. These are [y] and [w], distinguished by the former's being [-back, -round] and the latter's being [+back, +round]. Both segments are [+high],

the tongue body being raised, and [+voice].

3.5.1 [y] is a palatal glide, occurring in word-initial and word-medial positions. Initially, it is in free variation with [j], while medially these two segments are in free variation in the environment

$$\begin{array}{c} \text{V} \\ \left[ \begin{array}{l} \text{-high} \\ \text{-low} \\ \text{-nasal} \end{array} \right] \end{array} \quad \text{---} \quad \begin{array}{c} \text{V} \\ \left[ \begin{array}{l} \text{-high} \\ \text{-nasal} \end{array} \right] \end{array}$$

With the exception noted in 3.2.2.4, [j] never follows a segment that has the specification [+nasal], and [y] is in complementary with it in this environment, being itself conditionally nasalized. Examples:

[yaɿi]	cassowary	[ɲeya]	stand up
[yɔɿɛ]	crooked	[p <sup>h</sup> ɔya]	stopper
[māyābu]	raincape	[ɬak <sup>h</sup> īyā]	nightjar

3.5.2 [w] occurs initially and medially, the lips being well rounded. Its co-occurrence with segments that are [+cons, -son, -cont], and with segments that are [+cons +son, +cont] has been described in 3.2 and 3.3. Examples:

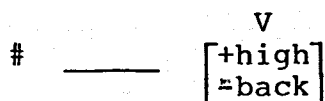
[wɛna]	fish	[waɿi]	woman
[kāwā]	mouth bow	[aUwi]	spirit stone

### 3.6 OTHER SEGMENTS

The segments described above are widespread and are to be found in nearly all dialects. An example of a segment that is prevalent in one dialect but rare in others is the continuant [s], which in dialect A2, particularly in the Bari Valley, is the usual substitute for [t<sup>h</sup>] in the environment

	p	p <sup>h</sup>	b	b <sup>w</sup>	m <sub>b</sub>	m <sub>b</sub> <sup>w</sup>	t	t <sup>h</sup>	t <sup>w</sup>	t <sup>hw</sup>	d	n <sub>d</sub>	n <sub>d</sub> <sup>w</sup>	k	k <sup>h</sup>	k <sup>w</sup>	k <sup>hw</sup>	g	g <sup>w</sup>	ŋ <sub>g</sub>	ŋ <sub>g</sub> <sup>w</sup>	ʈ	β	j	j <sup>w</sup>	x	ɣ	χ	χ <sup>w</sup>	ʙ	ɸ	ɹ	ɹ <sup>w</sup>	ɻ	ɻ <sup>w</sup>	m	n	ɲ	y	w					
consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	
syllabic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
sonorant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	
high	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-	-	+	+	+	+	-	-	-	-	-	+	+	-	-	-	-	-	-	+	+	+	+	
back	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-	-	-	-	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	+	
low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
anterior	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	-	-	
coronal	-	-	-	-	-	-	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	-	-
voice	-	-	+	+	+	+	-	-	-	-	+	+	+	-	-	-	-	+	+	+	+	-	+	+	+	-	+	-	+	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+
continuant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
nasal	-	-	-	-	+	+	-	-	-	-	-	+	+	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	
round	-	-	-	+	-	+	-	-	+	+	-	-	+	-	-	+	+	-	+	-	+	-	-	-	+	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	+
lateral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	
aspiration	-	+	-	-	-	-	-	+	-	+	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-

Table 7: Distinctive features matrix of non-syllabic segments



as in

[sia] possum                      [sI<sup>m</sup>buni] big

A variant of this is used by speakers in the Burani area, many of whom produce, in the same environment  $\neq$  and in place of [t]  $\neq$  the segment [t<sup>s</sup>], which has the distinguishing features [+strident, +delayed release], as in

[t<sup>s</sup>sia] possum                      [t<sup>s</sup>I<sup>m</sup>buni] big

### 3.7 SUMMARY OF NON $\neq$ SYLLABICS

Before describing segments that are [ $\neq$ cons, +syll], it is useful to summarise [ $\neq$ syll] segments and their feature specifications in tabular form. This is done in table 7, given on the previous page. It will be noted that infrequently occurring dialectal phones, such as [t<sup>s</sup>], are not included in this table, which is concerned with phones that are candidates for phoneme status.

### 3.8 VOWELS

Huli phonological segments specified as [ $\neq$ cons, +syll, +son, +cont] can be subdivided by specification of the feature [nasal]. Table 8 shows the feature specifications of oral vowels, which will be described in detail before passing on to a description of nasal vowels. Vowels in monosyllabics are always lengthened.

#### 3.8.1 Oral vowels

3.8.1.1 [i] Most non $\neq$ nasal syllabic segments occur initially, medially and finally in words. [i] is no

	i	I	e	ɛ	æ	a	ɒ	ʌ	ɔ	ʊ	u
high	+	+	-	-	-	-	-	-	-	+	+
low	-	-	-	-	+	+	+	-	-	-	-
back	-	-	-	-	-	+	+	+	+	+	+
tense	+	-	+	-	+	-	+	-	+	-	+
round	-	-	-	-	-	-	+	-	+	+	+

Table 8: Specification of non-nasal syllabic segments

exception, although there are certain environments in which it cannot occur. These are set out below.

$$1. \quad \# \# \quad \text{---} \quad \left\{ \begin{array}{l} [+cons] \\ [+back] \\ [+cont] \end{array} \right\} \quad \left\{ \begin{array}{l} [+cons] \\ [+round] \end{array} \right\}$$

$$2. \quad \left\{ \begin{array}{l} [+cons] \\ [+back] \\ [+cont] \end{array} \right\} \quad \left\{ \begin{array}{l} [+cons] \\ [+back] \\ [+round] \end{array} \right\} \quad \text{---}$$

$$3. \quad \text{---} \quad \begin{bmatrix} +cons \\ -back \\ +round \end{bmatrix}$$

$$4. \quad \begin{bmatrix} +cons \\ +back \\ +cont \end{bmatrix} \quad \text{---} \quad \# \#$$

In word-medial position, this segment can occur preceding the [+syll] segments [a] or [ʌ]. It is in free variation with [I] in the environment,

$$\text{---} \quad \begin{bmatrix} +cons \\ +son \end{bmatrix} \quad \begin{bmatrix} +syll \\ +high \end{bmatrix}$$

Examples:

[ibu]	come	[ija]	1D1 Prn
[mina]	catch	[t <sup>h</sup> <sub>ɪ</sub> iga]	straight

[piabɛ]	work		[mia]	take/give
[ifi]	hair	or	[Ifi]	hair
[mini]	name	or	[mIni]	name

3.8.1.2 [I] occurs word-initially and word-medially in free variation with [i] in the environments indicated in 3.8.1.1. It occurs in the environment,

$$\begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{high} \\ -\text{back} \end{bmatrix} \text{ — } \begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{high} \\ -\text{back} \end{bmatrix}$$

and in the vocalic glide [ɤI]. Examples:

[tɪnIni]	spirit	[IɪIɪi]	custom
[ɪajIjɤ]	(he) said	[bɤI]	oak tree

3.8.1.3 [e] can occur as an utterance on its own, and also in the environments,

$$\text{ — } \left\{ \begin{array}{l} \begin{bmatrix} +\text{syll} \\ +\text{low} \\ -\text{tense} \end{bmatrix} \\ \begin{bmatrix} -\text{cons} \\ -\text{syll} \\ -\text{back} \end{bmatrix} \end{array} \right\}$$

In other positions, initial, medial and final, it is in free variation with [ɛ], which is the more usual form in normal speech. It is excluded from the environments,

1.  $\begin{bmatrix} +\text{cons} \\ -\text{son} \\ -\text{low} \\ -\text{ant} \\ +\text{cont} \end{bmatrix} \text{ — }$
2.  $\text{ — } \begin{bmatrix} +\text{cons} \\ +\text{round} \end{bmatrix}$
3.  $\begin{bmatrix} +\text{cons} \\ +\text{round} \end{bmatrix} \text{ — }$

Examples:

[egɛJe]	place name	[eanɔɣɔda]	suicide
[me:]	nothing	[Jeə]	(he) said
[heya]	stand up	[e:]	garden

3.8.1.4 [ɛ] occurs initially, medially and finally in words.

It is in free variation with [e], with the exceptions already noted in 3.8.1.3. It is excluded from the same environments as [e], with the exception that it can occur contiguous with segments that carry the specifications [+cons, +high, +back, +round]. It occurs in the vocalic glide [ɛə], where it is reduced to schwa in normal speech. It is in free variation with [ɛ] in the environment,

$$\begin{bmatrix} +\text{cons} \\ +\text{high} \\ -\text{back} \\ +\text{cor} \\ +\text{cont} \end{bmatrix} \text{ — } \# \#$$

Examples:

[t <sub>g</sub> ɛgɛ]	only	[ŋ <sup>w</sup> gɛ:]	worm
[wɛna]	fish	[bɛ:]	bamboo
[wɛə]	echo	[kɛə]	clear sky
[p <sup>h</sup> ijɛ]	(he) went	or	[p <sup>h</sup> ijɛ] (he) went

3.8.1.5 [ɛ] occurs in all positions. It is in free variation with [a] in stressed syllables in the environment,

$$\begin{bmatrix} -\text{syll} \\ +\text{STRESS} \end{bmatrix} \text{ — } \begin{bmatrix} -\text{syll} \\ +\text{syll} \\ +\text{high} \\ -\text{back} \end{bmatrix}$$

and also in the environments,

$$\begin{bmatrix} -\text{syll} \\ +\text{high} \\ \&\text{back} \\ \&\text{nasal} \end{bmatrix} \text{ — }$$

Its occurrence in free variation with [ɔ], and its occurrence in the vocalic glide [ɛə], have been noted in 3.8.1.4.

