

## SOME LANGUAGE AND SOCIOLINGUISTIC RELATIONSHIPS IN THE UPPER SEPIK REGION OF PAPUA NEW GUINEA

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### 1. INTRODUCTION

Most of the languages in the Upper Sepik have been previously identified.<sup>1</sup> In May 1983 the authors conducted a sociolinguistic field survey<sup>2</sup> of some of the languages which were not discussed in previous work. These languages are located north of the Central Range of mountains, from the headwaters of the Leonhard Schultze and April Rivers to the Sepik River.

Since the people in this area frequently move over quite a large area, some groups no longer live near previously reported village sites.

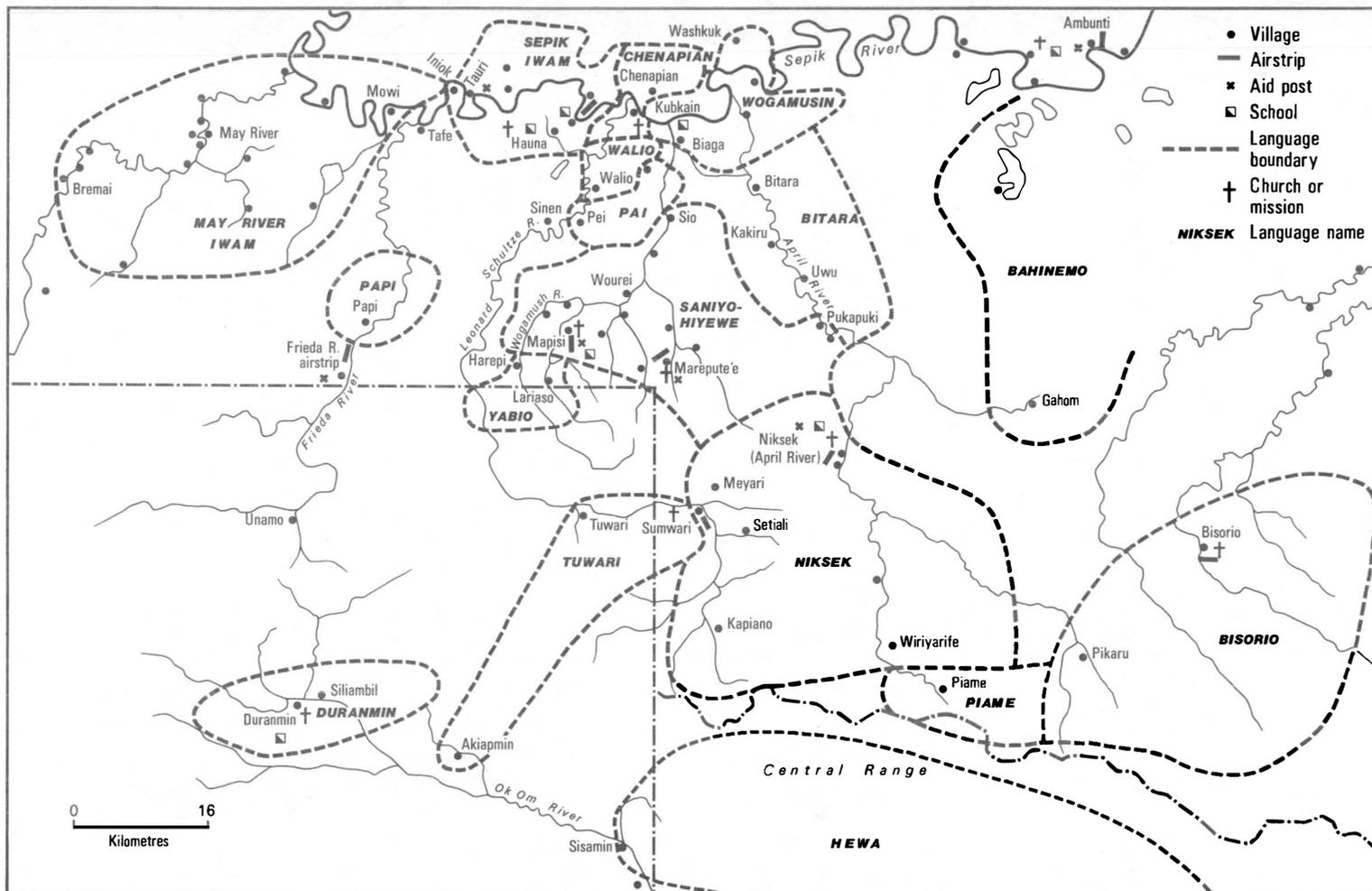
### 2. PROCEDURE

Lexical items were elicited according to a modification of the Summer Institute of Linguistics standard 190 word list. A number of items which Laycock (1970) and others<sup>3</sup> have shown to be subject to rapid change were omitted along with a number of items difficult to elicit through Tok Pisin under survey conditions. The result was a 108 word list which was later reduced to 100 words by eliminating several that seemed to cause problems sufficient to skew the results.

An attempt was made to obtain two lists at each village wherever this was possible.

In addition, two sociolinguistic questionnaires from Bugenhagen (1981) were completed whenever it was possible to obtain the data in the time allotted. Samples of these questionnaires appear in Appendices 9.3 and 9.4.

Actual villages visited<sup>4</sup> were Chenapian, Kubkain and Washkuk on the Sepik River; Walio, Pei and Sinen on the Leonhard Schultze River; the village of Niksek at Niksek (April River) airstrip; Sumwari, Piame, Sisimin, Siliambil (Duranmin), Papi on the Frieda River; and Lariaso, Mapisi, Marepute'e (Moropote airstrip) and Pakapuki. The word lists for Pikaru were taken at the village of Piame. The word list for Akiapmin was taken at Siliambil.



MAP 1: UPPER SEPIK REGION OF PAPUA NEW GUINEA (UPDATED TO SHOW THE SITUATION AS OF MAY, 1988)

The word lists were then carefully compared and the probable cognate decisions were made according to the following criterion. The recorded phonetic transcriptions were assumed to be approximately phonemic transcriptions as well. Then, with one symbol generally corresponding to one phoneme, the following criterion was used. If two forms have at least 50% of their phonemes identical or regularly corresponding and in the same linear order from left to right, then the two forms are coded as cognate. Otherwise the two forms are coded non-cognate.

Following the cognate decisions, the results were then entered into a computer which then determined cognate percentages between each elicited language variety. These percentages are given in Appendix 9.1, Figures 5 and 6.

### 3. INTERPRETATION

The lexicostatistic data have been interpreted using the assumption that it is often difficult to separate the effects of borrowing from those due to genetic relationship by comparison of the present languages (Conrad and Dye 1975). Thus, the same cognate percentage is considered more significant if it occurs between geographically distant groups than adjacent ones, since it indicates contact at a time prior to the groups living in their present location. The term ‘cognate’ here is taken to imply similarity in form and meaning, without implying necessary genetic relationship. The terms family, stock, and phylum are also used with the implication being either genetic relationship or old and continuing contact.

The sociolinguistic data have been interpreted keeping in mind the limitations (Bugenhagen 1981) of (1) the arbitrary nature of the social and situational categories, (2) subjective evaluation of degree of ability in a given language, and (3) a heavy reliance on reported data.

The interpretation of a given cognate percentage is also an interesting problem. Variation and error in word lists collected under field conditions with very brief periods of contact is of considerable importance in the interpretation of the data. As an effort to estimate some of the error involved, we used the ‘home town test’, in which at least two word lists were taken at the same village for Pikaru, Pei, and the Sumwari dialect of Niksek. The results are given in Figure 1.

LANGUAGE LISTS COMPARED	COGNATE PERCENTAGE
Pei 1 - Pei 2	94%
Pikaru 1 - Pikaru 2	74%
Sumwari 1 - Sumwari 2	91%
Sumwari 1 - Sumwari 2	88%
Sumwari 2 - Sumwari 3	91%

FIGURE 1: HOME TOWN TEST RESULTS

We attribute the relatively low percentage (74%) at Pikaru to the very difficult elicitation situation, which was essentially monolingual.

We assume that the communication situation within the same dialect of the same language, in the same village, is virtually perfect. That is, ideally the two lists should be 100%. From the data in Figure 1, we estimate that the observed cognate percentages derived from a field elicitation situation are approximately 10% lower than the actual percentages (cf. the average of the observed intra-village percentages for Pei and the Sumwari dialect of Niksek, which is 91%).

That is, the 91% would be converted to 100% by adding 10% of 91, or 9, to 91. In a monolingual situation such as Pikaru, the actual cognate percentage relationship must undoubtedly be considerably more than 10% higher than the observed relationship. Therefore the observed relationship for Pikaru (74%) was not used in estimating the error by the 'home town test'. In fact, Pikaru was a unique situation on this survey, in that it was the only completely monolingual situation encountered.

The error revealed by the home town test can be attributed to various problems such as: alternate words, alternate close synonyms, minor dialect variation, alternate grammatical forms for verbs or adjectives, lack of understanding of Tok Pisin, and inaccurate elicitation procedure leading to lack of precise communication between the vernacular speaker and the field investigator.

The word lists identified with subscripts 1 and 2 in Figures 6 and 7 refer to lists collected in different villages which are assumed to be variant dialects of the same language. The cognate percentages between these dialects of languages are extracted and given in Figure 2, with the exception of the dialects of Niksek, which are reported in Figure 3, Section 3. May River Iwam and Sepik Iwam could also have been included in this list, but are not because of additional contrary data given in Section 3.3.

