

Matukar-Panau: A case study in language revitalization*

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...we must do some serious rethinking of our priorities, lest linguistics go down in history as the only science that presided obliviously over the disappearance of 90% of the very field to which it is dedicated.

-Michael Krauss (1992), "The world's languages in crisis" in *Language* 68 (1):10

Abstract

This case study in language revitalization focuses on the Oceanic language of Matukar-Panau from Papua New Guinea. Recent work on a talking dictionary of Matukar in Swarthmore College's Laboratory for Endangered Languages Research and Documentation as well as the development of an orthography and first book in Matukar will be evaluated in terms of the viability of Matukar in the 21st century.

I will first present the sociolinguistic background of Matukar in order to examine the extent and cause of Matukar's endangerment. Categories will include the history, geography, government recognition of, and demography of, Matukar and Matukar villagers (Tsunoda 2005). An emphasis will be placed on the reaction of the ethnic group of Matukar villagers to the growing dominance of Tok Pisin and the corresponding language shift (Dorian 1981).

Next, I will examine the language endangerment phenomenon and define language death. In order to classify Matukar on a scale of language endangerment, I will describe Michael Krauss's (2007) and Joshua Fishman's (1991) classification systems of language vitality. I will then present Matukar's ratings based on UNESCO's document on language vitality and endangerment (2003). These systems provide a quantitative way to identify the characteristics of a dying language in areas such as age of speaker population, domains of language use, and availability of written material.

Following this assessment of the endangerment of Matukar, I will then argue for revitalization from both a linguistic and an extralinguistic point of view. I will first use lexical, phonetic, and phonological data to show Matukar's linguistic importance. From an extralinguistic point of view, I will identify domains of extralinguistic knowledge encoded in the linguistic framework (Harrison 2007). The traditional knowledge base such as multiple words relating to coconut use and canoe construction will be highlighted, as well as a link between language revitalization and preservation of Matukar culture and identity.

After establishing the importance of Matukar revitalization, I will evaluate the current Matukar revitalization process. I will include a description of the recently invented orthography and newly written book in Matukar (Raward 2010), as well as the online talking dictionary project currently containing approximately 3,000 words and phrases of the Matukar lexicon. This evaluation will also introduce the need for language planning and propose ideas for continued support of the Matukar community (Hinton 2001).

My case study of Matukar revitalization efforts is described with advocates for language revitalization and members of endangered language populations in mind. It is hoped that this evaluation will be of use to future revitalization efforts in the Matukar community.

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0.0 Introduction

Thousands of languages around the world are found in rural areas and are spoken by villagers immersed in their traditional lifestyles. These language communities, consistently overshadowed by majority language speakers of a country's official language or lingua francas, have experienced negative language attitudes from both outside and within the community. Before many of them are now two choices: shift to the dominant language and lose cultural heritage and identity, or salvage language domains for their language and become bilingual (and in some cases polylingual, depending on the number of lingua francas). If we wish to keep endangered languages, we must ask: what does a modern language community look like?

In Papua New Guinea's Matukar-Panau language community, a struggle exists for relevancy in the face of urbanization and modern ideals. The community can no longer hold onto Matukar purely because of tradition. In this case study of Matukar's situation and revitalization efforts, we will see the importance of new language domains and fundamental changes on the cultural level. At the root, preservation efforts focus on the intangible- unconscious language attitudes influencing Matukar's youngest generation. Whether it is a talking dictionary launched on the internet, a story emphasizing language advocacy, or a new orthography that can be used in multiple domains, revitalization calls for the traditional lexicon and ways of speech to be seen in a new light. This purpose defines the process of language planning and determines whether Matukar will successfully counteract language shift in the current generation.

1.0 Sociolinguistic sketch of Matukar

We first place Matukar in context by describing its background using various factors that have a strong influence on the state of any language (what Tsunoda [2005] calls the ecology of language): geography, demography, culture, linguistics, language attitudes, history, government (language policy), economics, education. An examination of Matukar in terms of these factors will give us facts needed to assess the endangerment of the language.

1.1 Geography

The Matukar people are located in the Sumkar District of Madang Province of Papua New Guinea, at $4^{\circ}54'0''$ south of the equator and $145^{\circ}46'59''$ east of the Prime Meridian (Figure 1). Matukar territory is situated on the coast of the Bismark sea, 4 km north of the Surumarang River (DUNC 2009). The territory is isolated and rural, surrounded by forests of palm, betel and coconut trees, with the nearest town being 40 miles south (Madang, population 30000).



Figure 1. Matukar village is located on the northwestern coast of Papua New Guinea (WALS Online, 2008)(Google Maps).

1.2 Demography

There are 600+ Matukar villagers (Harrison and Anderson 2009b) and according to Ethnologue 434 of those are speakers of Matukar. Because the population is concentrated in at most two villages, it can be classified as dense and monoethnic (Pacific islander). Speakers of both sexes are found, but in regards to ages villager Rudolf Raward says, “Children under the age of 10 would never speak the language at all.” (Raward 2009) However, there may be a difference in speaker proficiency according to speaker clans. Between the two known clans, Tamaten and Bantebun (sp?), the most proficient speakers are from the Bantebun clan while in the Tamaten the language is dying out. According to Raward, this may be a result of speakers from the Tamaten clan being increasingly attracted to visiting the bigger towns and cities (Raward 2009). Most fluent speakers are in the parental generation or older (Mathieu-Reeves 2010). The community is not nomadic, choosing instead a static agricultural lifestyle.

1.3 Culture

The Matukar way of life has incorporated some degree of modern culture as evidenced by the clothing and tools of the modern-day village. Males generally wear western-style clothes, and although women still tend to wear brightly colored skirts and tops, it is not uncommon to see jean skirts and the accompanying flip-flops. Modern tools such as plastic and aluminum bowls for cooking, wheelbarrows and shovels, and motor vehicles are also common (Harrison and Anderson 2009b, 2010).

Yet the villagers still practice many traditional activities, such as the making of brightly colored bags or *bilums*, the use of canoes and traditional fishing spears, and cooking over open fires. Houses are still thatched and built from wood of the sago tree, and main roads through the village are unpaved. Traditional ceremonies are also observed in which villagers put on a *sing-*

sing-like performance or religious ritual. In fact, when villager Rudolf Raward departed for language revitalization workshops in the U.S., a ceremony was held with men drinking kava- a plant with sedative properties- and consulting the spirits of their ancestors (Mathieu-Reeves 2010).

1.4 Linguistics

1.4.1 Classification

Matukar is in the Oceanic group of the Austronesian language family. There are at least 500 Oceanic languages in Oceania, encompassing ethnic territories from Indonesia to Easter Island. The Oceanic languages of coastal New Guinea are found on the outer edge of this area, and most have a small population of speakers. Since Matukar is located in northern New Guinea, it is further classified into the Bel Vitiaz family. (Lynch 2002)

1.4.2 History

The history of the Matukar language is partly reflected in the villagers' name for Matukar: *Panau* or *give me*. According to village elder Joe Mowab, Matukar ancestors arrived on the New Guinean coast by boat to find native people already there. Therefore, their first words in order to acquire land from the locals were *give me* (Mowab 2009).

Historical linguists agree with this story of a later arrival of Proto-Oceanic-speaking-peoples to the territory of Papuan language speakers on coastal New Guinea. Origins of Oceanic languages on northeast New Guinea have been traced to an eastwards migration from Taiwan, with the seafaring Oceanic peoples arriving on already-inhabited coastal territory circa AD 500 (Lynch 2002). Because of the difficulty of securing territory defended by the locals, as well as exposure to diseases such as malaria, these peoples did not migrate far from their coastal landing and seem instead to have adopted a static lifestyle on what land they were able to acquire from the locals. The amount of Oceanic languages on the coast and islands of New Guinea (170

Oceanic languages, compared to the nearly 700 Papuan languages) and coastal territorial positions supports this later migratory theory. (Lynch 2002)

Ancestors of the Matukar speakers most likely landed near the Vitiaz strait, an area which separates mainland New Guinea from nearby large islands such as New Britain, and where a most diverse collection of Oceanic languages is found. Although they moved northwards towards Cape Croisilles, they would still have had the opportunity to keep in contact with speakers of other Oceanic languages in the Bel family. Therefore, although Matukar developed from its Proto-Oceanic roots as the speakers found an isolated territory, the incredible diversity of the region makes it likely that speakers were fluent in several contact languages. (Lynch 2002)

Until the arrival of Europeans, this pattern of bilingualism did not endanger vernaculars because of the great value that communities placed on their own language as opposed to lingua francas (Romaine 1992). As explained below (1.5), vernaculars are threatened with language shift only when an outside language garners more prestige.

1.4.3 Matukar and the Oceanic grouping: comparative word lists

One helpful way to initially observe lexical characteristics of the Matukar language as compared to other Oceanic languages is through basic lexicostatistical method. Lexicostatistics is a linguistic technique that attempts to date language change and describe relation between languages using historical comparative linguistics to analyze word lists and feature changes. This technique has been critiqued by linguists as not sufficiently accounting for borrowings between languages, as well as overly extrapolating genetic similarities on the basis of little concrete knowledge (Geisler and List 2009). Additionally, methods have been found to be extremely subjective, and lack of accurate data and ability in researched languages accounts for a wide margin of error. Therefore, the technique is considered unreliable if the goal is to reconstruct a

proto-language or hypothesize dates for historical language shift (Geisler and List 2009).

However, in this paper I will use word lists to put the relatively undocumented language of Matukar in context with other Oceanic languages. These word lists demonstrate some of the features of the language (for further information see Section 3.1), and they present similarities observed between other languages in the family.

I used two initial techniques of lexicostatistics to evaluate Matukar: first, a formation of a 50-item word list for Matukar and four other Oceanic languages, and second, a search for cognates among these languages (Gudschinsky 1964). The word list, popularized by Morris Swadesh, is composed of items that are assumed to be core vocabulary words for any language. Therefore, they reflect ideas that may be used by humans in general, regardless of cultural background or location. An English word like *sun* may be a core word, while *snow* would be irrelevant and most likely absent in languages such as Matukar. Furthermore, these words are assumed to experience the least amount of change over time, and thus present a valuable way to compare languages that are separated by long distances, such as Oceanic languages. Swadesh (1954, cited by Gudschinsky 1964), proposed 200 or 100 item lists, with the idea that longer lists reduce the probability of erroneous conclusions caused by chance similarities. Since these data will not be used to calculate quantitative lexicostatistic results, though, I have found it reasonable to reduce the amount of words to 50.

As there are a number of Swadesh lists online (The Rosetta Project 2001) I used them for a reference in developing my 50-item list of English words. Ultimately, I chose basic nature, tool, kinship, and counting terms. Then, I used the Matukar online talking dictionary to find the relevant Matukar words; the Rosetta Project (2001) for terms in other languages: Kiribati, Samoan, Rapanui; and the Austronesian Language Database (Pawley, cited by Greenhill, Blust,

and Gray 2008) for Proto-Oceanic words and the Takia lexicon. Takia and Rapanui were chosen for location- Takia is one of the closest Oceanic languages, as it is located in Madang District in several coastal villages as well as off-coast Karkar and Bagabag islands (Ethnologue). It is also in the same sub-family: Eastern Bel (Mathieu-Reeves 2010). Rapanui, spoken on Easter Island, is the furthest Oceanic language from Matukar. Kiribati and Samoan were chosen for their larger speaker population (58000 and 199000 respectively) and greater amount of lexical documentation available.