Examples:

[t <sup>h</sup> ægɪɫʲæ]	outside	[muɪæ]	will take/give
[æɪ]	who?	[ɪajæ]	(he) said

3.8.1.6 [a] is a low central vowel, occurring in all positions. It occurs in the vocalic glide [æɪ], as has already been noted in 3.8.1.4. With many speakers it is also in free variation with [ʌ] in the environment,

[+syll] [+tense]  $\left[ \begin{array}{l} +\text{cons} \\ +\text{high} \\ +\text{back} \\ =\text{cont} \end{array} \right]$  — ##

and can be found in free variation with [ɒ] in the environment

—  $\left[ \begin{array}{l} +\text{cons} \\ +\text{round} \end{array} \right]$

although its occurrence in this position is not well attested. Its occurrence in free variation with [æ] has been described in 3.8.1.5 above. Examples:

[nɔɣɔba]	fighting stick	[ɰama]	clearing
[aɪɪæ]	everlasting daisy	[tɰaɣaɛɛ]	cold
[a <sup>n</sup> danɛ]	covering	[ka <sup>n</sup> dɛbɔ]	vision
[tɰuk <sup>w</sup> a]	pull up	[tɰuk <sup>w</sup> æ]	pull up
[a <sup>n</sup> d <sup>w</sup> anɛ]		[p <sup>h</sup> ani]	
[ɔ <sup>n</sup> d <sup>w</sup> ne]	} owner	[p <sup>h</sup> ʌni]	} retribution

3.8.1.7 [ɒ] occurs in free variation with [a], in the environments noted above in 3.8.1.6. Many speakers of dialect A produce only [ɒ] in these environments.

Examples:

[ɪŋg<sup>w</sup>ʌ] I shall say      [ɔg<sup>w</sup>a] good!

[pɔɪn<sup>n</sup>g<sup>w</sup>a] pass/cross      [ɔb<sup>w</sup>aɰaya] cockatoo

3.8.1.8 [ʌ] occurs in free variation with [a], as indicated in 3.8.1.6. Some speakers of dialect A2



seem particularly to favour this phone over [a]. Examples:

[t <sup>h</sup> uk <sup>w</sup> ʌ]	pull up	[ɸi <sup>w</sup> ʌ]	sago
[ku <sup>m</sup> bʌ]	shade	[inʌ]	lPl Prn

3.8.1.9 [ɔ] occurs in all positions and also as a complete utterance on its own. Examples:

[ɔ:]	(a) call/shout	[k <sup>h</sup> angɔ]	club/stick
[ɔnɛ]	wife	[ɸabɔnɔ]	digging stick

3.8.1.10 [U] occurs medially and finally in words, in sequence with syllables whose vowels are [-tense], and also in the vocalic glide [aU]. Examples:

[ajU]	now, today	[aUɪɛ]	withered
[t <sup>h</sup> i <sup>m</sup> bUni]	large	[kaUni]	new

3.8.1.11 [u] occurs in all positions, and can occur on its own as a complete word. It is excluded from the environment,

+cons +back +cont -lateral	—
-------------------------------------	---

Examples:

[u:]	shout	[uɪuɪuba]	shrub species
[ <sup>m</sup> bu:]	peelings	[k <sup>h</sup> ujama]	dour, forbidding

3.8.2 **Nasal vowels** exist in opposition to oral vowels. The latter, when contiguous with segments specified [+nasal], are conditionally nasalized, the degree of nasalization varying from speaker to speaker. Segments such as these, evidencing environment induced nasalization due to either progressive or regressive assimilation of this feature from a contiguous segment, will be classified in this study as 'nasalized', but but not as 'nasals' (cf 3.1.1; 3.4; 3.10.2).

In opposition to oral vowels that are potentially 'nasalized' there is a series of 'nasal' vowels that can occur in the environments,

$$\left\{ \begin{array}{l} [+cons \\ +son] \\ [+cons \\ -voice] \\ [+cons \\ +nasal] \end{array} \right\} \text{ --- }$$

Examples of minimal pairs involving opposition between oral and nasal vowels are:

[nɔ]	banana	[nã]	spreading
[tɔ: ɪa:]	whistle	[tɔ̃: ɪa:]	swim
[k <sup>h</sup> ɔ:]	2S-be	[k <sup>h</sup> ɔ̃:]	untruth
[ɦa:]	have	[ɦã:]	go
[puɪɛ]	will do	[pũɪɛ]	broken

The table below gives the series of nasal vowels and their feature specifications. In this series, [ɔback] is [ɔround].

	ĩ	ĩ̃	ẽ	ẽ̃	ã	õ	ũ	ũ̃
high	+	+	-	-	-	-	+	+
low	-	-	-	+	+	-	-	-
back	-	-	-	-	+	+	+	+
tense	+	-	-	+	-	+	-	+

Table 9: Specification of nasal vowels

These segments will now be described in turn.

3.8.2.1 [ĩ] occurs in any position, and also on its own as a complete word. In this latter case [ĩ] is

often in free variation with [i] in normal (fast) speech.

Examples:

[p <sup>h</sup> i: p <sup>h</sup> ɔ:]	slander	[kuɫiɣ <sup>ɣ</sup> ɛ]	swing
[t̪i: t̪ɔ:]	sparks	[t̪ <sup>w</sup> i:]	twitter
[i:]	1S/2S	[ina]	1S/2S-ERG

3.8.2.2 [ĩ] This segment occurs in the vocalic glide [ɛĩ], and appears medially and finally in

words. Examples:

[k <sup>h</sup> ĩ]	praise	[kĩ]	tiredness
[bĩ]	cast aside	[ɔɔbĩya <sup>n</sup> ga]	species of bird
[ĩ <sup>n</sup> j]	mother		

3.8.2.3 [ē] occurs in all positions. It can also occur in the vocalic glide [ɛē], and as a word

on its own. Examples:

[t̪ēɪē]	flying squirrel	[ē:]	yes
[t̪āwēɪē]	species of bird	[hēwa]	species of tree

3.8.2.4 [ɛ̃] occurs in the vocalic glide [ɛ̃], exemplified in 3.8.2.2, and is also present in the vocalic glide [ɛ̃ēā].

3.8.2.5 [ā] occurs initially, medially and finally in words. It also occurs in the vocalic glide [āũ], while its presence in [ɛ̃ēā] has already been noted (3.8.2.3; 3.8.2.4). Examples:

[āyo]	species of frog	[hāɪɔ]	breathless
[kāwā]	mouth bow	[ <sup>m</sup> bāɪɔ]	let's go

3.8.2.6 [ɔ̃] occurs in medial and final positions in words. Examples:

[k <sup>h</sup> ɔ̃nɔ̃]	bladder	[p <sup>h</sup> ɔ̃:]	pungent odor
[aɤaɣɔ̃ya]	species of bird	[t̥ɔ̃:]	gesture

3.8.2.7 [ũ] occurs in the vocalic glide [ãũ] in medial and final positions. Examples:

[ɬiãũine]	withered	[p <sup>h</sup> iãũ]	shaking
[t̥ <sup>h</sup> ãũ]	dust	[hãũ]	collapsed

3.8.2.8 [ū] This segment can occur as a word on its own, or in any position in a word. Examples:

[ū:]	folksong	[t̥ <sup>h</sup> ū:]	clear
[ūmū]	drowsiness	[pū:]	break

3.8.3 Vocalic glides, diphthongal and triphthongal, of [+syll] segments have already been met in the preceding sections. They will be discussed further here, and oral diphthongs and triphthongs, along with their nasal counterparts, will be described and exemplified in a way that allows them to be seen in contrast.

3.8.3.1 [ɤ̃ɪ] This glide can occur by itself as a complete word. It occurs commonly in medial and final positions in nominal derivations, but its occurrence in initial position is exemplified in only lexical item from the Al dialect.

3.8.3.2 [ɤ̃ɪ̃] can occur on its own as a word. Like [ɤ̃ɪ], its oral counterpart, it occurs word-initially in only one instance, and is otherwise found in nominal items.

3.8.3.3 [aũ] can occur as a complete word or utterance, or in word-final position.

3.8.3.4 [ãʊ] occurs in final position, following a segment that has the feature [-voice].

3.8.3.5 [ʒɛa] can occur as word by itself, and also in medial and final positions in words.

3.8.3.6 [ʒɛã] occurs as a word on its own, or in word-final position following a segment that is [-voice].

It does not enjoy a wide distribution.

3.8.3.7 Examples of vocalic glides:

[ʒɪ]		[ʒĩ]	
[ʒɪ]	who?	[ʒĩ]	there
[pʒɪ]	quite beaten	[pʒĩ]	thrown down
[ʒɪdɛgɛ]	palm tree	[ʒĩ <sup>n</sup> jɛ]	mother

[aʊ]		[ãʊ]	
[aʊ]	here!	[kãʊ]	cold mist
[ʎãʊ]	limp	[ʎãʊ]	collapsed
[t <sup>h</sup> aʊ]	scrotum	[t <sup>h</sup> ãʊ]	dust

[ʒɛa]		[ʒɛã]	
[ʒɛa]	descendant	[ʒɛã]	blessing
[kʒɛa]	sunshine	[k <sup>h</sup> ʒɛã]	blessing

### 3.9 SUMMARY OF SYLLABICS

Table 10, overleaf, summarises the distinctive features of syllabic segments.