VILLAGES COMPARED	PERCENTAGE OF PROBABLE COGNATES
Hewa 1 (Sisimin) - Hewa 2 (Morubunim)	71%
Sinen-Walio	66%
Tuwari 1 (Sumwari) - Tuwari 2 (Akiapmin)	47%
Wogamusin 1 (Kubkain) - Wogamusin 2 (Washkuk)	98%
Yabio 1 (Harepi) - Yabio 2 (Yanamo)	69%
Yabio 1 (Harepi) - Woswari	52%
Yabio 2 (Yanamo) - Woswari	57%

FIGURE 2: DIALECT COMPARISONS INVOLVING WORD LISTS FROM DIFFERENT VILLAGES

This wide variation requires some explanation, even after the suggested 10% home town correction has been added to each of these percentages. The high percentage for Kubkain and Washkuk probably reflects both a relatively slight dialect difference and a very good knowledge of Tok Pisin, which was used to elicit the lists.

We assume that the other percentage relationships in Figure 2 are lower because of greater actual dialect variation and the fact that Tok Pisin is not very well known in these areas.

The very low figure for Tuwari 1 and Tuwari 2 serves as an illustration of this assumption. There was only one man available for the list for Tuwari 2 (Akiapmin). His knowledge of Tok Pisin was

rather sketchy. In addition, he and the other residents of Akiapmin now live a considerable distance from the main group of Tuwari speakers, who now live at Sumwari. The two groups are separated by 35 to 40 miles of difficult terrain including the central range, and do not have frequent contact at present. They reported that the separation is relatively recent though. The small size of the Akiapmin group and its frequent contact with Duranmin speakers could also be factors resulting in the low percentage relationship observed. There was, however, virtually no evidence of increased borrowing from Duranmin in the Akiapmin word list itself.

The low percentages among the three dialects of Yabio (Harepi, Yanamo, and Woswari), going down to 52%, can be explained by two of the factors mentioned previously: lack of knowledge of Tok Pisin used in elicitation, and actual greater dialect differences than those between the Hewa and Wogamusin dialects in Figure 2.

Due to time limitations and the relatively large area involved in the survey, we were not able to collect a complete set of sociolinguistic data at every village. A reading test in Tok Pisin was done at Pei, where we received a list of the names of eight literates. The best reader could read quite well. For the majority of the areas visited off the Sepik River, the reading test and the sociolinguistic questionnaires were inappropriate because it was impossible to ask most of the questions. Tok Pisin was not known that well. At Sumwari, however, we were able to ask a few of the questions. At Niksek there were 40 Niksek speakers presently in a Tok Pisin school and also 38 children in an English school in standard 1. Fritz Urschitz estimates that in 1983 there were about 50 who could read Tok Pisin.

A second literacy test was given to a Wiriyarife speaker at Niksek. In this case the test involved writing a number of common Tok Pisin words in his vernacular. Without any orientation to the vernacular orthographical changes involved, he did remarkably well. In Marepute'e village a Hiyewe song book was given to a man literate in Tok Pisin and he was able to read it without difficulty.

#### 4. LANGUAGES

##### 4.1 LEONHARD SCHULTZE STOCK/FAMILY

The Leonhard Schultze sub-phylum (without Papi) was first suggested by Dye and Townsends (1969). A more complete account appeared in Laycock (1973), who reported a complex noun classification system in Walio, Pai, and probably Papi. The five languages listed in the Leonhard Schultze Stock/Family are Walio, Pai, Yabio, Tuwari, and Papi. The present report supplements and updates these earlier findings in the following way.

Due to the small and mobile populations in this area, some of the previously reported village sites have been changed considerably, as indicated in the map and in the following comments.

Pai is a language spoken by approximately 80 people, the majority of whom now live in the village of Pei, which is a resettlement area on a large hill (hummock) in the midst of a sago swamp. Pei consists of all the former residents of Pi No.1 and Pi No.2. Another group lives at Paru, on the tributary of the Wogamus River between Biaga and Sio. A number of people have died from illness, which probably accounts for the higher population figure of 208 given in Laycock (1973). The adult Pai male speakers know a trade language named Yahapiri by means of which they communicate with Walio speakers and also the Sepik Iwam speakers at Hauna. The younger generation knows Yahapiri to a very limited extent, and we predict it will die out and eventually be replaced by Tok Pisin.

Walio is a language spoken by approximately 200 people living in four hamlets on the lower Leonhard Schultze River: Walio, Sinen, Nein, and Osak.

Yabio is a language spoken by between 60 and 100 people who now live at Lariaso on the Hewe River and Harepi on the Miwe River, both of which are tributaries of the Wogamus. Some of the Yabio people formerly lived at Woswori, which is now deserted.

Tuwari is a language spoken by about 90 people who used to live at the village of Tuwari on the upper Leonhard Schultze River and in other areas to the south and south-west of Tuwari. At present they live at Sumwari, with the exception of a small group who live at Akiapmin on a tributary of the Ok Om River.

Papi is a language spoken by about 70 people, most of whom live at the village of Papi (Paupe). This village has shifted to a new location still on the Frieda River, two miles downstream from the Frieda River airstrip. A few Papi speakers also live in the small hamlet of Wasimai on the Leonhard Schultze River.

Duranmin (also occasionally called Wani) is a language spoken by 141 people living in two villages, Siliam and Siliambil, near the Duranmin airstrip. At this stage Duranmin is still classified as an isolate, with the highest shared cognate percentage being 6%, which it shares with Pai, Walio, Hewa, and three dialects of Niksek (Kapiano, Sumwari, and Wiriarife). Of the 26 languages compared with Duranmin, only three (Sepik River Iwam, May River Iwam, and Kakiru) showed less than 3% shared cognates. The remaining 23 languages under comparison showed between 3% and 6% probable cognates. Such differences are assumed to be insignificant, given the difficult elicitation conditions. In section 2 we have argued that every observed cognate percentage is at least 10% too low.

More significant is one observed suffix, *-pu ~ -po ~ -fo ~ -po* possibly meaning animate, which occurs with many animate nouns, adjectives and body parts in Pai, Walio, Yabio, as well as in Duranmin. It is probable that it also occurs in Tuwari as *-moi*.

#### 4.2 SEPIK HILL STOCK/FAMILY

The Sepik Hill Stock/Family was documented first by Dye and Townsends (1969) and supplemented by Laycock (1973). Bruce (1979) reconstructed a subgrouping of Sepik Hill language by common sound changes<sup>5</sup>, Wurm (1982). Dye and Townsends originally posited 14 languages: Kaningra, Alamblak, Kapriman, Watakataui, Sumariup, Bisis, Mari, Bahinemo, Bitara, Sanio, Setiali, Gabiano, Umairof and Hewa. At that time a fifteenth language, Piame, was unknown but recognised as a possible member of the Sepik Hill Stock/Family. Laycock (1973) correctly joined Umairof to Hewa as a dialect and mentioned Pikaru as a possible additional Sepik Hill language. Wurm (1982) further refined the Sepik Hill Stock by positing three families: the Saniyo Family consisting of Saniyo, Paka, Gabiano, Piame, Pikaru, and Hewa; the Bahinemo Family consisting of Bitara, Bahinemo, Mari, Bisis, Watakataui, Kapriman, and Sumariup; and the Alamblak Family consisting of Kaningara and Alamblak.

The data from this present survey suggests the following further adjustments to the Sepik Hill Stock.

There is one language with approximately 300 speakers which we strongly suggest should be called Niksek. Niksek is the traditional name of the April River, which is relatively close to nearly all

the traditional living sites of this group. It is also the name of the airstrip where the majority of the people presently reside and have built houses, gardens, and are engaged in animal husbandry. This language has been designated by a number of different names in the literature: Paka, Setiali, Meiyari, and Gabiano. The last three are interpreted as dialects of one language according to our data, with observed cognate percentages ranging from 59 to 91 (actual percentages are estimated at 65 to 100). Gabiano is the most divergent with observed cognate percentages ranging from 59 to 68 with respect to the others. The complete list of observed probably cognate percentages in our data for the language we propose to call Niksek is shown in Figure 3.

Kapiano						
67	Sumwari 1					
68	91	Sumwari 2				
62	88	91	Sumwari 3			
59	77	82	80	Meiyari		
64	87	90	86	77	Setiali	
61	81	84	82	72	84	Wiriarife

FIGURE 3: DIALECTS OF NIKSEK

All these names are village names with the sole exception of Paka<sup>6</sup>, which is a derogatory name given to the Niksek people by Bahinemo speakers from the village of Gahom. The name Paka has strong negative connotations for the Niksek people. At the risk of future confusion and name proliferation, we feel the need to recommend strongly that the language name be changed to Niksek. The past movements of the Niksek people explain the origin of the name 'Paka'. The Niksek people originally lived in two different areas: near the present site of Wiriarife on a tributary of the Niksek (April) River and the general Sumwari area. Some of the Sumwari people later moved to a site downriver from the present Niksek (April River) airstrip and lived there for a few years, at which time they were given the name Paka by the Bahinemo people living at Gahom.

At present the Niksek people live in two main centres. About 200 live at Niksek where they have built houses and gardens and formed a new community along with the people who speak the Tuwari language. All the former residents of Setiali have moved to Sumwari or Niksek, and their old site is deserted. A very small number of Gabiano people remain at a village called Kabiano. A few also remain at Meiyari.

Piame is a language spoken by less than 100 people living in one village of the same name at the headwaters of the Niksek (April) River. It is a Sepik Hill language in the Saniyo Family, closely related to Niksek with cognate percentages varying from 44 to 53 for the various Niksek dialects.