Next, I scanned the lists for cognates between Matukar and the other languages (Appendix A, cognates boldface). Marked cognates are words with mostly equivalent phonemes or phoneme clusters in similar positions on the morphemic level (Gudschinsky 1964). In Appendix A, we see a clear relationship between Takia and Matukar, with 27 possible cognates (54%), including many terms that are identical. However, we cannot rule out similarities due to borrowings from Tok Pisin and loanwords, especially since Takia has a spoken presence on the mainland. Trends in the comparison of Matukar to Takia include elision of vowels (*garmau* to *gram-*) difference in diphthongs (*ηau* to *ηai* and *yau* to *yai*) and consonant changes (*f* used instead of *h* as in *huduŋan* to *fdyan*). When looking at the other three languages, cognate percentages are 16% for Kiribati, 18% for Samoan, and 12% for Rapanui (Table 1.1). This is a probable result, as all three languages are much more distant from Matukar than Takia is, with Rapanui being the furthest. Furthermore, since Takia is in the same sub-family, there is documented linguistic closeness (Mathieu-Reeves 2010) that the others do not share to the same extent. Since our sampling is small, some or all of the possible cognate similarities on the table could even be simply products of random chance. Nevertheless, it is interesting to note that even in this small sampling, there are cognates across all five languages as in ‘eye,’ ‘liver,’ and

‘louse,’ and that even Rapanui shares an identical cognate, *mate*, with Matukar. We could form, from this chart, an initial hypothesis of certain words and phonemes that were present in a Proto-Oceanic language. More importantly for this study, we can begin to see how a small, mostly undocumented language can be linked to other languages in the Oceanic subgroup (see Section 3.1 for further discussion of the linguistic features of Matukar).

Table 1.1: Percentage of possible cognates found in Table 1

Matukar	Takia	Samoan	Rapanui	Kiribati
Base	54%	18%	12%	16%

1.4.4 Current language status

The modern-day Matukar speech community is largely bilingual in at least Tok Pisin, the national pidgin, if not English. Tok Pisin originated from Pacific-Jargon English in the late nineteenth century. Indigenous Pacific Islanders working as indentured servants on the many island plantations developed the pidgin in order to communicate across the barrier of village vernaculars. When workers traveled back to their villages, they brought the pidgin with them, and it became a symbol of new, modern life, especially among men. As the pidgin became more popular, it unified small ethnic groups that would have previously been hostile, and helped forge an urban identity as large towns formed around mission and trading centers. The colonial government officials and missionaries encouraged this shift because it simplified the problem of communication with locals in a place of great linguistic diversity. (Romaine 1992)

Now Tok Pisin is in its post-creole stage, with urban children learning it as their native language and rural children acquiring fluency by the time they leave school. It is recognized as an official language of Papua New Guinea and is increasingly dominating vernaculars in most domains of use. (Romaine 1992)

In Matukar village, Matukar is no longer spoken by children under ten (Section 1.2) because Tok Pisin is used in daily life. Although there are still 27 Matukar-speaking elders over the age of 50, the language used in the community when not speaking to elders is Tok Pisin (Mathieu-Reeves 2010). English, even though it is another official language and is used in governmental procedures and education, is not preferred to languages native to Papua New Guinea. It is evident that with the popularization of Tok Pisin, Matukar use is in a period of transition.

Up to February 2010, there was no orthography or written work in Matukar. See 4.1.1 for more about the development of the Matukar orthography.

1.5 Language attitudes

Language attitudes are “the feelings people have about their own language or the languages of others” (Crystal 1992). When examining language attitudes, one can therefore expect to see a broad range of situations. We look at how a group views the language in terms of identity and culture. Is the language plainly linked to the group’s ethnic identity? We also consider feelings towards bilingualism in the eyes of the majority versus minority- how speakers of other local dominant languages view acquisition of the said language, how the language is viewed by the community in terms of quality and maintenance, and whether, if the language is spoken by a minority ethnic group, how the minority group is viewed and if language revitalization is supported for non-dominant languages. Negative and positive family language attitudes are considered as well- whether families view the language as important to transmit or whether they support acquisition of another dominant language. Finally, attention must also be given to which language domains are considered “proper” for use of the language, and willing the community is to see their language undergo change and/or be used in new domains.

It is clear why these basic considerations concerning language attitudes are important to evaluate in any revitalization project. If language attitudes concern subconscious positive or negative views about the language, they can be the determining factor in language shift or successful language revitalization. For example, negative language attitudes can lead to parents refusing to teach children their language, and outsiders pressuring speakers to adopt more widely-spoken languages. When this happens, the language could become moribund within that generation.

Where do negative language attitudes come from? They develop from the view of one language being “inferior” to a dominant language that is used in important language domains such government or education. If the culture caricatures speakers as old-fashioned and stupid, or overtly oppresses the language community, feelings of shame about the language will result (Crystal 2000). Conversely, if there is outside institutional support for vernaculars, or if language groups have reasons to value their ancestors or heritage, they may actively protect and wish to revitalize the language. Therefore, a revitalization process must evaluate positive and negative language attitudes and discover the foundations of such unconscious beliefs. In this section, we will look at positive and negative language attitudes of Matukar villagers concerning the relation between their language, identity, and the dominant language of Tok Pisin. A further evaluation of language attitudes can be found in Section 2.3.2.

Papua New Guinea has a history not of national identity, but of identity within one’s ethnic group, and more specifically within one’s language group. This identity was originally based on kinship and relations between members of a clan. National disunity is often reflected by calls of secession from individual provinces, but it also shows the state’s reaction to its heterogeneous makeup that disregards political borders. (Romaine 1992)

The growth of Tok Pisin has changed the dynamic of group identity markedly. In the face of urbanization, it is possible to speak Tok Pisin and create an individual identity apart from ethnic tribes. This leads to contrasts between city-dwellers and rural villagers, turning the urban dialect of Tok Pisin into a prestige language having ties to contemporary, modern, Western lifestyles. (Romaine 1992)

We see this trend with Matukar, which uses “Panau” as a mark of solidarity. At the same time, school children are learning in English and must speak Tok Pisin with their peers, while Western ideals accompany new media and trade. For rural Matukar children, Tok Pisin is the language that connects them to their town-dwelling peers and contemporary lifestyles (Romaine, 1992). While Matukar is traditionally valued, language shift towards Tok Pisin reflects the attractiveness of a language that breaks down the barriers to a modern world.

1.6 History

Papua New Guinea was one of the last territories to be colonized by Europeans. Before colonization, Matukar-speaking migrants had lived in their territory for several hundred years and had developed a lifestyle of subsistence farming supplemented by trade with surrounding ethnic groups. There was little social stratification in the coastal communities of that time compared to highlanders or Polynesian islanders. Instead of a strict hierarchy of chiefs supported by clan leaders, the egalitarian societies promoted a system of popularity based on acquisition of temporary wealth. Leaders, or “big men,” were generous with their wealth to the point of personal damage in order to gain social standing in the clan. Other more permanent authority figures were older kinsmen and elders of the clan. (Romaine 1992)

There was no lasting attention from explorers in Madang, except for the Russian scientist Nikolai Miklukho-Maklai who explored the province in 1871, until the Germans took over

northeastern Papua New Guinea in 1884. However, Catholic and Lutheran missions sprung up during the latter half of the nineteenth century and imposed a form of local government over the indigenous people, encouraging Christianity and western clothing and discouraging traditional religious practices and celebrations. The missions soon became small societies where the western way of life- church membership, working for wages- soon undermined the authority of “big men.” Malaria, always a threat to the coastal villagers who had previously been prevented from coastal expansion due to epidemics, ravaged these communities and decimated small ethnic groups. Even the agricultural practices were affected when subsistence farmers moving closer to missions found that their added presence soon damaged the soil’s productivity, increasing dependence on the mission’s western economical systems for their livelihood. On the arrival of missions, a new class of society with western colonization implications had been added to PNG’s sociological system. (Romaine 1992)

The Germans initially annexed Matukar land as part of their northeastern territories, but began to explore the rivers and interior of PNG. They built plantations and invested commercially in their colony until WWI, when Australia was given the land in the face of German defeat. Australia concentrated on developing coastal regions and standardizing programs such as educational policies (See 1.9). During this time, colonial practices including indentured labor and the government appointing of village chiefs were established. Policies dictated actions of ‘natives’ or non-Europeans, segregating citizens. Colonization also began to form a new upper class of more educated English-speaking Papua New Guineans. As New Guinea became a Trust Territory in 1949, indigenous citizens began to advocate for rights, and eventually became elected to the House of Assembly, declaring independence in 1975. The country became “the Independent State of Papua New Guinea” and was divided into provinces, including Madang,

where Matukar is situated. However, the class systems and colonial ideals such as the proliferation of English were kept by the powerful upper class. Now, Papua New Guinea is in the process of “decolonization,” and many of the older systems are being re-evaluated, including the language policy. (Romaine 1992)

1.7 Language policy

The Independent State of Papua New Guinea officially recognizes the independence of its citizens and their rights to determining language use within their communities. This means that government supports communities in keeping their vernaculars (“Tok Ples”) as legitimate ways of giving and receiving information, and all languages are respected. However, English and the pidgins Tok Pisin and Hiri Motu are recognized as official languages of the state- English as the language of international relations and commerce; Tok Pisin and Hiri Motu for communication between different language communities (Evans 2001)

Other institutional support for local languages comes from non-profit organizations that often work alongside the government on literacy projects. One of the most prevalent NGOs is the religious-based Summer Institute of Linguistics (SIL), which takes linguistic surveys, oversees translation projects, and conducts linguistic research on indigenous languages (Litteral 1999). Because of the quantity of languages in Papua New Guinea, there are no official policies on individual languages such as Matukar, and NGOs like SIL often focus on languages with larger populations of speakers first for literacy efforts. Therefore, there has been no institutional or governmental language planning regarding Matukar.

1.8 Economics

As a middle-income country (World Bank, cited by Klaus 2003), Papua New Guinea economy has two sectors: one focused on traditional subsistence farming, fishing, and trade, and

the other centered on capitalistic production for world trade. As of 2003, 85% of the population lived in rural villages such as Matukar and used subsistence farming, hunting, and fishing for at least part of their income (Klaus 2003).

1.9 Education

In Papua New Guinea, compulsory education lasts for nine years starting at age six. Primary school lasts until 6th grade, when students must pass exams in order to enter the provincial high schools for grades 7-10. Many children only complete the eighth grade or lower, with 21% enrolling in secondary (high) schools. School attendance varies widely depending on the location. Urban schools can have normal primary school completion rates that are twice as high as rural ones, because poorer, remote villages may not be able to afford the cost of sending children (who could help with subsistence farming) to school. The literacy rate is 66% of the total population 15 years of age and over (Encyclopedia of the Nations 2010).