### 3.10 OTHER ARTICULATORY FEATURES

Ladefoged defines secondary articulation as

	i	I	e	ɛ	œ	a	ɒ	ʌ	ɔ	ʊ	u	ĩ	ĩ	ẽ	œ	ã	ɔ̃	ũ	ũ
high	+	+	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	+	+
low	-	-	-	-	+	+	+	-	-	-	-	-	-	-	+	+	-	-	-
back	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	+	+	+	+
tense	+	-	+	-	+	-	+	-	+	-	+	+	-	-	+	-	+	-	+
nasal	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+
round	-	-	-	-	-	-	+	-	+	+	+	-	-	-	-	-	+	+	+

Table 10: Distinctive features matrix of syllabic segments

an articulation with a lesser degree of closure occurring at the same time as another (primary) articulation. (Ladefoged 1981: 210)

and in his discussion of palatalization, velarization, pharyngealization and labialization likens them to 'added vowel-like articulations'. However, he notes that these terms are also used to describe the processes by which primary articulations are modified and changed, usually because of the influence of contiguous segments.

Although he does not include nasalization in his discussion it seems to me that, for the purposes of this present study - given the analysis of Chomsky & Halle (1968) and the observations of McCawley (cf 3.1.1) - this feature could usefully be discussed at the same time as those more usually considered to be secondary articulations.

### 3.10.1 Nasalization

3.10.1.1 The series of obstruent nasals has been noted in section 3.1.2, and individual segments have been described in context in 3.2.1. The oppositions between nasal and non-nasal obstruents is exemplified in the following:

[pɪɫʲa]	sit	[ᵐbɪɫʲa]	one
[paba]	along with	[paᵐba]	before
[t̪ɛ:]	eye	[ᵐd̪ɛ:]	then!
[t̪ada]	recede	[t̪aᵐda]	bow
[kɛ:]	leg	[ᵐgɛ:]	2S-possess
[kugu]	type of nut	[kuᵐgu]	fight

(Obstruent nasals that are [+round] are discussed in 3.10.3.)

It will be seen that the opposition in initial position involves both [voice] and [nasal], while in medial position it involves only the feature [nasal].

Segments that are [+son, +cont], such as oral vowels, vocalic glides, [ɪ] and [y], tend to be susceptible to nasalization when contiguous with a segment that is [+nasal]. The pharyngeal obstruent [ħ], which is [-son, +cont], behaves in a similar manner.

3.10.1.2 [ɪ] There is some evidence that this segment assimilates the feature [+nasal] progressively, and that this usually causes progressive assimilation of this feature in the next segment, which is always [+syll]. Examples:

[t<sup>h</sup>ɪ̃ɪ̃ɛ] stone                      [pimāɪ̃ɪ̃] let's do it (1P)  
[m<sup>b</sup>bāɪ̃ɪ̃] let's go (1D)              [ħāɪ̃ɪ̃] tiredness

The progressive nature of this assimilation seems to be supported by items such as

[k<sup>h</sup>uɪ̃ɪ̃ɪ̃] pat

while it is interesting to note that verbal groups such as

[tɪ̃ɪ̃: ɪa:] swim                      [pū: ɪa:] break

illustrate that [ɪ] does not assimilate the feature [nasal] across word boundaries.

3.10.1.3 [ħ] usually occurs word-initially, and assimilates the feature [nasal] regressively, as in

[ħā:] go                      [ħāɪ̃ɪ̃] tiredness

but there is evidence of progressive assimilation, also, across word boundaries in derivational nominals such as

[ħɪ̃ɪ̃hɛ] spread out/ diffuse

3.10.1.4 [y] normally exhibits progressive assimilation, as in

[māyabu] raincape                      [āyɪ̃] species of frog

With some speakers, especially those of dialect A, the follow-



ing segment then progressively assimilates nasalization, thus:

[mãỹābu] raincape      [ãỹõ] species of frog

Other speakers of dialect A tend to substitute [ɲ] for [ỹ] in these environments, thus:

[mãñābu] raincape      [ãñõ] species of frog

### 3.10.2 Palatalization

3.10.2.1 In general terms this involves the movement of the tongue body towards the palatal region, resulting in what Chomsky & Halle (1968: 305-306) call a subsidiary articulation that superimposes an [i]-like quality on the basic consonantal articulation, and what Ladefoged (1982: 210) calls the addition of a high front tongue position to another articulation.

3.10.2.2 Segments that are [+cor] are susceptible to such palatalization in the environment,

$$\begin{bmatrix} +\text{syll} \\ +\text{high} \\ -\text{back} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{syll} \\ +\text{low} \\ +\text{back} \end{bmatrix} \quad \#\#$$

The assimilation is progressive, as in the examples:

[ɪɔɪɛbiɾ<sup>y</sup>a] (he) will say      [ibiɾ<sup>y</sup>a] (he) comes  
[p<sup>h</sup>agid<sup>y</sup>a] arm band      [p<sup>h</sup>iɪ<sup>y</sup>a] fall

3.10.2.3 The syllabic segments in the palatalization environment given above can occur in the same sequence without an intervening consonant, and speakers tend in normal speech to diphthongize them, thus:

[kia<sup>m</sup>bɛ] hard      [pia<sup>ŋ</sup>gɔ] dog  
[t̪agial] plank      [piabɛ] work

In deliberate, citation, speech, each syllable is pronounced distinctly

[ki]+[a]+[<sup>m</sup>bɛ]      [pi]+[a]+[<sup>ŋ</sup>gɔ]

[t̪a]+[gi]+[a]

[pi]+[a]+[be]

which discourages analysing such items as incorporating palatalized consonantals, as in the transcriptions:

\*[k<sup>y</sup>a<sup>m</sup>bɛ]

\*[p<sup>y</sup>a<sup>ŋ</sup>gɔ]

\*[t̪ag<sup>y</sup>a]

\*[p<sup>y</sup>abɛ]

3.10.2.4 It seems plausible to suggest that consonantals become palatalized progressively, not regressively, and that apparent regressive palatalization is due to the tendency of contiguous [i] and [a] towards diphthongization. When a consonantal segment that is [+cor] comes between these segments, the tendency towards a glide results in the consonantal being palatalized.

3.10.2.5 A useful general phonological rule can be formulated:

$$\begin{bmatrix} +\text{cons} \\ +\text{cor} \\ -\text{nasal} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{high} \\ <-\text{back}> \end{bmatrix} / \begin{bmatrix} +\text{syll} \\ +\text{high} \\ -\text{back} \end{bmatrix} \text{ --- } \begin{bmatrix} +\text{syll} \\ +\text{low} \end{bmatrix} \# \#$$

### 3.10.3 Labialization

3.10.3.1 This is the addition of noticeable lip-rounding to the primary articulation of a syllabic segment. The subsidiary rounding in Huli is moderate rather than extreme or complete (cf Chomsky & Halle 1968:309), and is indicated in phonetic transcription by the superscript [<sup>w</sup>]. The extent of labialization can be seen in the table below.

(p <sup>w</sup> )	t̪ <sup>w</sup>	t̪ <sup>hw</sup>	k <sup>w</sup>	k <sup>hw</sup>						
b <sup>w</sup>	m <sup>w</sup>	(d <sup>w</sup> )	n <sup>w</sup>	g <sup>w</sup>	ŋ <sup>w</sup>	ɹ <sup>w</sup>	ɹ <sup>w</sup>	j <sup>w</sup>	(χ <sup>w</sup> )	(m <sup>w</sup> )

Table 11: Labialized segments

The segments shown in brackets are very infrequent, the evidence for their existence being illustrated by the following:

[p <sup>w</sup> aɪa]	hornbill	[ɔm <sup>w</sup> a]	species of grub
[p <sup>h</sup> ad <sup>w</sup> a]	place name	[t̥ɛ <sup>w</sup> ʌ]	many

### 3.10.3.2 Segments that are specified

$$\begin{bmatrix} +\text{cons} \\ \alpha \text{ son} \\ +\text{voice} \\ -\alpha \text{cont} \end{bmatrix}$$

are susceptible to progressive assimilation of the feature [round] in the environment,

$$\begin{bmatrix} +\text{syll} \\ +\text{round} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{syll} \\ +\text{back} \end{bmatrix} \#\#$$

Examples:

[ɲɔb <sup>w</sup> abi]	greedy	[p <sup>h</sup> aʊɪ <sup>w</sup> ɛ]	folding
[p <sup>h</sup> ug <sup>w</sup> ʌ]	swamp	[ɲuɿ <sup>w</sup> a]	skirt

### 3.10.3.3 The segment specified as

$$\begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{high} \\ -\text{voice} \\ -\text{cont} \end{bmatrix}$$

is susceptible to the same process of labialization in the environment,

$$\begin{bmatrix} +\text{syll} \\ +\text{high} \\ +\text{round} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{syll} \\ -\text{high} \\ +\text{back} \end{bmatrix}$$

Examples:

[t̥uk <sup>w</sup> ʌ]	lift up	[t̥ <sup>h</sup> uk <sup>w</sup> ʌ]	pluck
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### 3.10.3.4 Segments that are specified

$$\begin{bmatrix} +\text{cons} \\ \alpha \text{ son} \\ \beta \text{ voice} \\ \alpha \text{ cont} \\ \beta \text{ nasal} \end{bmatrix}$$

are subject to labialization in the environment,

## \_\_\_\_\_ [+syll]

Examples:

[t <sup>w</sup> <sub>h</sub> ε:]   retch	[k <sup>h</sup> <sub>h</sub> a:]   species of nut
[k <sup>w</sup> anε]   hollow	[ŋ <sup>w</sup> <sub>g</sub> a:]   farewell

3.10.3.5 The general rule for assimilation/feature spreading in Huli is that its motivation is progressive. This makes it possible to suggest that in the last example of 3.10.3.4 a segment with the feature [+round] has been lost. This is supported by data from dialect A, in which a [+back, +round] segment precedes the initial obstruent nasal, thus:

[uŋ<sup>w</sup><sub>g</sub> a] farewell

### 3.11 PHONEMIC INTERPRETATION

3.11.1 Environment induced non-primary articulations are non-phonemic, but other non-primary articulations figure in contrasting minimal and near-minimal pairs and groupings such as:

[p <sup>h</sup> a:]	thigh	[ŋ <sup>w</sup> <sub>g</sub> i:]	nose
[pa:]	hit	[ŋ <sub>g</sub> i:]	give
[ɸa:]	have/stay	[ni:]	sun
[t <sub>h</sub> a:]	shine	[ani]	when
[t <sup>h</sup> <sub>h</sub> a:]	emit	[agi]	what
		[aŋ <sub>g</sub> i]	when
[k <sup>h</sup> <sub>h</sub> i:]	court	[a <sup>n</sup> d <sup>w</sup> anε]	owner
[k <sup>h</sup> <sub>h</sub> i:]	two	[a <sup>n</sup> danε]	wrapping
[ki:]	hand	[adagudi]	tickle
[wi:]	penis	[awaɸε]	near
[ɸi:]	sweep		

$\left[ \begin{array}{c} t^h a^m b e n e \\ t a b e n e \\ t a m e n e \end{array} \right]$	grown cold chosen relatives	$\left[ \begin{array}{c} t^w \varepsilon : \\ t^h \varepsilon : \\ \eta \varepsilon : \text{Ja} : \\ w \tilde{\varepsilon} : \text{Ja} : \end{array} \right]$	retch story leave gesture rudely
---	-----------------------------------	---	---

Within the pattern of free variation and complementary distribution that has been described in 3.1 - 3.10, it is possible to propose that the phonemes of the language are those set out in figure 3.

Obstruent nasals (3.1.1-2, 3.10.1.1) are analysed as complex phonemes, as are other segments with phonemic non-primary articulations. The question of orthographic representation of these phonemes is discussed in 3.12.

### 3.11.2 Realization of phonemes

3.11.2.1 /p/ is realised as either [p] or [p<sup>h</sup>] in the environment ## \_\_\_\_ X

3.11.2.2 /b/ has the following realizations:

----> [p] / ## \_\_\_\_ VX

----> { [b] /  $\left[ \begin{array}{c} +high \\ -back \end{array} \right]$  } —  $\left[ \begin{array}{c} +high \\ -back \\ -tense \end{array} \right]$

----> { [b] /  $\left[ \begin{array}{c} +high \\ \alpha back \end{array} \right]$  } —  $\left[ \begin{array}{c} +high \\ -back \end{array} \right]$

----> [β] /  $\left[ \begin{array}{c} -high \\ -tense \end{array} \right]$  —  $\left[ \begin{array}{c} -high \\ -tense \end{array} \right]$

3.11.2.3 /<sup>m</sup>b/ is always realized as [<sup>m</sup>b].

3.11.2.4 /b<sup>w</sup>/ is always realized as [b<sup>w</sup>].

3.11.2.5 /<sup>m</sup>b<sup>w</sup>/ is always realized as [<sup>m</sup>b<sup>w</sup>].

3.11.2.6 /t/ is realized as follows:

----->  $[t_n^s]$  or  $[s]$  / ## \_\_\_\_\_  $\begin{matrix} V \\ [+high] \\ -back \\ -low \end{matrix}$   
 DIALECT A

---->  $[t_n^h]$  in all other environments.

3.11.2.7 /d/ has the following realizations:

---->  $[t_n]$  / ## \_\_\_\_\_ VX

---->  $\begin{Bmatrix} [d] \\ [t_n] \end{Bmatrix}$  / V \_\_\_\_\_ V

3.11.2.8  $^nd/$  is always realized as  $[^nd]$ .

3.11.2.9  $/t^w/$  is always realized as  $[t_n^{hw}]$ .

3.11.2.10  $/d^w/$  is always realized as  $[t_n^w]$ .

3.11.2.11  $^nd^w/$  is always realized as  $[^nd^w]$ .

3.11.2.12 /k/ is always realized as  $[k^h]$ .

3.11.2.13 /g/ has the following realizations:

---->  $[k]$  / ## \_\_\_\_\_ VX

---->  $\begin{Bmatrix} [k] \\ [g] \end{Bmatrix}$  /  $\begin{matrix} V \\ [-low] \\ [-back] \end{matrix}$  \_\_\_\_\_  $\begin{matrix} V \\ [-low] \\ [-back] \end{matrix}$

---->  $[g]$  /  $\left\{ \begin{matrix} V & & V \\ [+high] & \text{_____} & [+high] \\ V & & V \\ [\alpha \text{ high}] & \text{_____} & [-\alpha \text{ high}] \end{matrix} \right\}$

---->  $\begin{Bmatrix} [x] \\ [\gamma] \end{Bmatrix}$  /  $\begin{matrix} V \\ [-high] \\ [-tense] \end{matrix}$  \_\_\_\_\_  $\begin{matrix} V \\ [-high] \\ [-tense] \end{matrix}$

---->  $\begin{Bmatrix} [x] \\ [\gamma] \\ [\chi] \\ [\phi] \end{Bmatrix}$  / # \_\_\_\_\_  $\begin{matrix} V \\ [-high] \\ -low \\ +back \end{matrix}$

3.11.2.14  $^ng/$  is always realized as  $[^ng]$ .



$$\text{----> [I] / } \left\{ \begin{array}{c} \text{V} \\ [+low] \\ [+back] \end{array} \text{ — } \begin{array}{c} \text{C} \\ [-son] \\ [+high] \\ [+back] \end{array} \text{ — } \begin{array}{c} \text{C} \\ [-son] \\ [+high] \\ [+back] \end{array} \right\}$$

----> [i] in all other environments

3.11.2.31 /e/ is realized as follows:

$$\text{---> [e] / } \left\{ \begin{array}{c} \#\# \text{ — } \#\# \\ \text{ — } \left\{ \begin{array}{c} \text{V} \\ [+low] \\ [-tense] \end{array} \right\} \\ \text{ — } \left\{ \begin{array}{c} \text{C} \\ [-back] \end{array} \right\} \end{array} \right\}$$

---> [ɛ] when contiguous with a segment that is [+cons, +high, +back, +round]

---> [e] or [ɛ] in all other environments

3.11.2.32 /a/ has the following realizations:

$$\begin{aligned} \text{---> [a] or [ɪ] / } & \left\{ \begin{array}{c} \text{C} \\ [+high] \\ [-back] \\ [-nasal] \end{array} \text{ — } \begin{array}{c} \text{C} \\ [+high] \\ [-back] \\ [-nasal] \end{array} \right\} \\ \text{---> [a] or [ʌ] / } & \left\{ \begin{array}{c} \text{C} \\ [+high] \\ [-back] \\ [-nasal] \end{array} \text{ — } \begin{array}{c} \text{C} \\ \text{+STRESS} \\ \text{V} \\ [+high] \\ [-back] \end{array} \right\} \\ & \left\{ \begin{array}{c} \text{V (V)} \text{ — } \end{array} \right\} \end{aligned}$$

$$\text{---> [ʌ] or [ɛ] / } \left\{ \begin{array}{c} \text{C} \\ [+cor] \\ [+cont] \end{array} \text{ — } \#\# \right\}$$

$$\text{---> [a] or [ʌ] / } \left\{ \begin{array}{c} \text{C} \\ [+high] \\ [+back] \\ [-cont] \end{array} \text{ — } \#\# \right\}$$

$$\text{---> [a] or [ɒ] / } \text{ — } \begin{array}{c} \text{C} \\ [+round] \end{array}$$



---> [a] in all other environments

3.11.2.33 /u/ is realized as follows:

---> [U] /  $\begin{matrix} V \\ [+low \\ +back] \end{matrix}$  ———

---> [u] in all other environments

3.11.2.34 /o/ is always realized as [ɔ].

3.11.2.35 /ĩ/ is realized as follows:

---> [ĩ] /  $\begin{matrix} V \\ [+low \\ +back \\ +nasal] \end{matrix}$  ———

---> [ĩ] in all other environments

3.11.2.36 /ẽ/ is always realized as [ẽ].

3.11.2.37 /ã/ is realized as follows:

---> [ẽ] / ———  $\begin{matrix} V \\ [+nasal] \end{matrix}$   $\begin{matrix} V \\ [+nasal] \end{matrix}$

---> [ã] in all other environments

3.11.2.38 /ũ/ is realized as follows:

---> [ũ] /  $\begin{matrix} V \\ [+low \\ +back \\ +nasal] \end{matrix}$  ———

---> [ũ] in all other environments

3.11.2.39 /õ/ is always realized as [õ].