Saniyo is a language spoken by about 700 speakers in two mutually intelligible dialects termed Saniyo and Hiyewe with extensive dialect chaining and 87% probable cognates between the extreme ends of the chain. Traditional settlement patterns in small swampland hamlets have been replaced by groups gathering in larger villages with the coming of several missions.

Pikaru (Bikaru, Bigalu) is the least-known language of the entire survey. Although Laycock suggests tentatively classifying it as a member of the Sepik Hill Stock/Family (1973:32), pending further data, our data suggests that Pikaru is a dialect of the Bisorio language, a language of the Enga

Sub-family of the West Central Family of the New Guinea Highlands Stock (Wurm 1982:125). Our evidence is as follows:

Pikaru (Bikaru) was first reported by Laycock (1973) on the basis of a patrol report 4/70-71 of Ambunti by L. Bragge. (This list appears in Figure 7, Appendix 9.2, under the column marked Bikaru (Bragge).) His Biame list also appears in this table. When compared to our data, Bikaru and Biame seem to be dialects of Piame, exhibiting cognate percentages of 29 and 33 respectively with Piame. Bragge's Bikaru list, however, shows only 22% cognate with our Pikaru 1. His Biame is also in a somewhat ambivalent position, since it is 33% cognate with our Piame and 25% cognate with Hewa 1. Bragge's Paka list is 47% cognate with Sumwari 1, indicating that it is most likely a dialect of Niksek.

Pikaru has a 9% observed probably cognate relationship with Piame, but 19% with Enga and 62% with Bisorio<sup>7</sup>. Pikaru's percentage of probable cognates with all other Sepik Hill languages compared in this survey (Hewa, Hiyewe, Niksek, Piame, Bahinemo, Bitara) are all low, ranging from 3% to 12%. This information all taken together indicates that Pikaru should be regarded as a dialect of Bisorio, a member of the Enga Sub-family of the West Central Family of the New Guinea Highlands Stock. Considering the monolingual elicitation situation for Pikaru, the true relationship with Bisorio is undoubtedly considerably closer than the observed 62%. Later information indicates the relationship may be above 90%.

#### 4.3 UPPER SEPIK STOCK

The omission of the words 'Upper Sepik Super-Stock' and 'Upper Sepik Stock/Iwam Family' prior to the listing of the Iwam language in Laycock (1973:20) make the classification a little hard to follow, but the classification table on page 74 makes it clear that Iwam (with two dialects) and Amal are the members of the Iwam Family within the Upper Sepik Stock, Wogamusin and Chenapian are members of the Wogamusin Family within the same stock, and Abau is a family-level member of the stock. This classification is set out more clearly in Laycock and Z'graggen (1975) and Wurm (1982).

The data from this report agree with the composition of the Wogamusin Family, with 35% probable cognates being observed between Wogamusin and Chenapian and a maximum of 10% between either of them and any other word list in the survey.

Chenapian is spoken by one village just off the Sepik River near the mouth of the Leonhard Schultze River. The population reported in Laycock (1973) as 187 has increased to approximately 250.

Wogamusin is spoken by nearly 400 people living in four hamlets: Biaka, Kubkain, Washkuk (also known as Washkuk Antap) and Yamanumbu.

At this time we also submit additional information on the relationship between May River Iwam and Sepik River Iwam, termed upriver and downriver dialects respectively by Laycock (1973). Sepik Iwam (downriver dialect) is spoken by people living in the villages<sup>8</sup> of Hauna (Yauenian), Oum No.1, Oum No.2, and Tauri. May River Iwam (the upriver dialect) is spoken by the people who live at Abagaisu, the May River Patrol Post, Pekwe, Painu, Aumi, Auni, Iabrem, Ibu, Wanium, Wanamoi, Auom, Iemomburi, Arai, Waniap, Burumai, and Mowi. Iniok is a language (or dialect) boundary between the two. The Iniok people can communicate reasonably well with Sepik River Iwam speakers and with some difficulty with Iwam speakers at Mowi. The probable cognate percentage in our data is 61%, which we feel is quite reliable, since it is based on lists which are

known to be quite accurate and is based on detailed investigation of both languages (dialects). Of the 51 Sepik Iwam verbal affixes, only 17 are recognisable as related to verbal affixes or particles in May River Iwam. The observed intelligibility between the two is relatively low. Everyone who knows Tok Pisin uses it instead of their vernacular for communication. Communication through the vernacular is quite difficult with the one exception of the people of Iniok, who live on the linguistic border and can communicate reasonably well with both groups.

The relationship between May River and Sepik Iwam is an example of the Lexical-grammatical skewing in which the cognate percentage with the noun and verb stems from such a word list as the one used in this survey is high enough to suggest at least some intelligibility, but the actual intelligibility is relatively low due to crucial grammatical differences in verbal affixation, pronouns and locatives.

The same skewing phenomenon occurs between two bordering languages in the Ndu Family, Iatmul and Manambu, although in this case there is no chain of mutual intelligible dialects, as in the case of Iwam. The intelligibility is equally as low as between May River and Sepik Iwam, even though the cognate percentages between the two with a word list similar to the one used here is well over 70%.

Whether the relationship between May River and Sepik Iwam is described as two divergent dialects or two closely related languages depends on one's definition of dialect. On the criterion of mutual intelligibility, they are definitely two different languages. On the criterion of being opposite parts of a dialect chain, they could be considered two dialects of a single language.

## 5. SOCIOLINGUISTIC DATA

In an attempt to understand the general sociolinguistic situation in the area under consideration, we here summarise our observations and the responses to the sociolinguistic questionnaires under four main topics: (1) knowledge of Tok Pisin and English, (2) attitude toward and use of vernacular (3) interaction with outside contacts and (4) level of formal education. This part of the report reflects the situation as observed in May 1983 except where otherwise indicated.

The knowledge of Tok Pisin in general varies directly with the amount of outside contact. If the knowledge of Tok Pisin could be quantified, the Wogamusin group would be at the high end of the scale, followed by Chenapian. At the other end would be the Piame people, who had two or three men beginning to learn Tok Pisin, and Pikaru, with no Tok Pisin speakers at all. All the other groups would lie somewhere in between, with the older people near the low end of the scale and the younger people and some middle-aged men nearer the upper end. A general characterisation of each group follows.

### WOGAMUSIN FAMILY

Wogamusin and Chenapian both have somewhat similar sociolinguistic situations. Both groups have a positive attitude toward their vernacular, which is very functional and is used freely along with Tok Pisin. Tok Pisin is well known by everyone except the very elderly. The Catholic mission school at Kubkain is an educational centre with 21 students from Kubkain, six from Washkuk, and 17 from Chenapian. Wogamusin is further advanced in education with many readers among the young people, some among the middle aged, and a few young men who have attended the University of Papua New Guinea. At Chenapian, off the main river, by contrast, several have finished standard

6. The people from both languages use the Tauri aid post, the Hauna trade store and occasionally the hospital at Ambunti. Their social contacts are within each group, between the two groups, and also with Hauna. Chenapian also has social contact with Oum 1 and Tauri. Wogamusin also reports social contact with Swagup.

#### LEONHARD SCHULTZE STOCK/PHYLUM

For every language group in this phylum, the vernacular is very functional and their attitude toward it is very positive.

The Yabio people have contact with several Saniyo villages, particularly Mapisi (for medical and store purposes) and Sowano. Several Yabio women have married into Saniyo villages. One half of the population at Sowano are Yabio speakers. Since Woswari has been nearly abandoned, there is little contact with any villages on the Leonhard Schultze River. Tok Pisin is spoken by all the middle aged and younger men. Four girls attended the Ambunti Akademi school but found it difficult because of their lack of knowledge of Tok Pisin. There are about six children who are semi-literate.

#### TUWARI

Tok Pisin is spoken by most of the men under 30 years of age and by some of the younger women. The others are beginning to learn it to some degree. There are no known literates, but a Tok Pisin school was planned for Sumwari in 1984.

The Tuwari people who live at Sumwari have contact primarily with just themselves and the Niksek people who live there with them. They also have occasional contact with the few Tuwari people who live at Niksek, and with the few Tuwari people who live at Akiapmin. The latter have primary contact with the two Duranmin villages of Siliambil and Siliam.

#### PAPI

The Papi people all know Tok Pisin to some degree except for the very oldest. The men and boys and some women know it quite well. There is no school in the area. There were only two Tok Pisin literates, both trained at Ambunti and the Baptist Mission School at Duranmin. There is some contact with a school at Aom, but no known students were identified. The people have contact with the mining company at the Frieda River airstrip for medical and store purposes. For social purposes they visit the May River Iwam villages of Waniam and the May River Patrol Post, Tafe (at the mouth of the Frieda River) and the few Papi speakers who live at Wasimai on the Leonhard Schultze River.

#### DURANMIN

The Duranmin people have some contact with the Tuwari people living at Akiapmin as well as frequent contact with the Telefol speakers and others who live at Duranmin airstrip and are involved in the Baptist Bible School. No intermarriage was reported, but the contact with the Telefol people has been sufficient to cause most of the younger generation to have learned Telefol. Tok Pisin is known to some degree by all but the older people. It is used somewhat along with vernacular. There are very few literates.

#### PAI AND WALIO

The Pai and Walio speakers form a similar sociolinguistic group. Tok Pisin is spoken to some degree by nearly everyone except the older generation and a few women. The people have contact

with each other and with Hauna for social contacts. They go to Hauna and Tauri for medical purposes and to Hauna for buying purposes. Until recently education has been minimal except for those who have gone to school outside, usually at Ambunti. Walio had 13 students in a local Tok Pisin school started by some Hauna men. A number of people can read Tok Pisin at Walio and eight of the Pai people are also literate in Tok Pisin.