The official language of PNG's educational system is English. However, PNG has implemented a new language policy in the last decades that introduces vernacular languages into local schools. Historically, mission schools supported teaching in vernacular languages in order to connect their message with villagers' cultures (Moody 1992), but Australia's colonial government soon made teaching in English compulsory in order to promote western-style educational goals (Litteral 1999). Once PNG became politically independent in the 1970s, Tok Pisin became a more common language of teaching, and a pilot project (North Solomons Province, *Viles Tok Ples Skul*:1980) was put into effect for teaching in the vernacular. Grassroots projects began to advocate for vernacular education with a community-based language policy instead of exclusive governmental decisions (Litteral 1999).

By the 1990s, the government had been sufficiently influenced by the success of vernacular education to implement a national educational reform program. This extraordinary program introduces vernacular education into the first three primary grades. Instead of top-down language planning, though, the basis for implementation of the new system would lie on language communities. It would be the community's role to build classrooms, if needed, and to work with NGOs/linguists to develop the educational materials for that language (Moody 1992).

One critique of this program has centered on the transition to English after the third grade. It was noted that vernacular education has had greater success in teaching literacy because children are more easily able to understand the concepts behind English literacy after having read in their own language. Because this observation was what catalyzed the government to adopt vernacular education, advocates of local language preservation contend that vernacular literacy is simply being used as a tool to aid in English literacy. In some cases, the cause of revitalization is found at odds with English/native language literacy. For example, where children use Tok Pisin as their primary language, it would be more difficult to transfer to English literacy using their villages' vernacular than with Tok Pisin, yet vernacular education is necessary to language preservation planning. Plans which advocate for a vernacular literacy focus may therefore conflict with national language policy. By switching to English after early literacy, the system still treats the vernacular as a language less relevant in the domain of education. (Liddicoat 2008)

It is hoped that most of PNG's 830+ languages will soon be used in the initial levels of the primary system, with the reform affecting almost 470 languages so far (Litteral 1999). Matukar has not experienced the effects of this change in national language policy as of this writing, which may be attributed to several factors. Communities must choose mother-tongue speakers of the language as instructors. This slows the process down as teachers, who sometimes

did not complete 10th grade themselves, are trained. In addition, materials, though produced as standardly and efficiently as possible, must be made relevant to the specific language and culture. Problems specific to the rural Matukar village may be the significantly small speaker population and the lack of a local school. Therefore, the next ten years could bring vernacular education to Matukar as these problems are addressed.

1.10 Conclusion

Matukar's background has revealed many sociolinguistic characteristics that will be important in assessing its endangerment. Since sociological areas such as education and government control can powerfully influence language attitudes, and since language attitudes impact the success of revitalization, we must find a classification system that connects Matukar's background in these areas to its health and stability.

2.0 Language death and the language endangerment phenomenon

How do languages die? Language is a unique form of human communication- it is an organized, rule-specific system involving a speaker and an addressee. Humans shift back and forth between these learned systems, sometimes within an individual's lifetime, often within generations of a community (Crystal 2000). It is therefore difficult to pinpoint death of language. If we only focus on the language system itself, this could conceivably be preserved in recordings and manuscripts. But since languages in use by humans are constantly altering, a language preserved solely in records is "frozen" and cannot be considered alive. Languages, therefore, rely on the speakers and addressees. We may find instances where a language only exists imperfectly in the mind of non-native speakers such as researchers or a younger generation which hardly remembers scattered phrases of the lexicon (Tsunoda 2005). Are these languages considered dead? Maybe not, yet the death blow for that language had already come when the last fluent,

native speaker died. Once a language is no longer needed as a system of communication between speakers, it is on the road to extinction (Crystal 2000).

We recognize that language death is an effect of disuse by speakers. This can happen when a speaker population is completely wiped out, taking their language with them, but it is seen more often when the language's ethnic group shifts to a more dominant language (Tsunoda 2005). Therefore, language death is not merely a linguistic phenomenon- it is a sociological and ethnological process arising from the changing culture of a population. A language shift is directly correlated with either a voluntary or involuntary shift to a different way of life.

2.1 The language endangerment phenomenon

Anderson and Harrison (2006) identify areas of great linguistic diversity with high genetic diversity, high levels of language endangerment, and low levels of linguistic documentation as language hotspots. Many of the world's almost 7000 languages are found in these hotspots- half of all languages contain a speaker population of less than 5000 people. As hotspots, which are often rural, become more developed, there is pressure on the ethnic groups to conform by adopting the dominant language of the area. Papua New Guinea, where Matukar is found, is identified by Harrison as one such hotspot because of its diversity (Harrison 2007). However, the dominant language of Tok Pisin is taught in schools and used alongside English in governmental affairs. Assimilating to Tok Pisin helps in urbanization as Papuan villagers such as those from Matukar are shifting from the traditional agricultural lifestyle to modern, urbanized ones. While speakers of the younger generation begin to use Tok Pisin and English exclusively, the speaker population of local languages gradually grows older and eventually dies off. Due to such rapid language shift in hotspots like Papua New Guinea, it is estimated that one language becomes extinct on average every 14 days worldwide (UNESCO 2003). In order to address this

issue of language death, linguists must first identify endangered languages and secondly assess their condition. Only with such data can a linguist support communities in planning language revitalization.

2.2 Early systems of language endangerment classification: Krauss (1992, 2007) and Fishman (1991)

Michael Krauss (1992) pioneered the classification of language endangerment based on age of current speakers. He noted that a language must be learned as a mother-tongue by children in order to continue to remain viable in the next generation. Languages not being transmitted to children are thus “moribund” because the language community is no longer self-sustainable. There is also a large range of languages that are endangered but not moribund. These languages are disadvantaged in terms of size and support by their local government. Because there is pressure for younger generations to assimilate to languages that are practical in the modern world, disadvantaged languages are in danger of becoming moribund, or “endangered.” Lastly, languages that are “safe” are spoken by over a million people, have strong support by governments, and are used in media and to educate children. The latter two factors ensure language learning and give it legitimacy in the eyes of the younger generation- a language used online or in schools can be transmitted to children even if parents fail to do so in the home.

In 2007, Krauss employed a version of his classification system using “safe,” “endangered,” and “extinct” to classify the known world languages. According to his system, 95% are endangered, although languages can move from, say, “severely endangered” (where only elders speak the language) to “stable” (where children normally learn it in the home). Such a scale can measure the success of revitalization work with a “before” and “after” assessment

based on childhood acquisition. Krauss's system directs revitalization plans in favor of childhood language immersion efforts if a language rates particularly low on the endangerment spectrum.

Classification of language endangerment based on domains or functions of the language was popularized by Fishman (1991). He proposed eight stages of a language, "Xish", from prevalence in most spheres of life (Stage 1) to only in use by isolated, elderly members of the population (Stage 8). In his *Reversing Language Shift: Theoretical and Empirical Foundations of Assistance to Threatened Languages* (1991), Fishman considers how a language might move from each of the stages to a lower place on the scale—a change that involves not only use by younger age groups, but also in varied contexts. For example, while Stages 8-6 describe a language state from just elder speakers to speakers of all ages with institutional support for the language, Stage 5 is literacy in home, school, and community, and Stage 4 is "Xish" use in formal, government-specified education. Fishman's scale recognizes the fact that levels of language endangerment cannot be looked at independently of cultural and governmental mandates.

It is clear from Fishman's different stages that domains of language use are important to consider. Languages generally experience a top-down pattern of language death: speakers stop using the language in formal contexts first, such as in the government or schools, and gradually this trend spreads to home life and daily use (Tsunoda 2005). A language must therefore be assessed not only on who uses it, but where it is used and if there are any competing languages taking root in higher domains. If the main use of the language is in traditional arenas such as festivals and songs, it is most likely that only elders or people who value such traditions will keep speaking the language. Modern language use calls for modern language domains, which can in turn help to preserve traditional practices through policy setting and language planning.

We have now looked at two classification systems that describe endangered languages. Krauss's system highlights the fundamental problem of increasing age of speaker population, while Fishman describes language endangerment using the top-down pattern of language loss in various domains. These systems can give linguists a targeted view of where a language is in relation to other local languages, and how to form a revitalization plan that affects the language's specific situation.

2.3 Matukar on the UNESCO Sociolinguistic Situation Assessment

Krauss' and Fishman's classification systems work well to target specific factors of language endangerment, but in order to have a complete revitalization plan, a classification system must rate a language from multiple viewpoints, combining these factors. In 2003, UNESCO's Ad Hoc Expert Group on Endangered Languages (which included Krauss) produced "Language Vitality and Endangerment": a document that assesses a language's "overall sociolinguistic situation." This includes a language's vitality and state of endangerment, language attitudes, and urgency for documentation (UNESCO 2003:7). The assessment uses nine factors that all have a bearing on language endangerment. Table 2 summarizes Matukar's rating on the basis of these factors:

Table 2. Assessment of the endangerment of Matukar based on vitality, language attitudes, and urgency for documentation prior to July 2009.

Factors affecting language endangerment:	Rating of Matukar (on a scale of 0-5, or as noted)	Parameters
Intergenerational language transmission - Degree of language endangerment	2-3 (definitely endangered- Matukar is used mostly by the parental generation and up)	Where 5 = all ages speak the language (safe) and 0 = no speakers (extinct)
Proportion of speakers within the total population	2-3 (severely endangered - a minority speak the language) Village population: 600+	Where 5 = all speak the language and 0 = none speak the language
Absolute number of speakers	~430	N/A
Trends in existing language domains	1-2 (highly limited domain – used for few functions)	Where 5 = universal use and 0 = extinct
<i>Response to new domains and media</i>	<i>0 (inactive- not used in any new domains)</i>	<i>Where 5= language is used in all new domains and 0 = language is not used in any new domains</i>
<i>Materials available for language education and literacy</i>	<i>0 (no orthography available to the community)</i>	<i>Where 5= established literary tradition and 0 = no orthography available to the community</i>
Official status and use: governmental and institutional language attitudes and policies	2 (active assimilation - government encourages assimilation to Tok Pisin or English)	Where 5 = equal support and 0 = prohibition
Community members' attitudes toward their own language	3-4 (Many to most members of the community support language maintenance)	Where 5 = all members support language maintenance and 0 = no one cares if language is lost
<i>Amount and quality of documentation</i>	<i>1 (inadequate- short word lists, "fragmentary texts," and no audio or video recordings)</i>	<i>Where 5 = extensive documentation available including grammars and annotated recordings, and 0 = no material exists</i>

2.3.1 Matukar's rating on vitality and state of endangerment

Five factors-Intergenerational Language Transmission, Proportion of Speakers Within the Total Population, Absolute Number of Speakers, Trends in Existing Language Domains, Response to New Domains and Media, Materials Available for Language Education and Literacy- assess Matukar's vitality and state of endangerment according to UNESCO. The first factor of language transmission clearly comes from Krauss' classification-we see that as it is based on what age groups still speak the language, Matukar is rated low. Since younger villagers still use Matukar in talking to elders, there is at least some command of the language. But since young children do not speak it, Matukar is definitely if not severely endangered in language transmission.