### 3.12 ORTHOGRAPHY

3.12.1 The above phonemic interpretation suggests that there are thirty-nine Huli phonemes, and it is possible to represent these orthographically with 18 letters and one diacritic. The

letters are a b d e g h i j k l m n o p r t u w , and the diacritic is the tilde, ~. The relationship of these symbols to the phonemes is set out in table 12.

symbol	signal/relationship to phoneme																				
a b d e g h i j k l	<table> <tr><td>represents</td><td>/a/</td></tr> <tr><td>"</td><td>/b/</td></tr> <tr><td>"</td><td>/d/</td></tr> <tr><td>"</td><td>/e/</td></tr> <tr><td>"</td><td>/g/</td></tr> <tr><td>"</td><td>/h/</td></tr> <tr><td>"</td><td>/i/</td></tr> <tr><td>"</td><td>/j/</td></tr> <tr><td>"</td><td>/k/</td></tr> <tr><td>"</td><td>/l/</td></tr> </table>	represents	/a/	"	/b/	"	/d/	"	/e/	"	/g/	"	/h/	"	/i/	"	/j/	"	/k/	"	/l/
represents	/a/																				
"	/b/																				
"	/d/																				
"	/e/																				
"	/g/																				
"	/h/																				
"	/i/																				
"	/j/																				
"	/k/																				
"	/l/																				
m	<ol style="list-style-type: none"> <li>1. signals the non=primary articulation [m] when preceding b : i.e. mb = /mb/;</li> <li>2. elsewhere represents /m/.</li> </ol>																				
n	<ol style="list-style-type: none"> <li>1. signals the non-primary articulation [n] when preceding d : i.e., nd = /nd/;</li> <li>2. signals [ŋ] when preceding g : i.e., ng = /ŋg/;</li> <li>3. signals [ɲ] when preceding j : i.e., nj = /ɲj/;</li> <li>4. elsewhere, represents /n/.</li> </ol>																				
o p r t u	<table> <tr><td>represents</td><td>/o/</td></tr> <tr><td>"</td><td>/p/</td></tr> <tr><td>"</td><td>/r/</td></tr> <tr><td>"</td><td>/t/</td></tr> <tr><td>"</td><td>/u/</td></tr> </table>	represents	/o/	"	/p/	"	/r/	"	/t/	"	/u/										
represents	/o/																				
"	/p/																				
"	/r/																				
"	/t/																				
"	/u/																				
w	<ol style="list-style-type: none"> <li>1. signals the non=primary articulation [w] when following a segment that is specified [+cons]: i.e., Cw = C<sup>w</sup> ;</li> <li>2. elsewhere, represents /w/.</li> </ol>																				
~	<ol style="list-style-type: none"> <li>1. signals a [+nasal] when over a vowel;</li> <li>2. signals palatalization when over n, i.e., ñ = /n/.</li> </ol>																				

Table 12: Orthography

3.12.2 This orthography differs from the one currently used by most people literate in Huli. The received orthography (RO) is that devised by W.M.Rule in 1954-55 (Rule 1977), and is used in vernacular literacy teaching and in major publications such as the New Testament (Bible Society of Papua New Guinea 1983).

3.12.3 The RO differs from the one I have suggested in that that it uses 'y' in place of 'j'; signals nasal vowels by underlining,     , not by a tilde; allows consonantal digraphs to represent obstruent nasals, but excludes trigraphs, by signalling secondary labialization with 'u' or 'o'. It does not include a symbol for /p/, and indicates falling tones with an acute accent, rising tones with a grave (contrary to this orthography, which reverses these signals - cf 4.2.3).

3.12.4 I shall use the orthography suggested in table 12 as the preferred orthography (PO), since it seems to me to accommodate better the phonemic interpretation given in 3.11.

3.12.5 This concludes the description of Huli segmentals, and establishes a basis from which to proceed to a description of the supra-segmentals, which I am treating under prosodies.

## CHAPTER 4

### PROSODIES

This term is used broadly, to cover features of the language such as tone - which some phoneticians would treat under the chapter on segmentals - and also features such as intonation and vowel harmony, prosodies in the Firthian sense.

#### 4.1 SYLLABLES

The formula for Huli syllable structure, derived from a consideration of the phonemes underlying the PO, is

$$C_{\emptyset}^1 V_1^3$$

as can be seen from the examples:

a.ga.li	man	/a.ga.li/
da.nda	bow	/da. <sup>n</sup> da/
mbi.ra.ga	darkness	/ <sup>m</sup> bi.ra.ga/
gaea	sunshine	/gaea/
du.gwa	lift up	/du.g <sup>w</sup> a/
a.ndwa.ne	owner	/a. <sup>n</sup> d <sup>w</sup> a.ne/
ngwai	gathering	/ŋg <sup>w</sup> ai/
bi.a	do/ make	/pi.a/

The data show that vowels can occur in sequences that are not glides, while there are no words that end in consonantal segments - although exceptions to this are found in the B3 dialect, where final vowels are deleted by some speakers.

Huli syllables are accordingly interpreted as consisting of an optional consonantal onset followed by a nucleus of one or

more vowels.

Mingographic evidence suggests that in diphthongal glides the morae can differ in prominence (cf Fig.31, appendix A), but these, along with geminate vowels that occur in monosyllabics, are here analysed as single peaks of prominence.

## 4.2 TONES

4.2.1 Although tone is phonemic in Huli, it carries a low functional load. In connected speech, it rarely appears to be crucial, but there are contrasting monosyllabic and disyllabic diads and triads in the language. A sample list of such items was drawn up, and a survey conducted among men and women in 22 Huli locations. 35 participants contributed speech samples, which included non-contrasting polysyllabic items. The details of the survey are given in appendix A: it is sufficient here to note the general conclusions.

4.2.2 Tone is problematic and warrants further investigation. The data collected so far show that there are four tones (tonemes) available for use, but that they are not employed in a uniform or consistent manner across the language group. Some speakers do not use pitch to discriminate between certain homophones, while others do. Among the latter there is considerable variation in the way the four tones are used, perhaps reflecting differing dialectal systems.

4.2.3 However, a point of near unanimity is that there are indeed four contrasting tones, which are:

Tone 1 (falling)	:	grave	(à)
Tone 2 (rising)	:	acute	(á)

Tone 3 (level) : macron (ā)  
Tone 4 (rising-falling) : circumflex (â)

4.2.4 In the light of the criteria proposed by Pike (1948), this could be interpreted as a contour system. Foley (1986:63-64) doubts if there are any genuine tonal systems in Papuan languages, which he believes are better interpreted as having pitch-accent systems, citing Fore (Scott 1978) as an example. However, the minimal pairs he uses to illustrate his point are all polysyllabic, and when he comes to consider Awa (Loving 1973) with its monosyllabic minimal pairs he reckons it is a possible candidate for consideration as a tonal language (although he concludes that it probably is not one).

4.2.5 While the toneme system requires fuller investigation, the data to hand indicate that it is part of a wider system of pitch movement associated with language at discourse level. This will become clear in the course of the following description of intonation, based mainly on data from the Gumu area.

### 4.3 INTONATION

4.3.1 Intonation can be described as the systematic patterning of prosodic features such as pitch, pitch-movement, loudness and length (cf Coulthard 1985: 96-98). Coulthard, following Brazil (cf Brazil, Coulthard & Johns 1980), notes that it is the contrasts, not the absolute values, of the associated acoustic phenomena that are important for a consideration of intonation.

4.3.2 Huli speakers encode information in units, each of which carries an intonation contour similar to one or other of the

tones 1 to 4 (cf 4.2.3). The intonation itself functions as a device for encoding some of the information carried by the unit, typically relating the information unit to other units or to information already stated or understood.

4.3.2.1 Intonation 1, corresponding to tone 1 (F), is usually found on the final information unit of an utterance, and also on a unit that functions as a tag. As a tag, it reactivates or recalls information, or clarifies the preceding information unit or cluster of units. As the final unit of an utterance, it usually signals the piece of information that the hearer is being particularly asked to attend to. When intonation 1 occurs across a complete utterance, the speaker is usually indicating that the assertions's polarity is certain. (Examples of intonation 1 and of the other intonations are to be found in 4.3.3.)

4.3.2.2 Intonation 2, corresponding to tone 2 (R), occurs across units that are anaphoric in reference and that precede the main information unit. This anaphoric bridge is important in that it may function as a device that elicits/allows supportive interaction in dialogue, occurring on the first of element adjacently linked utterances(cf 12.3). Interestingly, this intonation signals certain not uncertain polarity, contrary to the generalization that rising tones indicate uncertain and falling tones certain polarity (cf Halliday 1967)

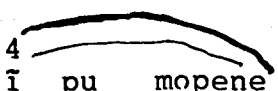
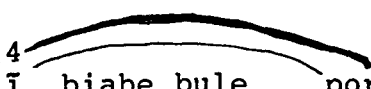
4.3.2.3 Intonation 3 is a conflation of 2, 1 and 2 : RFR. It occurs on units that precede the main information unit and that are cataphoric in orientation. Units that carry this intonation are typically purposive or hypothetical clauses.

4.3.2.4 Intonation 4 corresponds to tone 4 (RF), and generally

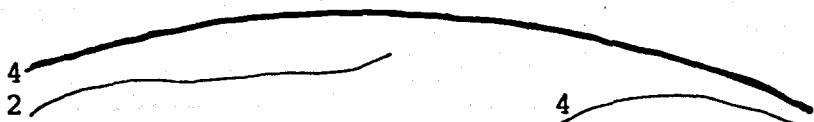
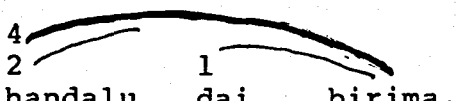
signals the main information unit, the one to which other units in an utterance are referred or linked. It is also the intonation that most usually prevails across an utterance, and as such may modify or perturb the intonation contours of the information units that cluster within it.