The Walio people have had fairly close contact with the Pai people as evidenced by some intermarriage and also by the existence of a trade language called Yahipiri, which is known by most of the adult men in Walio, Pai, and some of the Sepik Iwam men from Hauna. This is evidence of prolonged and close contact between these three groups.

The Pai people have contact with some Saniyo speakers, primarily through the link of the village of Paru, which is on a tributary of the Wogamus River.

#### SEPIK HILL STOCK LANGUAGES

The Niksek people have fairly extensive contact with the Niksek and Tuwari people at Sumwari, which is in fact the area of origin of the majority of the Niksek people, according to their reports. There is also some contact with the Piame people when they come to visit Niksek, where two Piame men were in a Tok Pisin school. The only instance of intermarriage reported was one man marrying a Piame woman.

The South Seas Evangelical Church station at Niksek is the primary channel for meeting the educational, medical, buying, and spiritual needs of the Niksek people. In 1983 there were approximately 50 literates in Tok Pisin. There were also 39 students in English school in standard 1. All children, teenagers, and men under about 35 spoke Tok Pisin to some extent and the older men and some younger women were in the process of learning to speak it. The vernacular is very functional and their attitude toward it is positive. They use it freely along with Tok Pisin.

The Saniyo-Hiyewe people have extensive contact with groups outside their language boundaries. They have much and very free interaction with the Yabio villages of Lariaso and Harepi and with the western villages of the Hiyewe dialect, to such a degree that most of the male Yabio speakers over 15 years of age know the Hiyewe dialect. There is a fair amount of contact between Pai and several Hiyewe villages. Intermarriage is fairly common where Pai women marry Saniyo men. One Saniyo man has gained access to garden ground through his marriage to a woman from Pai. Sio has limited interaction with the village of Biaga at the junction of the April and Wogamus Rivers. Intermarriage has occurred but it is rare. As Pekapeki is separated from the rest of the language group by a vast swamp, it has practically no contact with the rest of the Saniyo language group. The people of Pekapeki have trading and social interaction with the people of Kakiru and downriver with the people of Bitara. They also have contact with the South Seas Evangelical Church station at Niksek (April River) airstrip.

Mapisi with a population of 126 is centred around Pacific Islands Ministries (formerly Ambunti Akademi) and the Mapisi (Maposi) airstrip. Marepute'e claims 100 people and is built around a South Seas Evangelical Church pastor and school. Sio, population 70, has a Seventh Day Adventist Church teacher and a small school.

Piame and Pikaru both have primarily a monolingual situation. Tok Pisin was so little known that it was almost impossible to elicit anything on the sociolinguistic questionnaire. Two or three Piame men were in the process of learning to speak, read, and write Tok Pisin at the South Seas Evangelical

Church station at Niksek. One Piame woman was married to a Niksek man. No other known cases of marriage outside these two language groups were found.

The extent of outside contact is uncertain except that we are sure there is considerable contact between the two groups. They worked together building the helicopter pad on which we landed. Also a few Piame men can communicate to some degree with some of the Pikaru men. Some Piame men reported that the Pikaru people do have fairly extensive contact with some of the Enga people of the south side of the Central Range.

## 6. WIDER RELATIONSHIPS

There is some evidence of a remote contact relationship between the languages of the Sepik Hill Stock and the Leonhard Schultze Stock. The following similar forms in Figure 4 may well be borrowings.

LEONHARD SCHULTZE STOCK			SEPIK HILL STOCK			
1.	Tuwari	<i>he pa'aru</i> <i>hetřo</i>	'knee' 'foot/leg'	Saniyo Hiyewe	<i>pa'aře</i> <i>řowe</i> ? <i>uporo</i> ( <i>řowe</i> )	'bone' 'knee' 'leg')
2.	Tuwari	<i>owa</i>	'older brother of man'	Saniyo	<i>owane</i>	'important person'
3.	Yabio	<i>nimau</i>	'eye'	Sumwari (Niksek)	<i>ni</i>	'eye'
4.	Tuwari	<i>tifə (lowe)</i> ( <i>lowe</i> is a noun classifier, so <i>tif</i> is here compared with Kapiano <i>diho</i> )	'belly'	Kapiano (Niksek)	<i>diho</i>	'belly'
5.	Pai	<i>ape</i>	'bird'	Sumwari (Niksek)	<i>ape</i>	'bird'
6.	Lexical item for 'white':					
	Walio	<i>wapuřə</i>		Sumwari (Niksek)	<i>wapoawe</i>	
	Woswari (Tuwari)	<i>wahu'ore</i>		Saniyo	<i>wapo</i>	
	Papi	<i>sauwařep</i>				
	Duranmin	<i>warepu</i>				

FIGURE 4: COMPARISON OF SIMILAR FORMS IN SEPIK HILL AND LEONHARD SHULTZE STOCKS

The only other evidence of a relationship between the two stocks are the adjectival suffixes which appear in Saniyo-Hiyewe of the Sepik Hill Stock which may be related to the adjectival classifiers in certain languages of the Leonhard Schultze Stock.

## 7. CONCLUSIONS

This study is an attempt to further clarify some of the lesser-known relationships among the languages of the Sepik Hill Stock and the Leonhard Schultze Stock which are spoken in the more inaccessible areas. Thus, it is one effort to follow the suggestions of Dye, Townsend and Townsend (1968) that 'further research by other scholars is needed to fill in the gap still remaining in the April headwaters area' and to 'establish the wider relationships of other newly reported languages in this area'.

The question of wider genetic relationships between the Sepik Hill Stock and the Leonhard Schultze Phylum/Stock Family is still problematic and open for further research.

## 8. NOTES

1. The list of published surveys includes Loving and Bass (1964), (Amanab Sub-district), Dye, Townsend and Townsend (1964) ('Sepik Hill' region), Healey (1964) and Wurm (1965:378-382) (Telefomin area), Laycock (1965b) and (1973) (region where Upper Sepik Stock languages are spoken), and the summary given in Wurm (1982:209-219). Laycock has also assisted in identifying a number of word lists from this region and in giving a preliminary classification of languages in this region as well as the other Sepik languages (Laycock 1973).
2. We gratefully acknowledge the help of all the administration personnel who cooperated and assisted in the survey project. Specifically we mention patrol officers K.U. Onipay and John Siau, who gave us access to the patrol reports and census figures of patrols in the areas covered by this survey.

We are also greatly indebted to missionaries Fritz and Sieglinda Urschitz of the South Seas Evangelical Church, who gave us a wealth of background information including the movements of many of the Niksek people. We also thank them for their hospitality during our time at Niksek (April River) airstrip.

We also thank Pastor Jacob at Niksek, Pastor Joshua who was stationed at Sumwari, and Pastor Luke who was stationed at Marepute'e, all of the South Seas Evangelical Church, for their help and encouragement during our time in their respective areas.

We acknowledge the help of the two Piame men who walked from the Niksek airstrip to the headwaters of the Niksek (April) River in order to organise a group of Piame and Pikaru people to make a helicopter pad for us to land in this very remote area.

We thank Steve Eelkema of Pacific Island Ministries for the use of their facilities at Mapisi for a storage and fuel depot.

We also appreciated the help of Debbie Ross, Sue Harris, Marilyn Laszlo, and Shirley Killoosky, all of the Summer Institute of Linguistics, who gathered word lists and sociolinguistic data from the villages of Walio, Kubkain, Chenapian, and Washkuk. We also thank Paul Vollrath of the SIL who supplied a number of word lists taken on a previous survey in the south-western part of the area covered by this survey.

We acknowledge the help of Bob Kennel of New Tribes mission for supplying us with a Bisorio word list.

There were many people whom we met on the survey who cooperated graciously in supplying word lists and answering many questions regarding their language and the sociolinguistic situation in their area – their help too we gratefully acknowledge.

Finally, we thank the large number of our colleagues and their families who did much of the detailed work of copying, typing and entering the many word lists in final form for comparison and for others who prepared these for counting and calculation by the computer at the Jungle Aviation and Radio Services Center in Waxhaw, North Carolina.

Transportation for this survey was primarily by helicopter, with the travel costs paid by the Sociolinguistic Survey fund of the Sepik Region of the Papua New Guinea Branch of the Summer Institute of Linguistics. We thank the Papua New Guinea SIL Aviation Department and helicopter pilots Bob Bartels and Bill Cristobal for their willingness to provide transportation even to the most inaccessible areas.

Finally we acknowledge the help of Bob Bugenhagen and Richard Loving of SIL for making helpful comments on an earlier draft of this paper.

3. See Bee and Pence (1962), Ezard (1977) and Oswalt (1971).
4. See Note No.2.
5. Bruce divided the Sepik Hill Stock/Family into three basic subgroups defined by common sound changes, diverging at three levels. The tree developed by Bruce (Figure 5) demonstrates which sounds change at each level. Note that Paka refers to the language which is here called Niksek.
6. We are indebted to Fritz Urschitz for calling this to our attention.
7. See Figure 6.
8. The spelling of Iwam villages used here is taken from Laycock (1973).

## 9. APPENDICES

### 9.1 LEXICOSTATISTIC RELATIONSHIPS

Figures 6 and 7 indicate the lexicostatistic relationships observed in this survey. Several other word lists from bordering language areas not visited on this survey (May River Iwam, Bisorio, Enga, Bahinemo) are also included in these tables for comparison.