Since the next two factors are based on size of the ethnic and speaker population, we see that Matukar also rates low in these respects. Four hundred-thirty speakers is small even in terms of local Papua New Guinean languages, which makes it, according to UNESCO, more vulnerable to language loss due to natural disaster affecting the population or assimilation to surrounding languages. As Matukar is nearby to Madang, a larger town, it could easily be a candidate for urbanization, increasing the importance of Tok Pisin and English over Matukar. It is also in a relatively remote area where natural disasters such as earthquakes and floods are common and can destroy small villages. Therefore, even if Matukar was stable in other areas, it would still be endangered as long as its speaker population remained low (<5000, at least). In addition, the fact that only a minority still regularly speak the language again points to lack of language transmission.

The factors on language domains reflect Fishman's views on language endangerment. When we consider Matukar based on existing language domains, we see that it has been pushed

out of the spectrum of use in daily life by Tok Pisin (Mathieu-Reeves 2010), and government use by Tok Pisin and English. Traditional activities such as sing-sing-like festivals may still use Matukar, and the older generations still communicate in it, but primarily it is losing its former language domains. In regards to new domains, until 2009 it was not used on radio, internet, or television (the village did not even have internet) so it is rated as completely inactive on Table 2.

Matukar also has a zero on the final vitality factor based on literacy and education. Prior to 2009, Matukar had never been written down and had no standardized orthography. In addition, Matukar children walk or ride the bus to a distant school that teaches in English or non-Matukar vernacular. With no written, formal educational tradition, the community used oral transmission to preserve stories and ideas in their language.

2.3.2 Matukar's rating on language attitudes and policies, urgency for documentation

UNESCO's assessment system includes not only ratings on the state of the language, but consideration for attitudes about the language from the speaker community and outside governments. This is an important addition that determines whether a revitalization plan will go well or poorly. First, we rate Matukar on official language attitudes of governments and institutions. Without explicitly prohibiting language use, a government can do much to cause shift from local languages to dominant ones. In Matukar's case, because the government and educational language is English (and some Tok Pisin), authorities are encouraging passive assimilation. English or Tok Pisin is being used as a "de facto" language (UNESCO 2003) while Matukar use is not encouraged at all. However, language policy in Papua New Guinea has changed significantly since the latter half of the twentieth century, and now many official schools are beginning to educate in the vernacular in the lower grades (Section 1.9). Programs to educate all children in their vernacular is a daunting task considering PNG's 800+ languages.

Since Matukar is so small, it is understandable that this policy change has not yet reached the village, which does not even have a school. Even so, the fact that the educational policy does not include Matukar gives this generation little chance to spread Matukar to other domains.

The highest rating on Table 2 is the community's attitude towards revitalization. Community members such as villagers Rudolf Raward, Kadagoi Rawad, and Jason Bogg have actively promoted language preservation (see Sections 4.1.3 and 4.2). Older community members talk of how they want the younger generation to learn Matukar, and younger speakers have mentioned their regret on not learning Matukar well (Mathieu-Reeves 2010). Although we do not have a qualitative measurement of support for language revitalization, we do not know of any negative sentiments, and we do know that many villagers will make efforts to support language maintenance. Because villagers view "Panau" as part of their identity (see Sections 1.5 and 3.2.3), we surmise that they may be willing to be the key players in the revitalization process.

Our final rating, under the Urgency for Documentation factor, shows the inadequacy of documentation prior to 2009. Matukar had not been documented beyond small wordlists (See section 4.1.3). This aspect of research is necessary even if the language cannot be revitalized, because otherwise a large body of human knowledge will be irrevocably lost.

2.3.3 What can we learn from Matukar's endangerment assessment?

How can we use the Matukar ratings to assess its sociolinguistic situation? UNESCO cautions that the ratings should not be added for a single "level of endangerment", but rather to consider each factor as an individual part that as a whole adds to the stability of the language. According to the UNESCO chart, Matukar rates low in all respects except for community language attitudes (and possibly governmental/institutional language attitudes). From a linguistic viewpoint, we see that Matukar cannot be considered stable until it is propagated in modern

domains that are relevant to younger speakers, and until it is linguistically documented and can be transmitted effectively. Fortunately, the positive community support for preservation and the urgency for documentation mean that linguists working on Matukar would be welcomed.

Matukar is a prime candidate for revitalization.

3.0 Why revitalize Matukar?

The value in revitalizing a language is not always self-evident. People who picture a global language spoken by humans worldwide as an ideal might find the idea of supporting endangered language communities pointless. Even aside from the work and money it takes to begin revitalization projects, some might think it a waste to work on endangered languages when language communities could be focusing on acquiring a dominant language (Crystal 2000). Therefore, it is necessary to present linguistic and extralinguistic reasons for supporting the preservation of Matukar.

3.1 Linguistically

From a linguistic point of view, all endangered languages are invaluable. They contribute to linguistic diversity, which is necessary to a well-rounded study of language (Crystal 2000). Each unique language, by its very definition, must contain a selection or system of features, whether they are lexical elements or phonemes, not found in any other. Languages share features, but we will not find a system that has precisely the same inclusion, omission, or organization of features that Matukar has. Linguistic diversity has often been compared to biological or ecological diversity. As each organism influences the ecosystem, so does a language have a value not only in and of itself, but in relation to other languages and anthropological domains (Crystal, 2000). Although the argument for language preservation based on how valuable every language is to the study of linguistics may not be the primary argument for revitalization, it must

be included in any evaluation of linguistic documentation efforts. Preservation of small endangered languages like Matukar in PNG is crucial for many linguistic reasons, such as the study of linguistic history (Proto-Oceanic and Pacific migration), comparison of Austronesian languages, and study of language shift and change due to the development of pidgins like Tok Pisin. In the following parts we will highlight some linguistic observations concerning the phonetics and lexicon in order to begin to connect the compilation of Matukar words to linguistic science.

3.1.1 Phonology

The vowel inventory of Matukar is similar to that of many New Guinean Oceanic languages (Lynch, 2002). It is a typical five-vowel system (possible allophones in parentheses):

Table 3: The Vowels of Matukar

	Front	Central	Back
High	i		u
Mid	e/(ɛ)	(ə)	o/(ʌ)
Low	(æ)	a	

Diphthongs (V+C phonemes) are used extensively: *haun* ‘clean’, *paiin* ‘woman’, *boi.ip* ‘tomorrow’, *neu* ‘leg’. However, since they may be analyzed as Vj or Vw, the assignment of syllable structure might be affected (Table 6).

Examples of vowel opposition include: *nigol* ‘leaves from a vine’ vs. *nigul* ‘top part of a roof’; *sal* ‘bench, seating area of canoe’ vs. *sel* ‘laughs (3s)’; and *sim* ‘stool’ vs. *sam* ‘part of a canoe’.

The consonant system is shown in Table 4:

Table 4: The Consonants of Matukar

	Labial	Alveolar	Palatal	Velar	Glottal
Plosives	p b	t d		k g	(?)
Nasals	m	n		ŋ	
Flaps					
Approximants	w	l	j		
Trills		r			
Fricatives	f, (ɸ)	s			h

All except those in parentheses are found word-initially, with the velar nasal having widespread occurrence. These consonants also appear word-finally with the exception of *-w*, *-f*, *-h*, and *-j*.

The following table and wordlist denotes the consonant clusters found in Matukar. Only the clusters *pr-* (*pri* ‘drum’) and *br-* (*bras* ‘year’) are found within a single syllable.

Table 5: Medial heterosyllabic clusters found in Matukar

	<i>p</i>	<i>b</i>	<i>t</i>	<i>d</i>	<i>k</i>	<i>g</i>	<i>m</i>	<i>n</i>	<i>ŋ</i>	<i>w</i>	<i>l</i>	<i>j</i>	<i>r</i>	<i>f</i>	<i>s</i>	<i>h</i>	<i>ɸ</i>
<i>p</i>					✓		✓								✓		
<i>b</i>							✓			✓			✓				
<i>t</i>	✓		✓	✓	✓	✓	✓	✓		✓							✓
<i>d</i>		✓	✓	✓							✓						✓
<i>k</i>	✓	✓	✓		✓	✓			✓	✓	✓		✓				
<i>g</i>	✓	✓			✓	✓	✓		✓	✓			✓				
<i>m</i>	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
<i>n</i>		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	
<i>ŋ</i>					✓	✓											✓
<i>w</i>																	
<i>l</i>	✓	✓	✓	✓				✓		✓				✓	✓		
<i>j</i>																	
<i>r</i>	✓		✓	✓	✓	✓	✓	✓					✓				
<i>f</i>																	
<i>s</i>	✓			✓	✓		✓					✓					
<i>h</i>																	
<i>ɸ</i>																	

(1)

p
abaŋ yapkali ‘lightning’
kapepmau ‘my forehead’
ŋalepso ‘bring me’

b

dadubman ‘cold’
uyan sobwa ‘goodbye’
babrem ‘supports rigeng’

t

tamatpaiinim ‘people’
anattudi ‘reflection’
mahautdine ‘broke’
i kitkit ‘s/he steals’
gutgut matan ‘money’
hutmak ‘anus’
anatnat ‘ghost’
witwit ‘fan’
mahauthautdine ‘broke them’

d

waibudbud ‘hail’
laɲedidti ‘poor (3s)’
laɲedidda ‘rich (3pl)’
idlo ‘about us (incl)’
idhad ‘our (incl)’

k

kukurekparpar ‘hawk’
bakbak ‘type of ant’
taktak tabulaba? ‘what are we doing?’
i kokkai ‘s/he plays (but....)’
i kokga ‘s/he plays (imperf)’
ɲukɲuk soyaugo ‘have sniffles (1s)’
kwaku ‘type of bird (brown)’
baliklik ‘shell’
sabarikrik ‘type of bird’

g

dal nagpageikaman ‘puddle in the middle of the road’
ɲamyogəyogba ‘will see-saw (excl, 2s)’
magogkai ‘it drips (but....)’
i suggo ‘s/he washes (imperf)’
nagmənimbawai ‘I leave it alone (desiderative)’
i sugɲan ‘s/he washes (continuous)’
tagwai ‘where is’
sirigrigmau ‘my waist’

m

dampilpil ‘type of gecko’

somba ‘will come (2s)’
timtain ‘cloud’
oŋ apaimda ‘bald’
ŋam ŋamkite ‘we (excl) stole’
tagumgume maisado ‘bend, stand up and’
ŋam ŋammul ‘we (excl) come back’
tiŋamneŋo ‘are not cooking (excl, 1pl)’
ŋamwatitiŋe ‘capsized (excl, 1pl)’
ŋamlumiŋe ‘drank (1 pl)’
ŋamyumi ‘blow (excl, 1pl)’
kasaromrom ‘type of spider’
ŋamfumba ‘will fight/hit them (excl, 1pl)’
ŋamsop ‘come from a long way (excl, 1pl)’
ŋamφuni mate ‘killed (excl, 1pl)’

n

tanbaubau ‘dust’
ainta ‘half/piece’
andi ‘prox’
kinkin ‘tattoo’
nunman ‘dirty’
tinin wanananne ‘s/he had a fever’
mainwai ‘because’
ilonlo ‘in’
nye ‘digging stick’
tanfag ‘mud’
brunsa ‘mad’
tanhona ‘on top of ground’

ŋ

maniŋkal ‘type of ant’
madonŋo ‘is sitting there’
ŋhau ‘my’

l

dampilpil ‘type of gecko’
balbal ‘fat’
palti ‘to slap’
buldop ‘possibly’
bor malalnen ‘boar’
silwan ‘thin’
salfek ‘ladle, scoop’
tabulsik ‘fat’

r

tarpasip ‘drop (non-finite)’

yawarti ‘wind in the dry season’
turdo ‘stand-’
darkəke ‘pandanus’
pargaga ‘twin’
gurgurman ‘black’
nornen ‘yesterday’
korrarai ‘dried (leaves)’

s
sulu paspas ‘saliva’
i maisdo ‘s/he gets up (and)’
numaukusku ‘my pinkie’
masmanin ‘calm sea’
i tarpasyauwe ‘s/he made me fall/threw me down’

The following table shows possible syllable types. As was seen above, only obstruent + rhotic clusters are found as initial CC in a syllable. There is also the possibility in the above data of nasals such as the velar to form the nucleus of its own syllable (*ŋhau*).