4.3.3 Examples of utterances embodying these information units and their intonation contours are given below. The thick line represents the overall contour of the utterance, the thin line the intonation contour of the information unit.

4.3.3.1 Intonation 4 as an overall intonation across an utterance, and, simultaneously, as the main information unit:

- a)   
 1̄ pu mopene  
 1S rope CAUS-go-EX DEF  
 I rope to get went  
 I went to fetch rope.
- b)   
 1̄ biabe bule poro  
 1S work do-PURP go-1S-SIMP PRES  
 I work to do go/am going  
 I'm on my way to work.

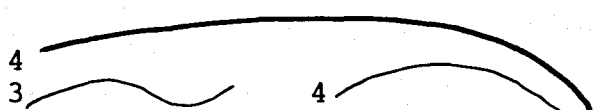
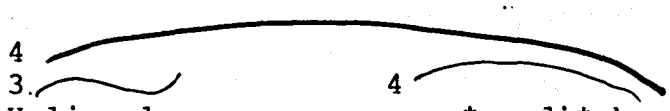
4.3.3.2 Intonation 2 as an anaphoric bridge. In a) it is followed by a main information unit, carrying intonation 4; in b) by an utterance-final information unit; in both examples, intonation 4 occurs across the complete utterance:

- a)   
 aba Mbili ibijagola Migili handarima.  
 father Bill come-3-PAST-ADV Migili see-1P-PAST  
 father Bill when-he-came Migili we saw  
 when Father Bill came, we visited Migili.
- b)   
 handalu dai birima.




see-CONS return do-1P-PAST  
 having-seen return we did  
 after visiting there we came back.

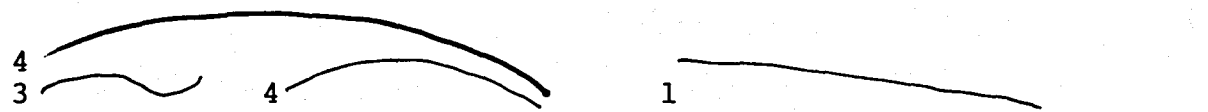
4.3.3.3 Intonation 3, the cataphoric deixis, across an initial information unit. In each example it is followed by a main information unit with intonation 4, each utterance having an intonation 4 general contour:

- a)   
 pu dewame togo wabilimu.  
 rope many-ERG bridge make-2P-FUT IMP  
 ropes many-with bridge make  
 make a bridge using a lot of ropes
- b)   
 Huli pole garo\* wedi\* hene.  
 Huli go-PURP car wait be/have-EX DEF  
 Huli in-order-to-go car wait (I) had  
 I waited for a car to go to Huli

4.3.3.4 Intonation 1 across a tag information unit, following a main information unit (intonation 4):

  
 abe i garo\* wedi\* lo hene; Huli pole lowa.  
 yesterday 1S car wait say-STM have-PAST Huli go-PUR say-CONS  
 yesterday I car wait to-utter had. Huli to-go having-said  
 yesterday I waited for a car, having decided to go to Huli

4.3.3.5 A tag unit (intonation 1) following an utterance with an intonation 4, comprising a cataphoric deixis (intonation 3) that precedes a main information unit (intonation 4):

  
 Huli pole garo\* wedi\* hene; goti\* lo pole.  
 Huli go-PURP car wait have-PAST court utter-PURP go-PURP  
 Huli to-go car wait had court to speak in-order-to-go  
 I waited for a car to go to Huli, having decided to go to court

4.3.3.6 Intonation 1 across an utterance, signalling certain

polarity:

a) 1  
naibule                      bira  
NEG-come-PURP make/do-3-SIMP PRES  
not-to come            (he) makes  
he won't come

b) 1  
ladaba  
utter-2D/P-IMP PRES  
speak!

4.3.4 In connected speech, tones can be perturbed as they are mapped onto the intonation contour of the information unit in which they occur. For example, the place name Huli is produced in isolation by Gumu dwellers as tone 3 (L), but is perturbed to tone 2 (R) at the beginning of intonation 4 (RF) or intonation 3 (RFR), or to tone 1 (F) at the beginning of intonation 1 (F). In the examples below, double slashes indicate the boundaries of the intonation contour in question.

a) Huli 3 ---> 2

3  
// Huli pole // hondo haja.  
Huli go-PURP wait have-3-PAST  
he waited to go to Huli.

b) Huli 3 ---> 1

1  
hondo hene, // Huli pole lowa.//  
wait have-PAST Huli go-PURP utter-CONS  
he waited, having said he'd go to Huli.

4.3.4.1 Generally, at least one accented syllable in an information unit is given prominence, and this can be another source of tone perturbation. In the examples given below, prominent syllables are preceded by a caret; information units are placed between double slashes; and the numerals indicate tones, not intonation contours.

a) pu 3 ---> 2

2 2 4  
^i ^pu mopene  
1S rope CAUS-go-EX DEF  
I went to get rope

b) abe 1 ---> 3

ani 3 ---> 1

3                      1   1           4  
 ^abe                i ^ani    haribe  
 yesterday 2S where be-2S-SIMP PAST-Q  
 where were you yesterday?

4.3.4.2 However, when more than one information unit occurs in an utterance, a speaker will typically accord salience to the one that he/she wishes to foreground. This is achieved by stepping up the pitch and increasing the loudness of the prominent syllable of that unit, other units being given a secondary prominence. Consider the following examples, in which a shadowed caret indicates a primary stress. Mingograms of these utterances can be found in appendix B.

a)    // pu    ^dewame //    ^togo wabilimu //  
       rope many-ERG    bridge make-2P-FUT IMP  
       ropes many-with    bridge make  
       make a bridge using a lot of ropes

b)    // ^Huli pole    //    garo\* ^wedi\* hene //  
       Huli go-PURP    car    wait be/have-EX DEF  
       Huli in-order-to-go car    wait (I) had  
       I waited for a car to go to Huli

In a), the hearers' attention is focussed on the speaker's wanting them to use lots of rope; and in b), it is the speaker's waiting for a car that is foregrounded.

4.3.4.3 What is happening here is that the language is being ordered in such a way that it draws the hearer's attention to pieces of information that the speaker wants him/her to focus on. The principal device being used is that of giving prominence to an accented syllable, a device that involves perturbing the tone of the item being given salience. This is one of the

factors contributing to tone perturbation - others being the pitch contours of utterances and information units - and that underline the low functional load that tonemes carry as discriminators between items that are otherwise homophonous.

4.3.5 Across larger stretches of discourse, the inter-relationship of tones and intonation becomes clearer, although the need for more attention to this area does not need stressing.

4.3.5.1 Consider the texts below, the first of which is part of a *bi te* 'folk tale' (2.3.2.5), while the second is a piece about women and pig-ropes, written by a newly literate teenage girl. Numerals indicate intonation contours, and double slashes the beginning of information units.

4  
a) // ai ^alebe, laja.  
EXC like-Q say-3-SIMP PAST  
ah like-what (he) said  
Ah, what was it like?, he said.

4  
// agali mbira ^ogoria haja.  
man one here-LOC be/have-3-SIMP PAST  
man a towards here was  
There was a man right here.

1  
// ^ai nde  
EXC EXC  
ah right  
Yes, that's it.

3 3  
// ^mbiru, // Hela-^Obene pole, lowa,  
once Hela-Obene go-PURP say-CONS  
one day Hela-Obene in-order-to-go having said  
One day, having said he'd go to Obene country,

4  
// ^tabage manda bija.  
drum head made/do-3-SIMP PAST  
drum thought (he) did  
He prepared a drum.

3 4 2 3  
b) // nogo ^hende // ^walime бага. // ^walime, // nogo

pig	leash	woman-ERG	hit-3-CUST	woman-ERG	pig
pig	rope	women	work	women	pig
Women work pig-ropes.				Saying, 'Tether	

	1		2	4
^hende ha,	// lalu	^baga.	// ^bowa,	// nogo
leash have-2S-IMP	say-CONS	hit-CUST	hit-CONS	pig
care-for	saying	make	having worked	pig
the pig!	women work ropes.		After working,	

	2	3	4
^hende haja.	// ^bowa	// ^haga	wali // nogo
leash have-3-PAST	hit-CONS	have-CUST	woman pigs
leash she had.	having worked	keeper	woman pigs
she had a pig-rope.	After working it, the careful woman		

	1
^haga.	// ^ogoni.
have-CUST	that
has	that (one)
keeps her pigs.	That's all.

4.3.5.2 The first text is somewhat unusual in that it would normally be sung or chanted (cf 10.5.3.8), and thus the intonation contours would be perturbed by the constraints of performance. While this example was read aloud from a primer, it retains some of the characteristics of *bi te*, in particular the use of large information units. Intonation 4 is used to introduce the text, and the introduction is concluded by the use of intonation 1, signifying that this is to be taken as the starting point. 'mbiru' and 'Hela- ... lowa' provide examples of cataphoric reference.

4.3.5.3 Text b) begins with an intonational contour that is a cataphoric deixis, and includes three examples of intonation 2 functioning as an anaphoric bridge. The unit 'lalu бага' exemplifies a tag-like conclusion to an utterance, while the concluding 'ogoni' has intonation 1, signalling certitude of polarity.

4.3.5.3 Further exemplification of the functions of informa-

tion units and their associated intonation contours can be seen in chapter 12. A more complete description will have to await the collection of a very considerable amount of uncontaminated data - a formidable requirement today, when social change and language change are happening so quickly (cf chapter 11).