Figure 6 shows the general relationships in the survey area and focuses on the sharper definition of two languages, Niksek and Bisorio, along with some of their varying dialects.

Figure 7 highlights the Leonhard Schultze Stock and the Wogamusin Family.

### 9.2 WORD LISTS

A set of word lists for some relatively little known languages is included in Figure 8. This list includes various dialects of Bisorio, including our two Pikaru lists, and the Bisorio list supplied by Bob Kennel of New Tribes Mission. Lists for Enga, Piame, and Hewa, three languages bordering the Bisorio-Pikaru area, are also included for comparison.

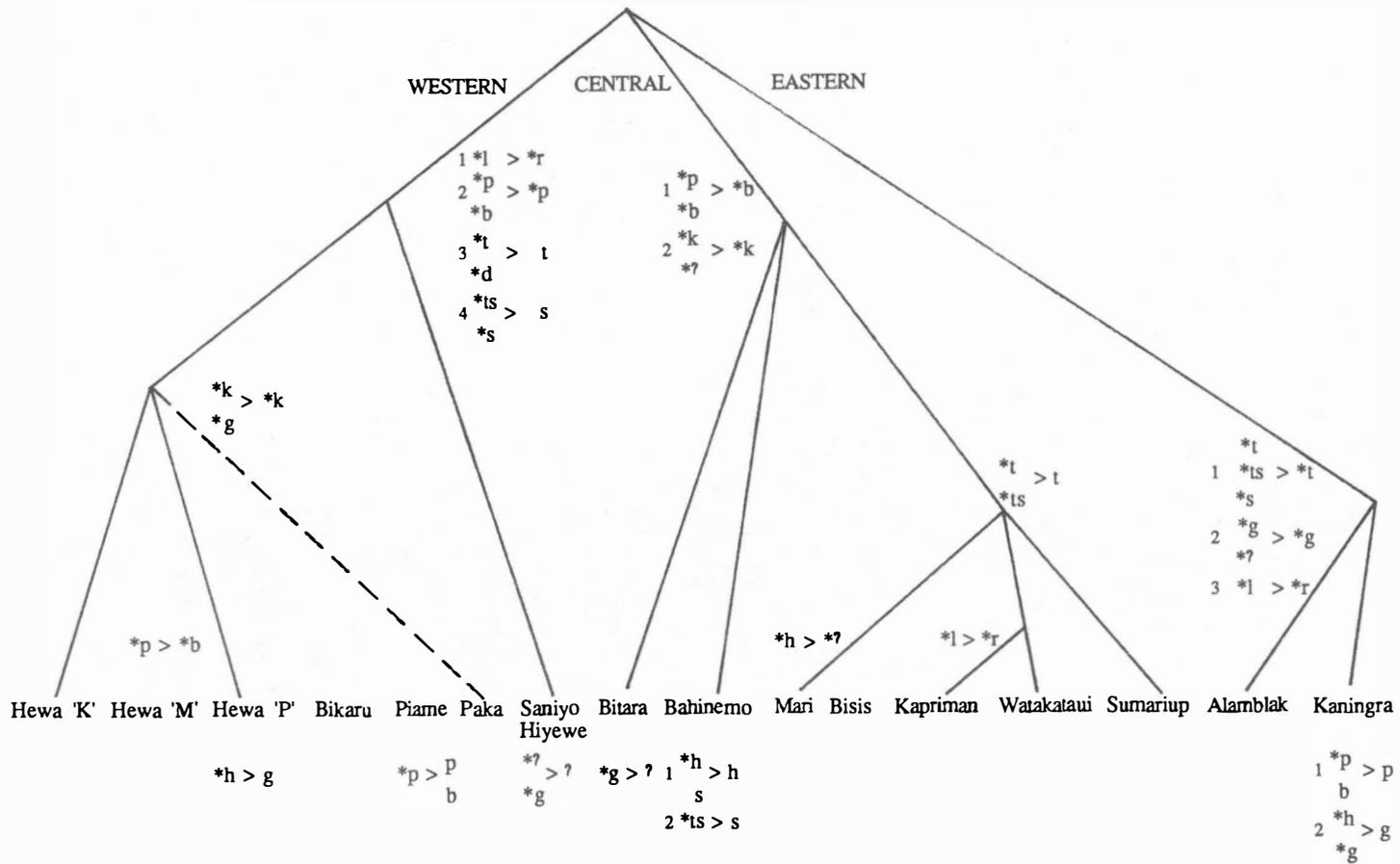


FIGURE 5: SEPIK HILL STOCK/FAMILY CLASSIFICATION BY LES BRUCE

Tuwari																					
29	Yabio 1 (Harepi)																				
29	69	Yabio (Yanamo)																			
24	24	30	Pai																		
20	26	27	43	Sinén																	
19	26	28	42	66	Walio																
6	9	9	6	6	3	Bitara															
8	11	12	5	6	7	23	Hewa 1 (Sisimin)														
7	11	11	5	5	6	22	71	Hewa 2 (Moribunim)													
5	6	6	6	6	5	20	14	15	Bahinemo												
7	6	6	3	3	4	28	33	36	17	Piame											
13	10	9	6	7	7	20	38	46	20	44	Kapiano										
11	7	7	5	5	5	29	36	38	23	51	67	Sumwari 1									
10	9	9	5	5	5	31	37	41	23	52	68	91	Sumwari 2 = Niksek								
9	8	8	5	5	5	31	39	39	22	50	62	88	91	Sumwari 3							
10	9	9	6	5	7	30	39	41	22	49	59	77	82	80	Meiyari						
9	8	8	5	5	6	28	36	39	24	50	64	87	90	86	77	Setiali					
8	7	7	5	5	5	27	36	39	23	53	61	81	84	82	72	84	Wiriyarife				
4	9	9	4	4	4	41	24	25	20	33	37	46	50	50	52	46	45	Pukapuki			
6	10	13	7	5	7	29	22	23	18	30	35	44	47	46	47	44	42	72	Hiyewe		
6	4	4	5	6	5	3	3	3	1	2	3	2	3	2	3	2	1	2	3	Enga	
4	3	4	4	4	3	5	5	8	4	7	8	8	8	8	8	8	7	5	4	21 Bisorio	
6	4	4	5	5	5	4	7	7	4	9	12	9	8	8	8	8	7	3	3	18 58 Pikaru 1	
5	3	4	5	5	5	4	9	8	3	9	12	10	9	9	9	9	8	4	4	19 62 74 Pikaru 2	
3	4	5	6	5	6	1	6	6	3	4	6	6	5	5	5	5	6	5	5	3	3 4 5 Duranmin
4	3	4	5	6	4	5	4	5	4	3	5	4	4	4	4	4	4	3	3	3	4 4 4 2 May River Iwam (Pekwai)
2	2	3	3	3	1	3	4	5	2	3	5	4	4	4	5	4	4	3	3	3	61 Sepik Iwam (Hauna)

----- indicates Leonhard Schultze Stock  
 \_\_\_\_\_ indicates family or sub-family  
 \_\_\_\_\_ indicates a single language with various dialects

FIGURE 6: GENERAL RELATIONSHIPS

Chenapien																	
35	Wogamusin 1 (Kubkain)																
35	98	Wogamusin 2 (Washkuk)															
5	6	6	1	Pai 1													
5	6	6	1	94	Pai 2												
3	3	3	1	44	39	Walio											
3	3	4	1	44	40	67	Sinan										
5	4	4	1	23	23	20	11	Tuwari 1 (Sumwari)									
2	3	3	1	15	15	15	13	47	Tuwari 2 (Akiapmin)								
3	4	4	1	22	18	26	26	29	17	Woswori							
6	2	2	1	9	7	6	6	13	10	10	Papi						
5	3	4	1	25	21	27	26	29	14	52	8	Yabio (Harapei)					
7	5	6	1	31	27	29	27	29	16	57	11	69	Yabio (Yanamo)				
10	9	9	5	4	5	5	10	8	8	6	8	8	Sumwari 3				
9	5	5	7	6	7	5	6	4	9	6	10	13	46	Hiyewe			
9	7	7	3	3	1	3	2	1	1	0	2	3	4	3	Sepik River Iwam (Hauna)		
10	7	8	5	5	4	6	4	2	1	1	3	4	4	3	61	May River Iwam*	
2	2	2	6	5	6	5	3	3	5	10	4	5	5	5	2	1	Duranmin

----- indicates Leonhard Schultze Stock

\_\_\_\_\_ indicates Wogamusin Family

\* (Pekwai)