TABLE 6: MATUKAR WORD CV STRUCTURE

Monosyllabic	
VC	<i>ab</i> ‘house’
CV	<i>ti</i> ‘no’
CVC	<i>dal</i> ‘road’
CCV	<i>pri</i> ‘drum’
Disyllabic	
V.V	<i>aiu</i> ‘my chin’
V.CV	<i>abe</i> ‘type of snake’
V.CVC	<i>aten</i> ‘liver’
CV.V	<i>pai</i> ‘my collar bone’
CV.CV	<i>malu</i> ‘seagull’
CV.VC	<i>paiin</i> ‘woman’
CV.CVC	<i>kaluŋ</i> ‘feather’
VC.CV	<i>ainta</i> ‘half/piece’
VC.CVC	<i>altot</i> ‘firefly’
CVC.CV	<i>tante</i> ‘on top of ground’
CVC.CVC	<i>nornen</i> ‘yesterday’
C.CV	<i>ŋhau</i> ‘my’
Trisyllabic	
V.CV.CV	<i>alili</i> ‘centipede’
V.CV.VC	<i>aipaiin</i> ‘girl’
V.CV.CVC	<i>arapam</i> ‘possum’
V.CVC.CV	<i>apainda</i> ‘bald’

V.CVC.CVC	<i>abangkaŋ</i> ‘noisy’
CV.V.V	<i>sulue</i> ‘spat out’
CV.V.CV	<i>mai.ise</i> ‘rise?’
CV.V.CVC	<i>kau.usik</i> ‘leech’
CV.VC.CVC	<i>taurman</i> ‘flat’
CV.CV.V	<i>patua</i> ‘behind’
CV.CV.CV	<i>maluse</i> ‘broken’
CV.CV.VC	<i>raboi.ip</i> ‘right now’
CV.CV.CVC	<i>mataman</i> ‘dead’
CV.CVC.CV	<i>naniŋye</i> ‘burned (3s), cooked’
CV.CVC.CVC	<i>waibudbud</i> ‘hail’
CVC.CV.CV	<i>korrarai</i> ‘dried (leaves)’
CVC.CV.CVC	<i>ŋampalum</i> ‘run (we excl)’
CVC.CVC.CV	<i>laŋyenti</i> ‘poor (3s)’
CVC.CVC.CVC	<i>dampilpil</i> ‘type of gecko’

3.1.2 Nouns and Noun Phrases

Pronouns

Matukar pronouns distinguish singular and plural.

(2)

	1INC	2EXC	2	3
<i>Independent</i>				
SG		<i>ŋau</i>	<i>oŋ</i>	<i>i</i>
PL	<i>id</i>	<i>ŋam</i>	<i>aŋ</i>	<i>mon</i>
<i>Subject prefix</i>				
SG		<i>ŋa-</i>	\emptyset	\emptyset
PL	<i>ta-</i>	<i>ŋam-</i>	<i>a-</i>	<i>di-</i>
<i>Independent possessor</i>				
SG		<i>ŋahau</i>	<i>ham</i>	<i>han</i>
PL	<i>idhad</i>	<i>ŋahamam</i>	<i>hamim</i>	<i>hadi</i>
<i>Possessor suffix</i>				
SG		<i>-u</i>	\emptyset	<i>-n</i>
PL	<i>-d</i>	<i>-mam</i>	<i>-m, -mim</i>	<i>-di</i>

Nouns

We do not have enough data to determine whether there are derivational morphemes which form abstract nouns from verbs as seen in several Oceanic languages (Lynch 2002).

Nouns derived through compounding are found:

(3)

<i>matau-gurgur</i>	eye-black	‘pupil’
<i>numau-patun</i>	my arm-outside	‘my lower arm’
<i>ab balən</i>	house-tongue	‘veranda’

Articles and demonstratives

Matukar does not appear to contain any articles. The demonstrative system is not completely understood, but basic demonstrative morphemes are clearly seen:

(4)

<i>main</i>	‘this’
<i>mon</i>	‘that/there?’
<i>mani</i>	‘here’

Numerals and number-marking

Number is generally not marked on nouns. However, adjectives can agree according to number:

(5)

<i>gurgurman</i>	<i>gurgurmadi</i>
black-SG	black-PL

Quantifiers include:

(6)

<i>haiyai</i>	‘someone’
<i>hadi</i>	‘some’ (indefinite human plural)
<i>tai</i>	‘something’
<i>ta</i>	‘anything’

The Matukar number system is described in Section 3.2.2. Independent words for ordinal numbers are not observed.

Adjectives and Nominal Modifiers

Adjectives in Matukar vary from monomorphemic (*dabok* ‘big’, *apaik* ‘bald’, *madid* ‘short’) to stative verbs used as nominal postmodifiers without verbal morphology as in *gagauwe*:

- (7)
- | | | | | |
|--------------------|----------------|---------------|--------------|----------------|
| <i>tinim</i> | <i>gagauwe</i> | <i>ηau</i> | <i>burau</i> | <i>gagaugo</i> |
| skin-2SG | dry | I | neck-1SG | dry-? |
| ‘your skin is dry’ | | ‘I’m thirsty’ | | |

One adjective morpheme may be *-n* (e.g. *huduñan* ‘all’, *wagamanen* ‘old’, *haun* ‘new’, *uyan* ‘good’), as we can see that adjectives with *-n* may agree in the third person:

- (8)
- | | | | |
|---------------|--------------|----------------------------|-----------------|
| <i>fud</i> | <i>uya-n</i> | <i>uyadi</i> | <i>diyenago</i> |
| banana | good-3SG | good-3PL | there are-3PL |
| ‘good banana’ | | ‘there are some good ones’ | |

Basic noun phrase structure

Modifiers follow the noun- NOUN + QUANTIFIERS + MODIFIERS + DEM - however the quantifiers and demonstratives can be seen before or after the modifier:

- (9)
- | | | | | | | | | | | | |
|--------------------------|-------------|------------|-------------------|------------|------------|--------------------------|-------------|-------------------|------------|------------|------------|
| <i>bor</i> | <i>main</i> | <i>tol</i> | <i>gurgurmadi</i> | <i>uya</i> | <i>uya</i> | <i>bor</i> | <i>main</i> | <i>gurgurmadi</i> | <i>tol</i> | <i>uya</i> | <i>uya</i> |
| pig | DEM | three | black-PL | big | | pig | DEM | black-PL | three | big | |
| ‘these 3 big black pigs’ | | | | | | ‘these 3 big black pigs’ | | | | | |

3.1.3 Lexical observations-kinship terms

Kinship terms are seen in every language, yet are valuable to anthropologists and linguists for the rich organizational system and unique phenomena that reflect the mindset of the society. Some basic kinship relations of Matukar’s Eskimo kinship system (a typical kinship system seen in dominant languages such as English) are outlined in Figure 2 (where the *Ego* is located at *aipaiinim* – ‘child’). These are shown as examples of a key part of Matukar’s lexicon.

We start from the assumption that all kinship systems have an underlying foundational relationship of the nuclear family. This has been observed in the relative invariability of systems from around the world that cannot be explained by purely social habits or categories (Foley

1997). The nuclear family, as described by Goodenough (1970, cited by Foley 1997), has at its core the mother-child relationship. In Matukar, we see that *nen* is ‘mother’, and *aipaiin* is ‘daughter’ while *wado* is ‘son’ (although *aim* is also used). Then ‘child’, *aipaiinim*, involves the word for girl or daughter. It is interesting to note that though a core relationship is mother-child, we see a progress instead from *paiin* to *aipaiin* to *aipaiinim*- that is, from ‘woman’ to ‘girl/daughter’ to ‘child’ (inclusive of both sexes). ‘Girl’ is synonymous with ‘daughter,’ and even the distinctiveness of *wado* is lost with ‘child’. If the relationship to ‘child’ is defined by ‘woman,’ or ‘wife’ how is *nen*, the concept of ‘mother,’ distinct? In addition, might *tamat* carry similar semantic meaning as ‘father?’ Clearly, a more thorough examination of the implications and use of these terms is needed.

Another point of interest is the relation of *lulu*, ‘sibling’ to *lu*, ‘sister.’ It appears to be a reduplicated form of *lu*, while not having any connection to the various words for ‘brother.’ Again, the female form of the word seems to be an inclusive term for both genders.

Moving past the nuclear family, we see that terms for ‘aunt’ and ‘uncle’ can be made specific depending on which parent’s siblings’ they are. It would seem, like in English, that descriptors such as *mam* and *nen* add undue complexity and may be overlooked in informal speech. General inclusion of these terms, i.e. *nen han lun dabok*, could reflect a greater importance of precise kinship distinctions in the close-knit community and family.