#### 4.4 VOWEL HARMONY

4.4.1 There is a powerful vowel harmony rule operative across non-suffixed free morphemes,

$$v \rightarrow \begin{bmatrix} \alpha \text{high} \\ -\text{low} \end{bmatrix} / \begin{bmatrix} \alpha \text{high} \\ -\text{low} \end{bmatrix}^v c \text{ ---}$$

which says that high and mid vowels cannot occur in contiguous syllables.

4.4.1.1 This may be a characteristic common to languages of the Trans-New Guinea phylum. Franklin notes of Kewa that

low non-central and high vowels do not occur  
in contiguous syllables separated by a consonant  
(1971: 12)

and that the sequences \*CeCi, \*CeCu, \*CoCi and \*CoCu had not been observed. Likewise, Ingemann records in his word list (1960: 2) that Ipili-Paiyala has the same sort of vowel harmony constraints, although they tend to disappear in careful speech.

4.4.1.2 My Witu wordlist is similar to Franklin's (1975) in reflecting the same kind of phonotactic pattern, while published wordlists of Sau and Fasu (Franklin 1975), Foe and Pole (Rule 1977), Pawaia (Trefry 1969; 1972), Nembi (Tipton 1982), and my own collected wordlists for Nembi, East and West Kewa, Det, Pomberel and 8 Mendi dialects all show the same vowel

harmony rule to be operative.

4.4.1.3 Similarly, the lists given by Scott (1978), which go beyond the Highlands, indicate the same phonotactic constraints in Gende, Siane, Yabiyfua, Asaro, Gahuku, Benabena, Kamano, Yate, Yagaria, Fore, Gimi, Awa, Ayuana, Gadsup and Tairora.

4.4.1.4 One of Huli's significant neighbours, Duna, behaves in the same way. This is interesting, since Duna has quite a low lexical correspondence with Huli (about 18%), and is not closely related, being a member of the Central South New Guinea stock, in which, together with Bogaya, it is ranked as a family (Wurm 1982).

4.4.1.5 It may be, then, that this vowel harmony system is operative quite widely in non-Austronesian Papuan languages: certainly, its presence in Huli is not exceptional. As manifest in Huli, the system illustrates both types of primary vowel harmony distinguished by Aoki (1968, cited in Hyman 1978: 233). Partial vowel harmony is the more pervasive, manifest in assimilation to the height of a contiguous vowel, while complete vowel harmony is present in reduplication (cf 4.4.3).

4.4.1.6 As will be seen, the Huli system is interesting but lacks the complexity of some of the systems found outside Papuan languages - such as those in Javanese (Yallop 1982b); Finnish and Hungarian (Vago 1973); Akan (Stewart 1967), Ewe (Ansre 1963), Igbo (Carnochan 1973), and other African languages.

4.4.2 Table 13 sets out the (V)CV sequences that occur in non-affixed free morphemes. The table reads from left to right, with the segments set out in the overhead horizontal axis sub-

<div><div>C</div><div>(V)CV</div></div>	p b mb t d nd k g ng h m n l r w j													
ØCi	+	+	+	+	+	+	+	+	+	+	+	+	+	+
iCi	+	+	+	+	+	+	+	+	+	+	+	+	+	+
iCu	+	+	+	+	+	+	+	+	+	+	+	+	+	+
iCa	+	+	+	+	+	+	+	+	+	+	+	+	+	+
iCe	+	+	+	+	+	+	+	+	+	+	+	+	+	+
iCo	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ClØ	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ØCu	+	+	+	+	+	+	+	+	+	+	+	+	+	+
uCu	+	+	+	+	+	+	+	+	+	+	+	+	+	+
uCi	+	+	+	+	+	+	+	+	+	+	+	+	+	+
uCa	+	+	+	+	+	+	+	+	+	+	+	+	+	+
uCe	+	+	+	+	+	+	+	+	+	+	+	+	+	+
uCo	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CuØ	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ØCe	+	+	+	+	+	+	+	+	+	+	+	+	+	+
eCe	+	+	+	+	+	+	+	+	+	+	+	+	+	+
eCo	+	+	+	+	+	+	+	+	+	+	+	+	+	+
eCa	+	+	+	+	+	+	+	+	+	+	+	+	+	+
eCi	+	+	+	+	+	+	+	+	+	+	+	+	+	+
eCu	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CeØ	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ØCo	+	+	+	+	+	+	+	+	+	+	+	+	+	+
oCo	+	+	+	+	+	+	+	+	+	+	+	+	+	+
oCe	+	+	+	+	+	+	+	+	+	+	+	+	+	+
oCa	+	+	+	+	+	+	+	+	+	+	+	+	+	+
oCi	+	+	+	+	+	+	+	+	+	+	+	+	+	+
oCu	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CoØ	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ØCa	+	+	+	+	+	+	+	+	+	+	+	+	+	+
aCa	+	+	+	+	+	+	+	+	+	+	+	+	+	+
aCi	+	+	+	+	+	+	+	+	+	+	+	+	+	+
aCu	+	+	+	+	+	+	+	+	+	+	+	+	+	+
aCe	+	+	+	+	+	+	+	+	+	+	+	+	+	+
aCo	+	+	+	+	+	+	+	+	+	+	+	+	+	+
CaØ	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Table 13: Phonotactic constraints



stituting for the 'C' slot in the configurations given on the right hand vertical axis.

4.4.2.1 The indicator " + " shows that the configuration is attested as occurring, while the indicator " - " shows that it has not yet been found. The question mark, " ? ", indicates that the configuration is doubtful and not well attested.

4.4.2.2 Thus the first configuration on the vertical axis,  $\emptyset Ci$ , occurs as  $\emptyset pi$ ,  $\emptyset bi$ ,  $\emptyset mbi$ , etc., but the sequence  $*\emptyset ri$  has not yet been found. Similarly, the second configuration on the vertical axis,  $iCi$ , can be realized as  $imbi$ , etc., but not as  $*iti$ ,  $*iki$  or  $*ihi$ .

4.4.2.3 As regards doubtful items,  $iCe$ , for example, has been recorded as realized in *ibendege* 'type of moss' and also in *gaju-dimbereni* 'cave', but the former occurs more usually as *ibandege*, suggesting that its  $iCe$  sequence is a dialectal or even an idiolectal variant, while the latter belongs to the register used in the high bush (cf 2.5.3), and is of rare occurrence.

4.4.2.4 It will be noticed that the sequences listed in the table are all of the variety (V)CV - that is, syllables whose vowels are separated by a consonant. A further constraint is that vocalic glides are excluded from the 'V' slot.

4.4.2.5 What emerges from the data is the sparse to non-occurrence of syllable sequences such as  $*iCe$ ,  $*iCo$ ,  $*uCe$ ,  $*uCo$ ,  $*eCi$ ,  $*eCu$ ,  $*oCi$  and  $*oCu$ . Some examples of sequences that do occur are given below:

kuni  
bone

ange  
bund

irigijidi  
type of fungus

gono trap	mende second	turungu kindling leaves
lembo anger	hiwa sago	gandebo vision
mone wasp	ginu mist	andane wrapper

4.4.2.6 The phoneme /a/ may co-occur with any other vowel in sequence, and some examples of this are included in the short list given above. The cover feature [tense] (cf 3.1.5) is of some assistance at this point, since it is possible to propose two general rules,

- 1) 
$$\begin{array}{c} V \\ [+low] \end{array} \rightarrow [-\alpha tense] / C \begin{array}{c} V \\ [-low \\ \alpha tense] \end{array} C \_ \# \#$$
- 2) 
$$\begin{array}{c} V \\ [+low] \end{array} \rightarrow [\alpha tense] / \# \# (C) \_ C \begin{array}{c} V \\ [-low \\ \alpha tense] \end{array}$$

4.4.2.7 The first rule says that when /a/ occurs in word-final syllables, its value for [tense] is opposite to that of the preceding vowel, if that vowel is [-low]. The second rule states that when /a/ occurs in a word-initial syllable, it has the same value for [tense] as a [-low] vowel in a following syllable. These rules are illustrated by the items given below in phonetic transcription, which include relevant examples from 4.4.2.4 :

- 1)  $\begin{array}{ll} [ku^m b\lambda] & \text{shade} \\ [ɔba] & \text{laughter} \end{array} \quad \begin{array}{ll} [\chi i w \lambda] & \text{sago} \\ [ke \beta a] & \text{anger} \end{array}$
- 2)  $\begin{array}{ll} [j \text{æ} w i l] & \text{tomorrow} \\ [ka^n d \text{æ} b \text{ɔ}] & \text{vision} \end{array} \quad \begin{array}{ll} [a n \text{ɛ} l] & \text{bund} \\ [a b \text{ɛ}] & \text{yesterday} \end{array}$

4.4.2.8 When high and mid vowels occur in syllables in the same word, they are always separated by a syllable whose 'V' slot is filled by /a/. Examples:

ogolebene  
four days ago

imane  
man's in-laws

egari  
feathers

pujulabe  
ceremonial braid

bedaguli  
swelling, boil

korali  
shallow pit

tudubane  
brain

egerebagi  
morning

4.4.2.9 However, most of these items are not simple unbound morphemes, but compound words, and the function of /a/ in these cases is twofold: it forms a bridge between [=low] vowels that have disparate specifications for [high], and it indicates internal word boundaries. These functions are illustrated by the examples:

ega # iri  
bird hair

--->

egari  
feathers

kora # uli  
scoop hole

--->

korali  
shallow pit

In each case, /a/ is realized as [a], according to the rule,

$$\begin{array}{c} \text{V} \\ [-\text{high}] \\ [+low] \end{array} \text{ ---> } [-\text{tense}] / \begin{array}{c} \text{V} \\ [\alpha\text{high}] \\ [-low] \end{array} \text{ C } \text{---} \text{ C } \begin{array}{c} \text{V} \\ [-\text{high}] \\ [-low] \end{array}$$

which states that when /a/ occurs in a syllable that is separated from each of its contiguous syllables by [+cons] segments, and the vowels of the contiguous syllables have opposing values for the feature [high], it is specified as [-tense] (cf 7.2.4).