FIGURE 7: LANGUAGES OF THE UPPER MIDDLE SEPIK, LEONHARD SCHULTZ AND FRIEDA RIVERS

English	Pikaru 1	Bikaru (Bragge)	Bisorio	Enga	Piame	Biami (Bragge)	Hewa 1
afternoon	<i>aribo</i>	<i>lowu</i>	-	-	<i>pasikofi</i>	<i>nu basi'o</i>	<i>moxuepi</i>
arrow	<i>somu</i>	<i>bawi</i>	-	-	<i>bawe</i>	<i>yenepi</i>	<i>inε</i>
ashes	<i>siaenusi</i>	<i>heme</i>	<i>seya mumu</i>	<i>(isare)pac</i>	<i>nakwai kaniwo</i>	<i>balui</i>	<i>ye une</i>
axe	<i>patafiya</i>	<i>awi</i>	-	<i>wua tombyuwa</i>	<i>+šuwəñi</i>	<i>solu</i>	<i>stnu</i>
baby	<i>wabi hogia</i>	<i>nauwa</i>	-	<i>nyana</i>	<i>mokuawo</i>	<i>awaiwo</i>	<i>ɣman baten</i>
back	<i>mosase</i>	<i>makia</i>	<i>mosale</i>	<i>mata</i>	<i>mekia</i>	<i>nabai</i>	<i>mogi</i>
bad	<i>osa</i>	<i>ali</i>	-	<i>koo</i>	<i>yeli kəñixa</i>	<i>foluwa</i>	<i>puw</i>
banana	<i>xai</i>	<i>kemeno</i>	<i>kxai</i>	<i>kyaya</i>	<i>kəne</i>	<i>kaikkaik</i>	<i>kan/kon</i>
belly	<i>eimuse</i>	<i>wafei</i>	<i>imu</i>	<i>tomba</i>	<i>di'εfi</i>	<i>iefe</i>	<i>ome'p</i>
big	<i>xakai</i>	<i>sebiēni</i>	<i>gauwa</i>	<i>andake</i>	<i>yaki khei</i>	<i>nyinori</i>	<i>tuwa</i>
bird	<i>nega</i>	<i>bamuwi</i>	<i>hega</i>	<i>yaka</i>	<i>ye'lia</i>	<i>siliawi</i>	<i>nuk</i>
bites, he	-	-	-	<i>nelyamo</i>	-	-	-
blood	<i>guguwa</i>	<i>ibiba</i>	<i>kukuba</i>	<i>king mange</i>	<i>matei</i>	<i>hasai</i>	<i>matai</i>
bone	<i>farari</i>	<i>heli holi</i>	<i>tgoboi</i>	<i>kuly</i>	<i>kəkəñə</i>	<i>pakala</i>	<i>bakali</i>
boy	<i>wabi</i>	<i>wabi</i>	-	<i>wane</i>	<i>məmenəfoni</i>	<i>mamansa biani</i>	<i>miyan baten</i>
breast	<i>aru (sε)</i>	<i>ami</i>	<i>adu</i>	<i>anju</i>	<i>mokhu</i>	<i>ane</i>	<i>mom</i>
black	<i>tuma</i>	<i>wonofu</i>	<i>duono</i>	<i>porombaiya</i>	<i>yeliawi</i>	<i>yeli</i>	<i>siřoguma/ teriyogume</i>
brother, (older)	<i>kauwari</i>	<i>pato</i>	<i>hambage</i>	<i>yangone</i>	<i>neiya</i>	<i>pato</i>	<i>ya/(ano)iya</i>
cassowary	<i>raima</i>	<i>bokaplai</i>	<i>kubono</i>	<i>lamya</i>	<i>wərou</i>	<i>molufu</i>	<i>wəlou/wəro</i>
chin	<i>kapina</i>	<i>aia</i>	-	<i>angapu</i>	<i>a yopakañi</i>	<i>ebili</i>	<i>ai</i>
claw	<i>hibose</i>	<i>lokolu</i>	-	<i>kimbu pambe</i>	<i>nətikap</i>	<i>salami</i>	<i>yokope tafupei</i>
cloud	<i>yagad</i>	<i>kotumai</i>	<i>mole</i>	<i>kopa</i>	<i>kətou</i>	<i>niakeli</i>	<i>səpu/nikeřa</i>

English	Pikaru 1	Bikaru (Bragge)	Bisorio	Enga	Piame	Biame (Bragge)	Hewa 1
dog	wena	maniau	weina	suwa	yabi	biso	yao/wəŋa
ear	hari	monu	hak	kale	peni	penia	aŋe
egg	gila	nou	hapa	kapa	yelia kaia	ko	ŋe
earth	keke	kati	yugege	yuu	napoŋi	bula	numəbəri
elbow	logo	loku	-	kyukyunaya	nəti'komu	odiolowoni	latiyam
eye	tada sɛ	manowa	dada	lenge	yinnafa	manaua	ingau/ngau
fat	ya	linopo	eŋenega	kapa	wauwuo	ŋe	wau
father	arowa	saiu	atowa	takano	aise	atoa	eta/aiya
fire	seya	sia	seya	isare	yeni'e	yeyi	yo
fish	raga	ibabufu	laka	kingi	kənə kabiai	ene	walɔ/metala
flying fox	xobi	ufuwin	-	kamye	iklau	kotiali	wen
foot	kai	kay	-	kimbu	nowa	woli	wari
forehead	wona	nihoholi	wono	enamba	mafŋei	lobo	map
frog	xodi	kadi	-	mugi	kodi	se'yala	uwal
girl	wida bogiya	taŋio	-	wanake	məmiyaŋi məməni moku'awo	miali mamane	ɣlmau/yəman
good	haila	boafe	haila	keyange	yelia kowane	u'e	piya
hair	yomodi edise	awe	yomoadi idi	kyawasi	kouŋinobo	uweli	obobuk/opopuk
hand	kise	lokolu	gi	kingi	nəti	fafulu	lati/amai
head	yomodise	kobagala	yomodi	kyawa	koubəkələ	fo linopo	ɔu/ou/o
heart	sirise	nabodada	-	mona	matei	yinafo	enap
house	ta	ka da	ata	anda	ake	ka	wai/wa'
knee	hagise	kha	-	wapambu	u'kwəti	toku	moiyow/watiyum

English	Pikaru 1	Bikaru (Bragge)	Bisorio	Enga	Piame	Biami (Bragge)	Hewa 1
knife	<i>yakiyafa</i>	<i>wele</i>	<i>tsitsiwano</i>	<i>wuo kema</i>	<i>misañi</i>	<i>misali</i>	<i>piclepe</i>
leaf	<i>yoho</i>	<i>yoku</i>	<i>yoxo</i>	<i>isa yoko</i>	<i>mekwa</i>	<i>me'o</i>	<i>me ofei</i>
leg	<i>sirise</i>	<i>monolu</i>	<i>giho</i>	<i>kimbu</i>	-	<i>wali</i>	-
lies down, he	<i>popo</i>	<i>fwai</i>	-	<i>palamo</i>	<i>məfu'aiwo</i>	<i>onui</i>	<i>seki</i>
long	<i>tosa</i>	<i>luluwau</i>	<i>dosa</i>	<i>londe</i>	<i>yelia meisa</i>	<i>maise</i>	<i>(nuk) meis</i>
louse	<i>mirise</i>	<i>nowmi</i>	<i>leima</i>	<i>oro</i>	<i>nəmi</i>	<i>maniu</i>	<i>onam</i>
man	<i>wabi se</i>	<i>mumani</i>	<i>gai</i>	<i>akali</i>	<i>məmini'nəni</i>	<i>lipofi</i>	<i>mobi/məbi</i>
many	<i>potori</i>	<i>umali</i>	<i>kxoyo</i>	<i>malu</i>	<i>ake/kəñisibəbe</i>	<i>daba dabo</i>	<i>(nuk) ketuwa</i>
meat	<i>xoa</i>	<i>yebala</i>	<i>kxowa</i>	<i>mena</i>	<i>ye'lia/y'eliya</i>	<i>ene</i>	<i>apau/apfao</i>
moon	<i>papume</i>	<i>pamwi</i>	<i>hana/babume</i>	<i>kana</i>	<i>pasiti'owa</i>	<i>selietie</i>	<i>əpu/yariaup</i>
morning	<i>pamabi</i>	<i>no nana wi</i>	-	<i>yangama</i>	<i>patšie</i>	<i>fumi'a</i>	<i>selito</i>
mother	<i>mauwa</i>	<i>miu</i>	<i>mauwa</i>	<i>endangi</i>	<i>mio</i>	<i>mauwa</i>	<i>ma</i>
mouth	<i>habuse</i>	<i>ai</i>	<i>habulu</i>	<i>nenge kata</i>	<i>a'ya</i>	<i>ebeli</i>	<i>pile</i>
name	<i>howasu</i>	<i>wapi</i>	<i>tbi</i>	<i>kingi</i>	-	<i>pafe</i>	<i>wi</i>
neck	<i>masasi</i>	<i>maisa</i>	-	<i>pendoko</i>	<i>ka'lami</i>	<i>lo'o</i>	<i>ese/simeni</i>
net bag	<i>nou</i>	<i>koa</i>	-	<i>nyuu</i>	<i>ko</i>	<i>oho</i>	<i>ou</i>
new	<i>oisawi</i>	<i>keke</i>	<i>kxado</i>	<i>enenge</i>	<i>ake/akutu</i>	<i>nebeli</i>	<i>atapene</i>
night	<i>ori</i>	<i>nu yali yau</i>	<i>uwele</i>	<i>kukwa</i>	<i>pasime</i>	<i>nubaio</i>	<i>geliaku</i>
nose	<i>towise</i>	<i>waka</i>	<i>dowi</i>	<i>gyeε</i>	<i>keřemi</i>	<i>kalemi</i>	<i>kogi</i>
old	<i>petei</i>	<i>bete'ifio</i>	<i>madi</i>	<i>wambarae</i>	<i>akelmeisi</i>	<i>wolio</i>	<i>petepea</i>
old man	<i>kas kei</i>	<i>madi</i>	-	<i>akali alemo</i>	<i>bəubiy'eipa</i>	<i>luwaipa</i>	<i>e'patu</i>
old woman	<i>rira kose kei</i>	<i>maniaru</i>	-	<i>enda endemo</i>	<i>məmiyařuyeipa</i>	<i>iawane</i>	<i>lalitu</i>