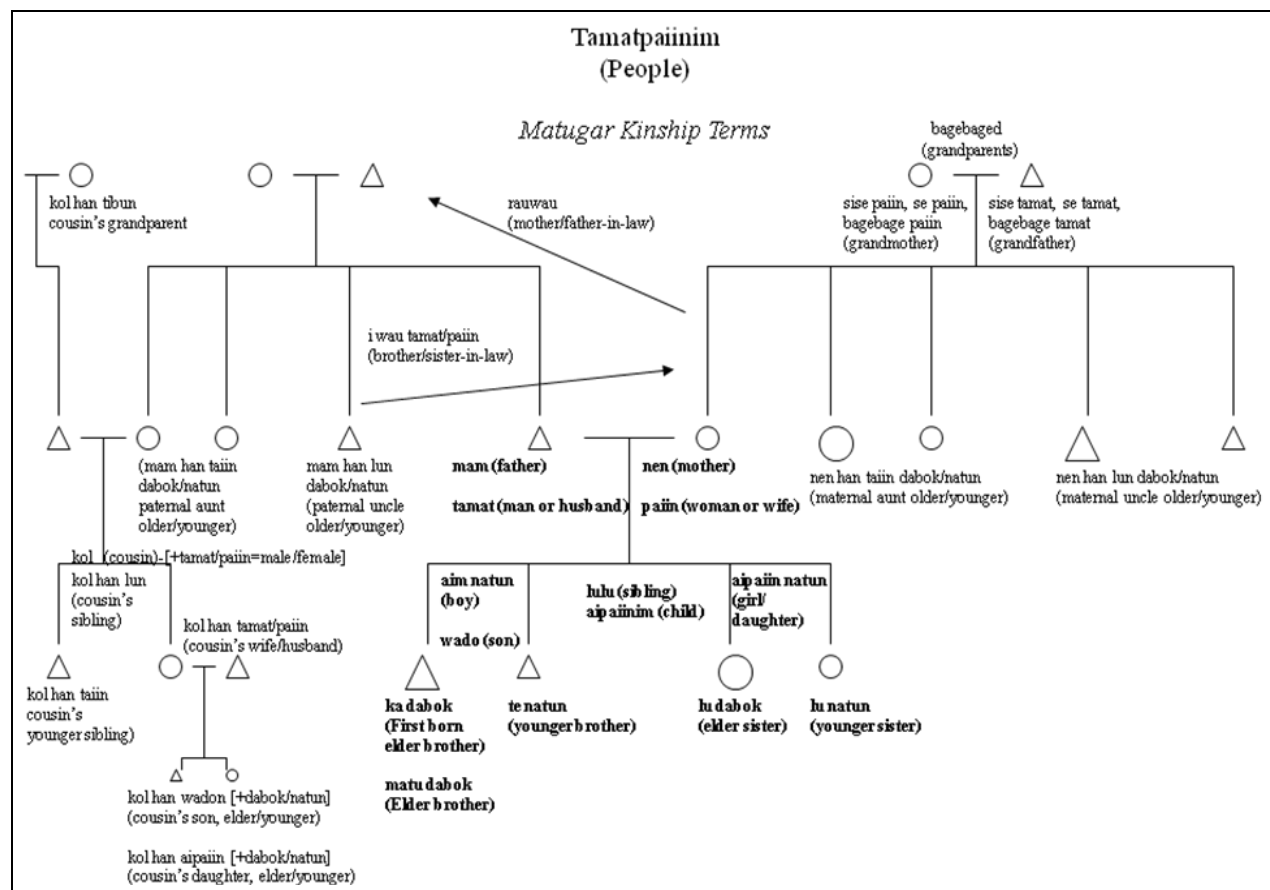


Figure 2. Diagram of Matugar's lexical kinship relations

We recognize that this diagram of kinship terms is incomplete and cannot adequately describe the Matugar kinship system. However, it does highlight important trends using basic words of the lexicon (*paiin*) that show the value of continued research in this area, as well the importance of the Matugar lexicon as a whole.

3.2 Extralinguistically

Even though Matugar is linguistically important and cases can be made for preservation from that angle, we also should consider reasons why non-linguists might support Matugar preservation. There is no great economic value for Matugar villagers in preserving their language- in fact, much of the pressure leading to language shift comes from the possibilities of urbanization and development. However, there are a number of extralinguistic reasons to

preserve Matukar apart from any economic advantage or disadvantage. According to Harrison (2007), with any language comes a knowledge base, a unique reflection of human cognition that is ingrained in the culture of the speakers, and a marker of identity. Therefore, extralinguistic value means that Matukar is part of the wide base of human knowledge and may hold ecological, anthropological, or historical information that is important to scientists and researchers. Another value is that languages reflect how the villagers think- we can look at how this is similar or different to what scientists already know about human cognition. Finally, there is the extralinguistic value of psychological importance for the villagers- “Panau” is deeply connected to ancestry and what it means to be a Matukar villager. We will examine each of these three factors in turn as extralinguistic arguments supporting Matukar revitalization.

3.2.1 Matukar knowledge base: coconuts and canoes

With our vast libraries and record systems, famous universities, and technology that allows us to find answers at the click of the button, it is easy to believe that people living in the western world have access to all human knowledge. However, Harrison (2007) cites a huge knowledge gap in information about the natural world, such as plant and animal species, as well as extensive systems of indigenous records that are transmitted orally within the language community. It is impossible to know how much humans from other cultures understand about the natural world that could help fill the gap in our western knowledge. This knowledge is “packaged” using the lexicon of that language community, and it may be irrecoverable if the community switches to English or another dominant language (Harrison 2007). We will see examples of such knowledge systems and packaging in Matukar, and how this leads to the importance of Matukar preservation.

In Matukar village, the traditional lifestyle centers around an agricultural system of subsistence farming. Villagers plant yams, tapioca, and beans. They also harvest food from the forest surrounding the village- trees include coconut, betel, and palm. A reflection of this rich agricultural technology is found in the language. When we look at the Matukar lexicon, we see lists of words relating to plants or animals specific to the Matukar environment. However, these words in Matukar do not have a one-to-one correlation with the English lexicon. Many of them include a more detailed description that relates the organism to its use in the Matukar lifestyle. In this way, Matukar organizes information to include valuable knowledge about agriculture that is plant or animal specific.

For example, in Matukar the coconut is a staple food source, both for eating and for drinking (coconut water). However, villagers also use many other parts of the plant- leaves/brush for household cleaning implements, shells for containers, trees for shade and building purposes. Out of the small corpus of 3045 words on the Matukar dictionary, 19 of them are related to the coconut. They describe the parts of the coconut tree (husk, stamen, fruit), the state of the coconut for harvesting (ripe, green, dry), and parts of the coconut having to do with coconut processing.

In example 10, we see that *samud* and *kor* are parts of the coconut plant with specific names in Matukar, giving a detailed labeling unknown in English outside of scientific terms used in botany. The fact that Matukar villagers have such detailed terms points to an intimate traditional knowledge of the plant.

(10) *samud* *kor*

‘coconut husk’ ‘coconut cover’ (on tree)

Examples 11 and 12 show the highly specific meaning that is found in Matukar, classifying coconut meat based on processing practices. Once villagers open coconuts, they

scrape the meat using specially designed benches and sort the white meat for cooking, drying the shells afterwards. With these terms, villagers are able to distinguish between useful products and waste, packaging valuable information into the compact lexicon. This information has most likely been key to the survival of villagers for centuries, and losing the Matukar language would mean losing an efficient system of terminology for the staple food source.

(11) niu ririn

‘fresh coconut meat remaining in shell after scraping’

(12) niu kis

‘waste coconut meat after squeezing’

Canoeing is another part of Matukar life reflected in the language. Villagers still build and sail traditional outrigger canoes, vessels that may have been instrumental in their original travel to the PNG coast. With canoe building comes a slew of terms used to describe the parts of the boat as well as sailing practices. Figure 3 shows a diagram of a Matukar canoe along with words describing canoe parts.

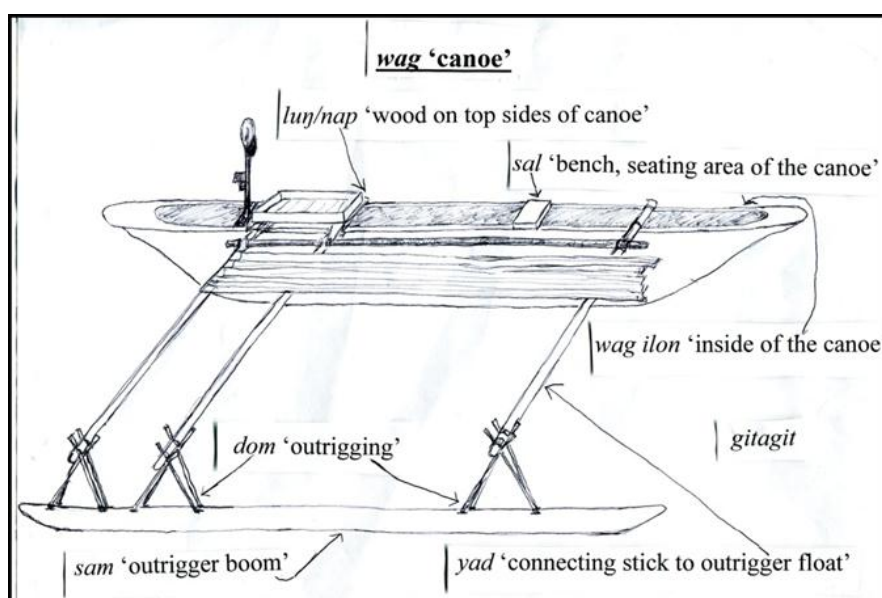


Figure 3. Matukar outrigger canoe terms

Matukar canoeing heritage is valuable because villagers still rely on seafaring knowledge for fishing and trading. However, it also may prove useful to anthropological studies on Pacific migration. And it is central to a huge database of knowledge about Matukar's coastal environment, which villagers have observed from canoes while learning to harvest food and navigate the Bismark Sea. Losing these canoeing terms reflects the forgetting of canoe-building practices, and more broadly a losing of villagers' knowledge of working with their environment. We see, from this description of coconuts and canoes in the lexicon, that Matukar contains a knowledge base inseparable from the traditional PNG coastal lifestyle. Since we have hardly begun to document and learn from this knowledge, it is clear that there may be much more important data that we have not yet encountered.

3.2.2 Human cognition in Matukar- the counting system

Every language gives important information for how the mind works, even outside of pure linguistic theory. Through language we can see how humans process information, classify objects, and work with abstracts concepts. For example, mathematicians interested in how the brain uses numbers have examined counting systems from around the world. They have found that many languages do not use the familiar base ten system of languages like English. Matukar is one such language. It has a (5, 20) quinary counting system which uses five as a base. This number system is common in Australian languages, coastal New Guinea languages, the Pacific coast of North America and many South American languages, as well as some African languages in Ivory Coast and Central Africa (Lean 1992). Out of 188 Austronesian languages studied in Papua New Guinea by ethnomathematician Glendon Lean, 39 had a (5, 20) counting system similar to that of Matukar.

According to Lean (1992), the (5, 20) quinary system has certain basic characteristics: it has distinct numerals from one to four (unlike our decimal counting system with numerals to 10), and then explicitly uses the word ‘hand’ and often ‘digit’ for combinations of five or higher. Therefore, there are two initial pentads, which can be described as (1, 2, 3, 4, 5/hand) and (6=5+1, 7=5+2...etc). The word for ten corresponds to ‘two hands’, often with an instruction for completion. Numbers higher than 10 include words for ‘foot/leg’, adding both feet and both hands upon reaching twenty.

Matukar’s counting system follows this pattern with some variants. The four initial numerals are monomorphemic, as seen in example (13):

(13) tahaik aru tol yawaiyawa
 ‘one’ ‘two’ ‘three’ ‘four’

The number 5 then employs the word for ‘hand’ (example 14). Matukar does not have a distinct word for hand- the word ‘my arm’, *numau*, is used in combination with other words to denote parts such as fingers which are located on the arm. This process is also used with the leg, *neu*.

(14) num -au tahaik
 arm.hand-1SG.POSS¹ one
 ‘five’

In example (15), we see a (5+2) combination for the number 7, using the word for ‘hand’ along with the word for ‘digit’ (or finger):

(15) num -au tahaik num -au kukun aru
 arm.hand-1SG.POSS one arm.hand-1SG.POSS digit-1SG two

¹ *Abbreviations:* 1-first person; SG- singular; POSS- possessive; REDUP- reduplicated

‘seven’

10 combines “hand” with a reduplicated form of ‘two’, and a final word, *tote*, with unknown meaning. *Tote* is most likely the word denoting completion of the pentad:

(16) num -au aru- ru tote
 arm.hand-1SG.POSS two-REDUP ?
 ‘ten’

Twenty was elicited with several different translations. In example (17), we see both ‘hand’ and ‘foot’, while example (18) is just ‘two feet’. In other languages which use just ‘feet’ for 20, ‘hands’ are said to be implicit (Lean, 1992).