4.4.2.10 Thus it can be seen that an important function of /a/ is that of bridging morpheme and internal word boundaries. It helps to clarify that Huli vowel harmony is basically a suprasegmental property, its essential domain of operation being across syllables and even across morpheme boundaries, involving sharing or copying the specification of the

feature [high], or the regressive/progressive assimilation of the value ascribed to the cover feature [tense].

4.4.2.11 However, the feature [tense] does not figure in the vowel harmony system beyond what has already been described, and assimilation across morpheme boundaries is concerned centrally with the feature [high].

#### 4.4.3 Assimilation across boundaries.

4.4.3.1 Hyman (1975:196) suggests that different boundaries seem to have different 'strengths', and the stronger the boundary the greater its ability to block phonological processes. He considers the morpheme boundary to be weaker than the full word boundary, with the internal word boundary somewhere in between.

4.4.3.2 Yallop, in his study of Javanese vowels, notes instances in which phonological process are blocked by morpheme boundaries (Cf Halim et al 1982:302), and this level of boundary can also render vowel harmony inoperative in Huli. However, bound inflectional morphemes generally activate the process, while some instances of it being seemingly blocked are governed by rules that are semantically rather than phonologically based.

4.4.3.3 Progressive assimilation across morpheme boundaries is exemplified by /-go/ and /-ne/, respectively the determiner (DET) and definitive (DEF) suffixes. When the DET is added as a first-place suffix to a verb stem to produce the iterative adjunct (cf 5.2.3), /o/ undergoes progressive assimilation according to the rule,

$$\begin{array}{c} \text{V} \\ \begin{bmatrix} -\text{high} \\ -\text{low} \\ +\text{back} \end{bmatrix} \end{array} \text{ ---> } / \begin{array}{c} \begin{bmatrix} \alpha\text{high} \\ \beta\text{low} \\ \gamma\text{back} \end{bmatrix} \end{array} / (\text{X}) \begin{array}{c} \text{V} \\ \begin{bmatrix} -\text{high} \\ \beta\text{low} \\ \gamma\text{back} \end{bmatrix} \end{array} \begin{array}{c} \text{STM} \\ \boxed{\phantom{C}} \end{array} + \begin{array}{c} \text{SUFX} \\ \boxed{\phantom{C}} \end{array}$$

<C = /g/>

Examples of this are:

la	+ go	---	la +ga	=	laga
utter-STM	DET				utter(ance)
bi	+ go	---	bi +gi	=	bigi
do-STM	DET				do(ing)
pu	+ go	---	pu +gu	=	pugu
go-STM	DET				go(ing)

4.4.3.4 Similarly, /-ne/ suffixed in first place to a verb stem assimilates to the stem-final vowel, according to the rule,

$$\begin{array}{c} \text{V} \\ \begin{bmatrix} -\text{high} \\ -\text{low} \\ -\text{back} \end{bmatrix} \end{array} \text{ ---> } [\alpha\text{high}] / (\text{X}) \begin{array}{c} \text{V} \\ \begin{bmatrix} \alpha\text{high} \\ -\text{back} \end{bmatrix} \end{array} \begin{array}{c} \text{STM} \\ \boxed{\phantom{C}} \end{array} + \begin{array}{c} \text{SUFX} \\ \boxed{\phantom{C}} \end{array}$$

In this instance, the resulting form functions as the existential definitive (cf 5.3.3). Examples:

he	+ ne	---	he +ne	=	hene
be-STM	DEF		be-EX DEF		was
hiri	+ ne	---	hiri +ni	=	hirini
roast-STM	DEF		roast-EX DEF		roasted
pe	+ ne	---	pe +ne	=	pene
go-STM	DEF		go-EX DEF		gone/went

(Note that verb stem changes are set out in 5.1.3, 5.1.4, etc.)

4.4.3.5 However, when /-go/ functions as a deictic, it always retains the specification [+back]. Except for this modification, it follows the rule given in 4.4.3.3, as is shown in the examples:

udu + go ---> udu +gu  
 up over the ridge DET up over the ridge there  
 = udugu  
 up there over the ridge

ni + go ---> ni +gu  
 down below DET down below there  
 = nigu  
 down below there

o + go = ogo  
 here DET this (here)

ede + go = edego  
 across the dip DET there across the dip

4.4.3.6 For some speakers, especially those of A dialect, the vowel harmony discussed immediately above disappears in careful speech, and the deictic suffix is always realized as /-go/. Recall that Ingemann (1960) has recorded similar instances of vowel harmony dissolving in deliberate speech among the Ipili-Paiyala (4.4 1 above).

4.4.3.6 Morpheme boundaries block regressive vowel harmony, except in the case of the verb inflections of the Simple Present (cf 5.2.1), which induce lowering of the stem final vowel of class 2 verbs (cf 5.1.1). The rule governing this regressive process is:

$$\begin{array}{c} \text{V} \\ [+high] \\ [-low] \end{array} \text{ ---> } [-high] / \text{XC} \begin{array}{c} \text{STM} \\ \boxed{\phantom{00}} \\ \boxed{\phantom{00}} \end{array} + \begin{array}{c} \text{SUFX} \\ \text{C} \\ \begin{array}{c} [+son] \\ [-high] \\ [+cor] \end{array} \end{array} \begin{array}{c} \text{V} \\ [-high] \\ [-low] \end{array} \#\#$$

4.4.3.6.1 This rule says that a stem final high vowel is lowered to mid when a suffix is added that consists of [ɿ] followed by a mid vowel. Examples are:

bi + ro = bero  
 make/do-STM 1S-SIMP PRES I make/do  
 mi + ro = mero  
 take/give-STM 1S-SIMP PRES I take/give

wi	+	re	=	were
place=STM		2S=SIMP PRES		you place
ngi	+	re	=	ngere
give=STM		2S=SIMP PRES		you give

4.4.3.7 This regressive process is more apparent in the case of the disyllabic verb stem, *ibi-* 'come'. Application of the above rule suggests an initial lowering of the stem=final vowel:

ibi	+	re	---	*ibere
come=STM		2S=SIMP PRES		

Further vowel harmony regression would then produce the standard form,

ibere	---	ebere
		you come

through application of the rule,

				STM		SUFX	
V							
[+high]	---	[±high]	/ ##	_____ C	$\left[ \begin{array}{c} V \\ \text{[-high]} \\ \text{[-low]} \end{array} \right]$	+	$\left[ \begin{array}{c} \\ \\ \end{array} \right]$ ##

which spreads the lowering to the first stem vowel.

4.4.3.8 Counter harmony can also occur when the DEF suffix /ne/ is added to a verb form. Consider the examples:

hale ke	+	ne	=	hale keni
ear EV=2S		DEF		ear you ought to be
				you should listen

abe	ibiri	+	ne	=	abe ibirine
yesterday	come=2S=SIMP PAST		DEF		you should have come
					yesterday

dalimu larimi	+	ne	=	dalimu larimine
loudly utter=2P-SIMP PAST		DEF		you should have spoken
				loudly

agali bare	+	ne	=	agali bareni
man hit/kill=2S=SIMP PRES		DEF		you should kill
				the man

4.4.3.8.1 In each case a counter harmony rule is operative

which says that the suffix vowel takes on a value for [high] that is the opposite of the stem-final vowel's specification for that feature, thus:

$$\begin{array}{c} \text{V} \\ \begin{bmatrix} \text{-high} \\ \text{-low} \\ \text{-back} \end{bmatrix} \end{array} \text{ ---> } \begin{array}{c} \text{STM} \\ \text{V} \\ \begin{bmatrix} \text{-}\alpha\text{high} \end{bmatrix} \end{array} / \text{ X } \begin{array}{c} \text{V} \\ \begin{bmatrix} \alpha\text{high} \end{bmatrix} \end{array} + \begin{array}{c} \text{SUFEX} \\ \begin{bmatrix} \text{C} \_\_\_\_\_\_ \end{bmatrix} \end{array} \text{##}$$

4.4.3.9 This is one of those interesting examples in Huli where vowel height, the salient feature in the vowel harmony system, seems to be semantically rather than phonologically motivated, the resulting form signalling modulation. Other instances where harmony or lack of it is significant are indicated by the examples,

bu	+ le	= bule
make/do-STM	PURP	that he may do it
bu	+ li	= buli
make/do-STM	PREC	lest he do it
bi	+ lo	= bilo
make/do-STM	PERM	let him do it

4.4.3.9.1 The second example is the exceptional one, conforming to harmony rules across a morpheme boundary. While the first and third examples show positive modal concord - affirming a possible action - the second signals negative modality.

4.4.3.10 Of the rules outlined in the last two sectors it needs to be said that although they are restricted in scope they are of frequent occurrence. As part of the general description of Huli vowel harmony, they illustrate that vowels tend to assimilate, progressively and also regressively, to height: mid and high vowels cannot occur in consecutive syllables in unbound morphemes.

4.4.3.11 This concludes the section on vowel harmony, and



also the chapter on prosody. The next chapter will begin a new section, describing verbs, with particular attention being given to verb morphology.