English	Pikaru 1	Bikaru (Bragge)	Bisorio	Enga	Piame	Biama (Bragge)	Hewa 1
one	<i>hubiya</i>	<i>mai'i</i>	<i>hapila</i>	<i>mendaki</i>	<i>mekwa</i>	<i>pi'ofi</i>	<i>ᵗabagati</i>
pig	<i>ya</i>	<i>ya</i>	<i>manalya</i>	<i>mena</i>	<i>a'kaifo/fo</i>	<i>fo</i>	<i>apfao/apau</i>
rain	<i>kegi</i>	<i>lelawi</i>	-	<i>apu</i>	<i>nou</i>	<i>sobu</i>	<i>no/nu meiyai</i>
rat	<i>sibo</i>	<i>iapa</i>	<i>yanema</i>	<i>wui</i>	<i>wamo</i>	<i>sebo</i>	<i>wantu</i>
red	<i>mofi</i>	<i>mifiai</i>	<i>mopi</i>	<i>kone</i>	<i>yelia wapo'awe</i>	<i>lokuwawa</i>	<i>məbiyeima</i>
road	<i>yoto</i>	<i>yu</i>	<i>yodo</i>	<i>kata</i>	<i>yui</i>	<i>yo</i>	<i>ɾone</i>
root	<i>siya feri</i>	<i>pilio</i>	<i>ppu</i>	<i>isa pingi</i>	<i>youwei</i>	<i>menana</i>	<i>menap/manapi</i>
sand	<i>keci</i>	<i>noku</i>	<i>iba kedi</i>	<i>kee</i>	<i>kařinei</i>	<i>ki</i>	<i>ɔpɔpile</i>
short	<i>sobngiya</i>	<i>lapu</i>	<i>tsobagiya</i>	<i>muu</i>	<i>yelia nɔpo</i>	<i>ifiau</i>	<i>abiya/kɔptu</i>
shoulder	<i>konowa</i>	<i>yoko</i>	<i>kanowa</i>	<i>lange</i>	<i>kələ</i>	<i>ara</i>	<i>ale</i>
sister, older	<i>wida xa hai</i>	<i>toli</i>	<i>humanege</i>	<i>kakinyi</i>	<i>tolia'no</i>	<i>lomoto</i>	<i>mo'you/watium</i>
sits, he	<i>haruno</i>	<i>amaki fuo</i>	<i>bagama badamo</i>	<i>petamo</i>	<i>mərouwa</i>	<i>fufwai</i>	<i>isai</i>
skin	<i>hapaise</i>	<i>kha</i>	<i>habai</i>	<i>yanenge</i>	<i>kabei</i>	<i>toku</i>	<i>nati</i>
small	<i>hogiya</i>	<i>ofo</i>	<i>hogila</i>	<i>kuki</i>	<i>yaki nioni</i>	<i>ei</i>	<i>(nuk) pətene</i>
smoke	<i>papahu</i>	<i>sobudaye</i>	<i>seya mosu</i>	<i>(isare) sukwa</i>	<i>yeisi</i>	<i>watamasoye</i>	<i>yese</i>
snake	<i>mari</i>	<i>hanou</i>	<i>tsitstwano</i>	<i>kau</i>	<i>afeka</i>	<i>poni</i>	<i>mei</i>
stands, he	<i>kaiegiu</i>	<i>kinal</i>	<i>igiyamo</i>	<i>karamo</i>	<i>kina ki'awi</i>	<i>niwo</i>	<i>saiyapu</i>
star	<i>hareda</i>	<i>yeli</i>	<i>hadeda</i>	<i>mbui</i>	<i>youtafo</i>	<i>pa'i</i>	<i>nikenenaf</i>
stone	<i>hana</i>	<i>baki</i>	<i>hana</i>	<i>kana</i>	<i>yaki</i>	<i>yawi</i>	<i>pai</i>
sugar cane	<i>heila</i>	<i>nalioa</i>	-	<i>lyɛɛ</i>	<i>situ</i>	<i>situ</i>	<i>aria/ariya</i>
sun	<i>yagi</i>	<i>mauwuru</i>	<i>yage</i>	<i>neta</i>	<i>yeyi</i>	<i>tenia</i>	<i>yai/baiyeyi</i>
sweet potato	<i>weriya</i>	<i>panae</i>	-	<i>kwai</i>	<i>a'koi</i>	<i>nikiau</i>	<i>amou/amu</i>

English	Pikaru 1	Bikaru (Bragge)	Bisorio	Enga	Piame	Biami (Bragge)	Hewa 1
tail	<i>yɛrise</i>	-	<i>yede</i>	<i>konali</i>	<i>ɔ'yəni</i>	-	<i>wau isou</i>
taro	<i>sawi</i>	<i>hebo</i>	-	<i>maa</i>	<i>sawi</i>	<i>mowa</i>	<i>saw/tabrimo</i>
tooth/teeth	<i>nesi</i>	<i>nei</i>	<i>ne</i>	<i>nenge</i>	<i>pi'nafa</i>	<i>bi'ei</i>	<i>pilenaf ~ p'renap</i>
thumb	<i>you</i>	<i>yau</i>	-	<i>kingi mange</i>	<i>nɔtipi'kɔfi</i>	<i>bofi</i>	<i>nami/awaiobei</i>
tomorrow	<i>tadi benabi</i>	<i>kinelo</i>	-	<i>takya</i>	<i>tuki</i>	<i>nelilio</i>	<i>woto</i>
tongue	<i>keda</i>	<i>soləwi</i>	<i>geda</i>	<i>kekenge</i>	<i>səɛfa</i>	<i>salifei</i>	<i>tol</i>
tree	<i>siya</i>	<i>yinu</i>	<i>tseyā</i>	<i>isa</i>	<i>me</i>	<i>mei</i>	<i>me</i>
two	<i>rabo</i>	<i>ho'i</i>	<i>damo</i>	<i>lama</i>	<i>wəki</i>	<i>lumeli</i>	<i>iyai</i>
vine	<i>pu</i>	<i>so</i>	-	<i>puu</i>	<i>you'wei</i>	<i>iuwei</i>	<i>lei/lemaf</i>
walk, he	<i>yorohu</i>	<i>fasi</i>	-	<i>pelyamo</i>	<i>fisi</i>	<i>miwo</i>	<i>pani pisi</i>
wallaby	<i>wesina</i>	<i>wasin</i>	-	<i>mapona</i>	<i>akai pəsi</i>	<i>pasi</i>	<i>pəsi/pes</i>
water	<i>zewa</i>	<i>mawu</i>	<i>iba</i>	<i>ipwa</i>	<i>a'sei</i>	<i>sai</i>	<i>ɔci ate</i>
white	<i>yage fauwati</i>	<i>teli</i>	<i>tsuba</i>	<i>kakepame</i>	<i>yelia məfi' yawi</i>	<i>yenowiwa</i>	<i>waume</i>
wind	<i>howusu</i>	<i>filikai</i>	<i>pəbato</i>	<i>porambaiya</i>	<i>wisərsi</i>	<i>wisesi</i>	<i>nupuwi</i>
wing	<i>papaga</i>	<i>pinafa</i>	<i>babaga</i>	<i>papake</i>	<i>yeř kineiwiu</i>	<i>pibi</i>	<i>koruwa</i>
woman	<i>wida</i>	<i>momiaru</i>	<i>wida</i>	<i>enda</i>	<i>məmi'yařu</i> <i>ye'lia</i>	<i>aweni</i>	<i>ruwa/luwa</i>
yam	<i>hemi</i>	-	-	<i>amu</i>	<i>kařu</i>	-	<i>akoweola</i>
yesterday	<i>pənabi</i>	<i>nelika</i>	-	<i>kwaka</i>	<i>nɔfi</i>	<i>ufai</i>	<i>woto</i>

FIGURE 8: DIALECTS OF BISORIO AND CONTIGUOUS LANGUAGES

9.3 GENERAL SOCIOLINGUISTIC SITUATION INTERVIEW

Gavman i save kolim wanem nem long ples bilong yupela? \_\_\_\_\_

Yupela yet i kolim wanem nem long ples bilong yupela? \_\_\_\_\_

A. IMPACT OF EXTRA-TRADITIONAL FACILITIES

1. Ol manmeri bilong dispela ples i save go long wanem haus sik?  
 Planti i save go o sampela tasol?  
 Yupela save go long haus sik bilong stretim wanem kain sik?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2. Ol manmeri bilong dispela ples i save baim ol samting long wanem tret stua?  
 Yupela save baim ol wanem kain samting?  
 Planti manmeri inap long baim samting, o sampela tasol inap?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3. Ol manmeri long dispela ples i save go long wanem lain lotu?  
 Ol i save lotu we?  
 Wanem lain lotu long hia i gat planti manmeri i save go long em?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. Ol pikinini bilong dispela ples i save go long wanem skul?  
 Haumas pikinini man i save go long ol dispela skul?  
 Haumas pikinini meri i save go long skul?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. I gat wanpela rot ka i stap klostu long dispela ples? Em i stap we?  
 I gat wanpela ples balus i stap klostu long hia? Em i stap we?  
 Ol moto kanu i save kam klostu long dispela ples o nogat?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

6. Ol manmeri bilong dispela ples i gat wanem rot bilong painim mani?  
 Wanem kain bisnis em i nambawan bisnis ol manmeri long hia i save wokim?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

7. I gat sampela lain i save lusim ples na i go painim wok long taun o stesin?  
 Wanem lain ol i mekim olsem?  
 Ol i save go long wanem ples?

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8. I gat manmeri bilong arapela hap i kam stap hia or nogat?

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9. Ol dispela lain i lusim ples na i go stap long narapela hap, ol i save kam bek long ples long wanwan krismas or nogat?