(17) neu da num -au da
 leg.foot-1SG.POSS with arm.hand-1SG.POSS with
 ‘twenty’

(18) neu aru
 leg.foot-1SG.POSS two
 ‘twenty’

Elder speakers could not count higher than 20 in Matukar (Harrison and Anderson 2009b). Either they did not remember higher numbers, or Matukar does not have a second cycle. If it did, it most likely would continue with twenty and use an additive or multiplicative system to compound higher numbers.

Although the (5, 20) system might be one of the more common counting systems in Austronesian or Papuan languages, it is still unique to languages with small, indigenous speaker populations (Lean 1992). Unless languages such as Matukar are preserved, a complete study of numerals in human lexicon will be impossible (Harrison 2007). Matukar’s system is a piece in the development of number systems that reflects how humans think of numbers and describe

them linguistically. The strong connection of symbols of quantity to body parts are seen less in larger languages that have established decimal systems.

3.2.3 A unique identity

We have seen that Matukar preservation is important for the outside world because of the wealth of human knowledge it comprises and the importance of diverse data for research on human cognition. A final reason for revitalization concerns the identity of the language community. Revitalization is important because Matukar is rooted within the identity of Matukar villagers (see Section 1.5). In Papua New Guinea especially, each ethnic group is defined by its territory and language. Territory is not portable- when villagers go to the town of Madang or other areas of the country to trade, they are recognized by their language, even using it as a marker of their ethnic territorial heritage. Speaker Rudolf Raward explains, "It is important to speak the language because it keeps our identity. I don't look like a Matukar person physically, but if I speak Panau then it tells people I'm from my place." (Raward 2010b) We see here that being Matukar is not equated with physical representations of racial characteristics. Language is used as an identity marker instead.

Identity, according to Crystal (2000), "...is a summation of the characteristics which make [the community] what it is and not something else—of 'us' vs 'them'." Rudolf Raward notes that many of the cultural traditions of the villagers- what makes them Matukar- are dying out:

We have different ceremonies, like the Yam Festival. My mom used to have a separate yam house, but that's not anymore. We used to have our traditional prayers, but now it's not done, it's only a few groups that do that when there is a problem in the community. We have a special traditional religious ceremony where we call our spirits to help us

solve the problem. And fishing, hunting, dancing, singing - they're dying out. (Raward 2009)

Many of these activities, such as the prayers, ceremonies, and singing, are impossible to perform traditionally without Matukar. Even practices like fishing could be indirectly affected by the erosion of the language- we have no way of knowing the extent of Matukar influence in areas such as fish taxonomy. Loss of Matukar's unique religious and language domains may prevent the preservation of cultural traditions, since they were transmitted orally by the elders. History, solidarity, unity of the community- all are linked to the Matukar language.

3.3 Conclusion

If a language dies on average every 14 days, we are habitually losing the heritage, history, ideas, and systems that groups of humans acquired over centuries. Even with the internet at our disposal, we will not find much of the information that is incorporated into the words and phrases of an endangered language. Linguistically, scientists cannot afford to lose diversity of languages- they will lose entire fields of research. Outside of linguistics, endangered languages should be revitalized because they can greatly add to the known recordings of human factual knowledge in other sciences as well as research on human cognition. Most importantly, languages like Matukar are uniting forces for groups of humans that are experiencing pressure to lose characteristics which make them unique. Matukar, as a language and an identity, must be preserved.

4.0 Revitalization

The necessity of revitalization coupled with a reason for doing so does not always lead to action, but in the case of Matukar linguistic advocates from outside and within the community have fought for changes. On Table 2, the numbers from before 2009 reflected a lack of attention

in sociolinguistic areas normally addressed by linguistic fieldworkers. This lack directed fieldworkers and advocates to initial work centering on linguistic documentation, creating literacy materials and an orthography, and propagating the language in new domains. We will examine recent revitalization work in terms of these areas, and will then propose a language plan that can extend successful language maintenance into the future.

4.1 What has been done

National Geographic and the non-profit Living Tongues Institute for Endangered Languages have partnered to form Enduring Voices, a project that supports language maintenance and investigates language hotspots while raising awareness about language endangerment (Living Tongues Website 2010). In July 2009, National Geographic's Enduring Voices Team traveled to Papua New Guinea as part of their plan to visit major language hotspots around the world. Linguists K. David Harrison and Greg Anderson included Matukar in their assessment as a representative of Madang province's many small language communities (Harrison and Anderson 2009a). When they arrived at the village, they met with community members and recorded basic data (~200 words) in Matukar. These included colors, numbers, greetings, and phrases that reflected the use of pronouns and adjectives. Words were elicited from village elder Joe Mowab who was considered an expert speaker. Besides documentation, photographs were taken by team photographer Chris Ranier that would later be used to give a face to the speech community when describing the state of the language. Most importantly, Harrison and Anderson met Rudolf Raward and other villagers who were adamant in their support for language revitalization and were already looking for resources. This positive reception by Matukar villagers gave the Enduring Voices Team an opening to plan further

linguistic documentation efforts, including supporting Rudolf Raward in the development of a Matukar orthography and first book, and creating a Matukar-English talking dictionary.

4.1.1 Rudolf Raward and the orthography

Rudolf Raward learned fluent English in school and speaks Tok Pisin as well. For several years, he has been learning Matukar, which his mother Kadagoi speaks fluently (Mathieu-Reeves 2010). Raward recognizes the importance of Matukar to village identity and has supported preservation. He played an active role in the linguistic documentation efforts, especially advocating for a standardized orthography that could be easily used in new media. With the Latin alphabet, he developed a system that simplified many IPA pronunciations into usable symbols:

Table 7. Raward’s orthographical standardization for Matukar

IPA	Orthography
ŋ	ng
boʔip	boip
ə	e
ɔ	o
æ	a
ʌ	e
ɸ	f
ɛ	e
ŋg	ng

Raward recognized that this was a basic step towards literacy in Matukar- unless there was an orthography, there could be no educational curricula in the language. Since “literacy is linked with social and economic development” (UNESCO 2003), the absence of an orthography was an effective bar to incorporating Matukar into educational, social, and economic growth. With the new system, Matukar had improved from 0 in the UNESCO “Materials for Language Education and Literacy” factor to a 1.

4.1.2 First Book in Matukar

By April 2010, the Living Tongues Institute for Endangered Languages had made contact with several endangered language communities around the world which were working to preserve their language and welcomed support from linguists. In order to give the most sustainable help, Living Tongues brought together language activists from each of the communities for a workshop in Santa Fe, New Mexico that focused on training the speakers in basic language documentation techniques and use of equipment. Participants were trained in digital storytelling, desktop publishing, videography/photography, and use of language technology kits (Harrison and Anderson 2010).

Rudolf Raward was a representative from the Matukar community. Matukar is relatively isolated and it is rare for villagers to leave the country, especially to go to the US. During the workshop training sessions, Raward produced the first book in Matukar, which details his background and the story of his travelling to the US. The book, *Ngau Rudolf*, uses his orthographical system as well as photographs taken by the Enduring Voices/Living Tongues team during their visit to Matukar (Figures 4 and 5).

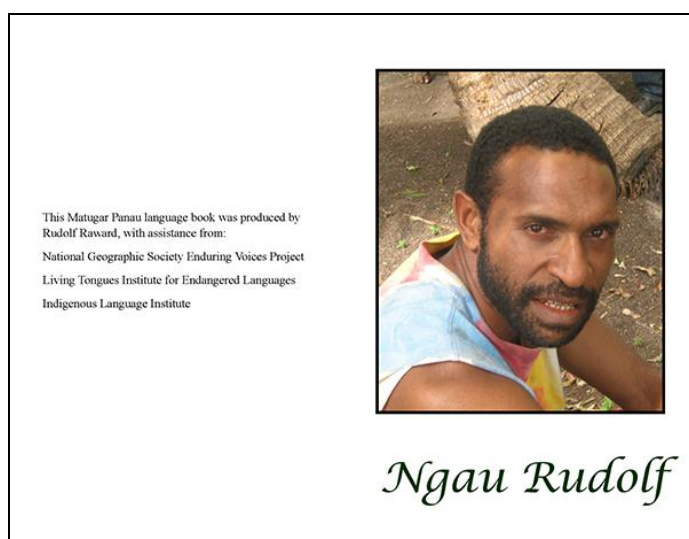


Figure 4. Cover of Ngau Rudolf (Raward 2010a)

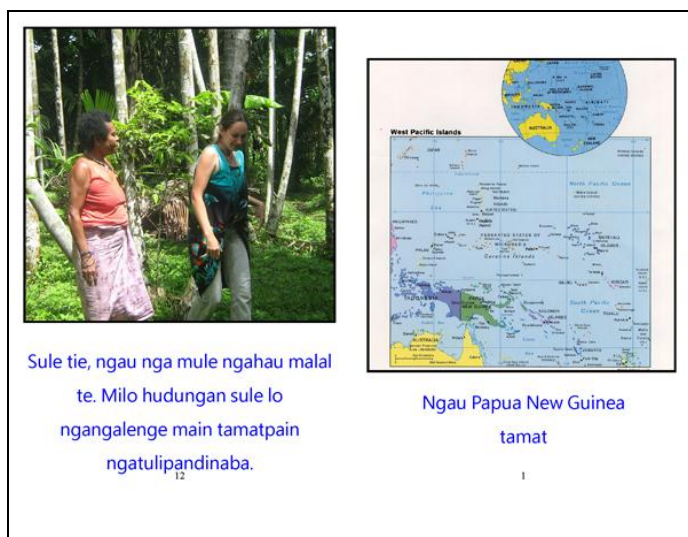


Figure 5. Pages 12 and 1 of Ngau Rudolf (Raward 2010a)

Ngau Rudolf translates as “I, Rudolf” (See Example 1 for full transcription). It is a personal story about a cross-cultural experience of one who had never traveled from Papua New Guinea. However, it is also a depiction of revitalization from the outlook of a language activist inside an endangered language community. From Raward’s description of his homeland and people to the conclusion “I’ll tell everyone the things I learned in school,” it is clear that his view of revitalization has developed into a crucial vision that involves everyone in his community. At the workshop he saw that this was not just a “white man’s” cause, but one shared by many other endangered language speakers from around the world. Therefore, with the first book in Matukar comes a clearly-stated purpose to spread the knowledge needed for community efforts towards revitalization: Raward is at once taking a step towards literacy and a step towards changing language attitudes.

(19) Translation of Ngau Rudolf by Rudolf Raward (2010a)

Ngau Rudolf
I am Rudolf

Ngau Papua New Guinea tamat
I'm from Papua New Guinea

Ngahau malal dabok yangan Madang.
My big town is Madang

Ngahau malal natun yangan Matugar.
My small village is Matugar.

Ngahau nen nga meninge, tibud hadi malal te ngago.
I left my mother and I will travel to the white mans' place.

Tamatpain hudungan dibude nigeuwai ditame.
Men and women together came and cried for me.

Ngahau malal natun ngameninge, tibud hadi malal daboka ngawe.
I left my small village and traveled to the white-mans' place.

Tibud hadi malalte ngasuse, milomilo do tamatpain kasik ngaitadine.
I arrived in the white-mans' place, I saw many things and many men and women.