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10. Long lusim asples hia, yu ting dispela pasin em i gutpela o em i nogut?  
 Yu stori liklik long as tingting bilong yu long dispela pasin.

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**B. SOCIAL INTERACTION PATTERNS**

(Answers to questions 1-3 are to be entered in the chart below.)

1. Ol manmeri bilong dispela ples i save go raun long wanem ples oltaim?  
 Haumas taim ol inap i go?
2. Bilong wanem ol manmeri i save go long ol dispela ples tasol?
3. Kolim nem bilong ol stesin na ol taun yupela i save go raun long ol?

Nem bilong ol ples na stesin	Haumas taim ol inap go?	Bilong wanem as tru ol I save go
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(Answers to questions 4-11 should be entered in the chart below.)

4. Ol manmeri bilong wanem ples ol i save askim yupela long go long singsing bilong ol?
5. Wanem kain samting yupela save baim long ol arapela ples?
6. Ol manmeri bilong arapela ples i save baim wanem samting long yupela, na ol lain bilong wanem ples tru?
7. Ol meri bilong yupela i bin kam long wanem lain ples?
8. Yupela save baim ol meri o nogat?
9. Ol meri bilong ples bilong yupela i save go marit long wanem arapela ples?
10. Ol i save givim yupela pe bilong meri o nogat?
11. Long ol ples yupela i bin kolim nem bilong ol pinis, wanem tok ples yupela i save mekim taim yupela i go long ol?

Nem bilong ol ples	Ol singsing
	Bilong baim samting
	Wanem samting yupela save baim long ol?
	Bilong salim samting
	Wanem samting yupela save salim long ol?
	Bilong maritum meri?
	Yupela mas baim ol meri o nogat?
	Ol meri bilong yupela i save marit we?
	Yupela save kisim pe long ol o nogat?
	Yupela i save mekim wanem tok ples?

12. Ol manmeri bilong ples bilong yupela i save wok bung wantaim ol arapela ples o nogat? Olsem long wok bilong misin, na gavman, bilong didiman, bilong skul, na haus sik no ol kain wok olsem?  
Wanem kain wok tru, na wantaim wanem ples?

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C. REPORTED DIALECT DIFFERENCES

1. Tokim mi long wanem ol ples i save mekim tok ples wankain tru olsem yupela.  


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2. Nau tokim mi long wanem ol ples i save mekim tok ples wankain olsem yupela, tasol tok bilong ol i arakain liklik?  


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3. Nau tokim mi long wanem ples i save mekim wankain tok ples olsem yupela, tasol ol i toktok arakain tru, tasol yupela i ken harim na i klia.  


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4. Wanem ples i save mekim wankain tok ples olsem yupela, tasol taim ol i toktok ol i save mekim arakain tru na hariap, olsem yupela i no inap harim gut olgeta toktok ol i mekim?  


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5. Wanem ples i stap klostu tru long yupela tasol ol i save mekim narakain tok ples olgeta?  


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9.4 LANGUAGE USE AND ATTITUDES QUESTIONNAIRE

A. REPERTOIRES/LANGUAGES KNOWN

Languages to be considered: Vernacular, Lingua Franca, Church Languages, English, other vernaculars if significant numbers of people are bilingual in them.

	Man 1	Man 2	Man 3	Man 4
Haumas krismas bilong yu?				
Man o meri?				
Wanem tok ples yu save tru long em?				
Inap toktok?				
Inap ritim?				
Inap raitim?				
Your evaluation of their abilities	<hr/> <hr/> <hr/>			

Haumas krismas bilong  
papa bilong yu?  
Wanem tok ples papa bilong  
yu i save tru long em?  
Inap toktok?  
Inap ritim?  
Inap raitim?

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Haumas krismas bilong  
mama bilong yu?  
Wanem ol tok ples mama  
bilong yu i save tru long em?  
Inap toktok?  
Inap ritim?  
Inap raitim?

--	--	--	--

Haumas krismas bilong  
meri bilong yu?  
Wanem ol tok ples meri  
bilong yu i save tru long em?  
Inap toktok?  
Inap ritim?  
Inap raitim?

--	--	--	--

Haumas krismas bilong ol  
brata bilong yu?  
Wanem ol tok ples brata  
bilong yu i save tru long em?  
Inap toktok?  
Inap ritim?  
Inap raitim?

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Haumas krismas bilong  
ol susa bilong yu?  
Wanem ol tok ples susa  
bilong yu i save tru long em?  
Inap toktok?  
Inap ritim?  
Inap raitim?

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Haumas krismas long  
 pikinini man bilong yu?  
 Wanem ol tok ples pikinini  
 man bilong yu i save tru  
 long em?  
 Inap toktok?  
 Inap ritim?  
 Inap raitim?

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Haumas krismas bilong  
 pikinini meri bilong yu?  
 Wanem ol tok ples pikinini  
 meri bilong yu i save tru  
 long em?  
 Inap toktok?  
 Inap ritim?  
 Inap raitim?

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**B. LANGUAGE FUNCTIONS**

1. Olgeta taim yupela toktok wantaim ol lapun man, yupela save mekim long wanem tok ples? \_\_\_\_\_
2. Olgeta taim yupela toktok wantaim ol lapun meri, yupela save mekim long wanem tok ples? \_\_\_\_\_
3. Olgeta taim yupela toktok wantaim ol yangpela man, yupela save mekim long wanem tok ples? \_\_\_\_\_
4. Olgeta taim yupela toktok wantaim ol yangpela meri, yupela save mekim long wanem tok ples? \_\_\_\_\_
5. Olgeta taim yupela toktok wantaim ol liklik boi, yupela save mekim long wanem tok ples? \_\_\_\_\_
6. Olgeta taim yupela toktok wantaim ol liklik meri, yupela save mekim long wanem tok ples? \_\_\_\_\_
7. Taim yupela i kros yupela save mekim long wanem tok ples? \_\_\_\_\_
8. Yupela save mekim stori tumbuna long wanem tok ples? \_\_\_\_\_
9. Yupela save kaunim namba long wanem tok ples? \_\_\_\_\_
10. Yupela save beten long wanem tok ples? \_\_\_\_\_

**C. LANGUAGE SITUATIONS**

1. Taim bilong mekim toktok bilong lokol gavman, yupela mekim long wanem tok ples? \_\_\_\_\_
2. Yupela mekim tumbuna singsing long wanem tok ples? \_\_\_\_\_

3. Taim yupela stap long ol singsing, wanem tok ples yupela save mekim? \_\_\_\_\_
4. Taim yupela i go wok long gaden wantaim arapela manmeri, wanem tok ples yupela save mekim? \_\_\_\_\_
5. Long taim yupela toktok nating wantaim ol pren, yupela mekim long wanem tok ples? \_\_\_\_\_
6. Wanem kain tok ples yupela save mekim long haus bilong yu yet? \_\_\_\_\_
7. Wanem kain tok ples yupela save mekim long maket? \_\_\_\_\_
8. Wanem ol tok ples yu bin lainim pastaim? \_\_\_\_\_  
     bihain? \_\_\_\_\_  
     bihain gen? \_\_\_\_\_
9. Long haus lotu
  - a. Ol i autim tok long wanem tok ples? \_\_\_\_\_
  - b. Ol i beten long wanem tok ples? \_\_\_\_\_
  - c. Ol i singsing long wanem tok ples? \_\_\_\_\_
  - d. Sapos wanpela man bilong longwe ples i autim tok, ol i save tanim tok, o nogat? \_\_\_\_\_

D. AESTHETICS/APPROPRIATENESS/UTILITY

1. Sapos yu laik ol lain bilong yu i harim toktok bilong yu klia tru, yu ting yu mas mekim long wanem tok ples? \_\_\_\_\_
2. Wanem kain tok ples yu mas save sapos yu laik i go painim wok? \_\_\_\_\_
3. Long taim bilong autim tok bilong Jisas, wanem tok ples i gutpela bilong ol lain i ken klia olgeta? \_\_\_\_\_
4. Yu ting God papa i laikim wanem tok ples? \_\_\_\_\_
5. Wanem tok ples em i gutpela long taim bilong toktok long ol samting ol tumbuna i save bihainim, olsem masalai o sanguma samting? \_\_\_\_\_
6. Long taim bilong singsing wanem tok ples em i gutpela long mekim tumbuna singsing? \_\_\_\_\_
7. Wanem tok ples yu ting ol tisa i mas mekim long skul? \_\_\_\_\_
8. Wanem tok ples ol tisa i mas skulim ol pikinini long skul? \_\_\_\_\_
9. Wanem tok ples i gutpela tru long kisim save, sapos yu save rit na rait long em? \_\_\_\_\_
10. Wanem ol tok ples yu ting yu laik save long em? \_\_\_\_\_
11. Yu laik ol pikinini bilong yu bai i ken save long ol wanem tok ples? \_\_\_\_\_
12. Yu ting tok ples bilong yu i gutpela olsem tok Pisin/Motu o tok Inglis, o nogat? \_\_\_\_\_

E. LANGUAGE CHANGE

1. Long taim ol pikinini i kamap bikpela yu ting bai ol i save moa long wanem tok ples? \_\_\_\_\_

2. Bihain, bihain tru, yu ting bai ol manmeri i ken holim tok ples bilong ol, o ol i mas lusim tok ples bilong ol na mekim tok Inglis tasol, o tok pisin, o narapela tok ples tasol?  
 Wanem tingting bilong yu stret long dispela?  
 Tok ples bai ol i ken holim, o em bai i pinis?
- 
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