Tibud hadi malal yangan Santa Fe te ngasuse. Manaya sule lo ngawe.
I arrived at the white man's place called Santa Fe. There I attended training.

Sule ta yangan Living Tangs Institut te milomilo kasik dipitenganauwe.
At the Living Tongues Institute I learned many things.

Nal hudungan sule aloa, ngam hudungan milo aben te ngamadop milo ngamaningokai.
At the end of every class, together we have dinner at restaurants.

Tidom ta ngam tahaiktahaik ngahamam malal wai ngam gamuke, ngahamam nang wai ngamgamuke.
One night each of us talked of our place, we talked about our language.

Sule tie, ngau nga mule ngahau malal te.
Finally, I came back to my village.

Milo hudungan sule lo ngangalenge main tamatpain ngatulipandinaba.
I'll tell everyone the things I learned from school.

4.1.3 The Matukar Talking Dictionary

Even though Rudolf Raward had been successful in establishing an orthography and introducing the possibility of literacy in Matukar, no one had documented the language beyond a basic word list (188 items) by Malcolm Ross (Greenhill 2008) and a collection of data by linguist John A. Z'Graggen (1969, 1975, 1980, 1992). Linguistic documentation is necessary in any revitalization process, because it introduces the language as new data to the linguistic world, provides a basic understanding from which to work out a plan for education/preservation, and safeguards against an entire body of knowledge being lost if the language does in fact die out within the community (UNESCO 2003). This is the most obvious way a linguist could support Matukar's revitalization process and raise awareness about Matukar to the linguistic community.

The Enduring Voices team/Living Tongues Institute, after finding community support for revitalization, decided that a talking dictionary project would be the best way to begin initial documentation. Talking dictionaries, or web-based endangered language/English dictionaries that connect actual sound files of endangered language speakers to words or phrases in the lexicon, provide a format for organizing data into a usable resource for linguistic communities (Living Tongues Website 2010). Living Tongues has already made several dictionaries for other endangered languages, and has found it to be an ideal way to document the language while introducing it to a new domain. By launching a dictionary of Matukar on the internet, linguists are hoping that the younger generation of villagers will be more inclined to accept the language as pertinent to the modern world.

Graduate student Danielle Mathieu-Reeves, a Living Tongues fellow, went to Matukar in order to compile data for the dictionary. She arrived in February 2010 and in the next two

months elicited more than 3,500 words and phrases from speakers in the community, mostly elders. Kadagoi Rawad, Rudolf Raward's mother, became the main resource for the talking dictionary. Mathieu-Reeves first elicited phrases from multiple speakers in order to identify standard expressions and possible dialect variance. Then, she recorded the data with Kadagoi, assembling a set of sound files with uniform phonemic pronunciation. Since English is the language of education in Papua New Guinea, many of the villagers were able to help with interpretation and translation. Mathieu-Reeves compiled the Matukar words and their English translations onto an Excel spread sheet and labeled the corresponding audio and picture files. By transcribing, organizing, and translating the data, Mathieu-Reeves had the structure of the dictionary in place by the time she left Matukar.

In order to launch the dictionary online, I extracted sound files from the Matukar recordings using Praat and entered them into the spread sheet. Jeremy Fahringer, project manager of Enduring Voices, and I cleaned up duplicates and mistakes in the entries. I also transcribed remaining data from the Harrison and Anderson's initial visit to Matukar. We then uploaded the data and added pictures taken during Mathieu-Reeves's research as well as an about page with information on Matukar (see Figure 6). As are other Living Tongues talking dictionaries, the Matukar dictionary is "hosted on a Linux server at Swarthmore College with full backup and RAID array redundancy. It is programmed in the MySQL database management system, which support[s] multi-user access" (Living Tongues Website 2010). The Matukar-English Talking Dictionary now has 3045 entries and can be found at (<http://matukar.swarthmore.edu/>).

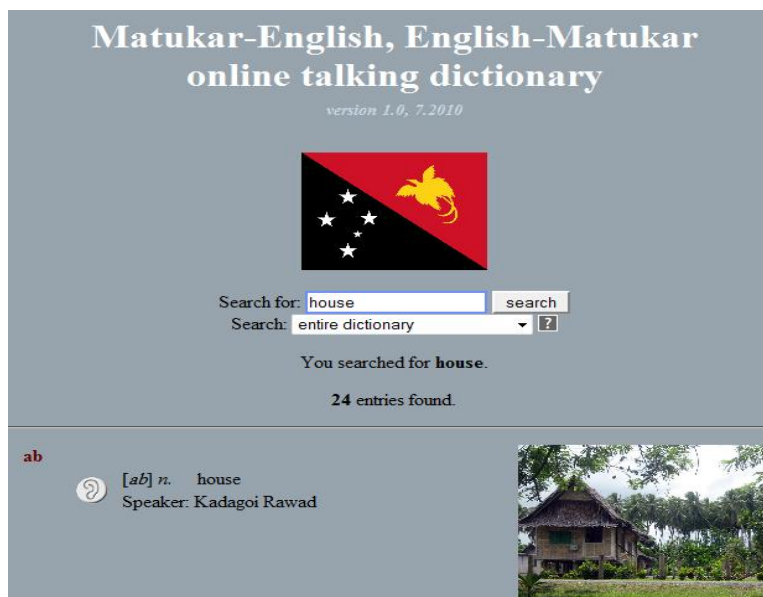


Figure 6. Interface of the Matukar talking dictionary.

4.1.4 Conclusion

From an almost complete absence of linguistic documentation, Matukar has moved to an orthography, book, and dictionary within a year. Projects were community-focused, not research-focused, and have opened doors for Matukar villagers to begin documenting their own language. In addition, Matukar has moved into the internet domain with the talking dictionary. Making Matukar available on the internet attacks the problem of language shift resulting from negative language attitudes that view the language as irrelevant in the modern world. Matukar has moved upwards in many factors on the UNESCO assessment of language endangerment- a major accomplishment for the endangered language community.

4.2 Language Planning: What lies ahead?

Although Matukar has been researched and partially documented, it is still on the path to extinction if left alone. Only if Matukar begins to acquire speakers under the age of ten will it become self-sustainable. In this section, we will look at possible revitalization actions- a language plan- that could result in native speakers among the youngest generation.

Language planning consists of setting revitalization goals and laying out plans to those ends. It is important because it gives the process of revitalization a focus and unites language advocates in the community. It also centers responsibility on the community instead of on linguists and researchers (Hinton 2001). Hornberger (1997, cited by Hinton 2001) establishes four types of language planning that fall in this category of community-based revitalization. “Status planning” concerns the growth and maintenance of the language- goals towards making the language official, deciding which dialect is considered “standard,” and when it would be used. “Acquisition planning” describes who will teach the language and how to introduce it into new domains, especially in the school system. “Corpus planning” is about adapting the language for a modern community, whether that includes creation of vocabulary or standardization of the existing lexicon. Finally, “Writing” deals with all aspects of orthography formation and propagation. To form a language plan, then, there must be an initial stage of research among the community, followed by a formation of goals and a strategy centering on the four types of language planning, followed by implementation of the plans, continuing with evaluation of implementation and further planning (Hinton 2001). In the next parts, I will introduce examples of what each of these stages might look like for Matukar.

4.2.1 Pre-planning

In the preplanning stage, it is important to identify language advocates within the community, forming a “committee” of people motivated for revitalization. These people, whether they are leaders, elders, or just interested community members, can work together to ascertain the community’s needs and form goals targeting them (Hinton 2001). Matukar advocates would include Jason Bogg, who is interested in writing picture books in Matukar (Mathieu-Reeves 2010) and Rudolf Raward. In order to set goals, it would be important to first

give surveys to the community to compile information about current Matukar use among families, past Matukar use in the home, ability to understand and speak Matukar, and Matukar use in school and among peers. Secondly, a survey consisting of language attitude assessment, including support for Matukar in schools and ability/willingness to help with revitalization, should be administered. These surveys would provide a qualitative assessment of revitalization need and support (Hinton 2001).

Next, the committee would decide what language role Matukar should play in the modern language community (Hinton 2001). They would set goals concerning language abilities, language attitudes, ideal Matukar use by the community, and the parts of the community lifestyle that harm or help language propagation. Ideally, for Matukar to be considered relatively “safe” on any language scale, it would have to have speakers of all ages, greater linguistic documentation (including a grammar), official use in government education within the community, and extensive/exclusive use in a least one language domain. In this case, Matukar village might consider aiming for bilingualism in Tok Pisin and Matukar. However, it is important that Matukar be given a “niche” within the community that Tok Pisin does not share.

The committee would then assess resources for language revitalization (Hinton 2001): Human resources, such as language advocates who responded to the survey, the Living Tongues Institute/Enduring Voices, community members with useful skills in teaching, etc.; documentation resources including Raward’s orthography and the language kit from the revitalization workshop; institutional resources like SIL and the PNG government’s educational material, which has been designed to be used in any vernacular language for the introductory grades, as well as teaching workshops aimed for teachers in vernacular languages; funding sources such as grants and equipment such as a computer and internet, which Matukar might not

currently have; and finally any barriers to revitalization programs, such as exclusive instruction in English for all PNG schools from third grade onwards (see Section 1.9).

The final stage of preplanning would consist of a formation of language policy that describes the goals and purpose of revitalization, as well as the rights of community in the language revitalization process (Hinton 2001). Like a constitution, it is a formal proposal outlining the reasons behind preservation efforts for future generations.

4.2.2 Planning strategies

Ideally, the community's language committee would focus plans on language transmittance to the younger generation. There are three current goals that were voiced by various members of the community, and they all concern this problem of transmittance (Mathieu-Reeves 2010): two villagers were hoping to build a school in the village which would teach Matukar and teach in Matukar, Jason Bogg, as mentioned above (Section 4.2.1), plans to use the computer and camera to make Matukar picture books, and Rudolf Raward is working for internet in the village which will give villagers dictionary access. After other goals are incorporated and needs assessed, villagers would map out a timeline for accomplishing these plans. For example, the community might approach the government with an outline of how they plan to build a schoolhouse for vernacular education in order to acquire resources such as teacher training and educational materials. Then they might build a schoolhouse and plan on opening after curricula is prepared. These strategies would fall under "status planning" and "acquisition planning." "Corpus planning" could include plans for an expansion of the talking dictionary and creation of vocabulary for modern everyday life (as well as documentation of Tok Pisin borrowings).

4.2.3 Implementation and evaluation

Once needs are assessed and met, the language plan can be put into action. Every year, a reassessing and readapting of a five year plan would be necessary. It is important to stress that language planning is a community responsibility, not a linguists'. A successful plan will help community members teach their children Matukar, which will not succeed if only linguists or outside advocates have planned the strategies. The purpose is not to "save a language" but support a language community. If the language community persists, Matukar will never die.

5.0 Conclusion- modern but in Matukar

When we first looked at Matukar before 2009, it was largely undocumented and had no orthography. Fluent speakers were of the oldest or parental generation, and Tok Pisin was used in informal language domains. We saw, according to UNESCO ratings, that Matukar was severely endangered in language vitality and documentation factors, because the small speaker population added to the risk. With a closer look at the linguistics of Matukar as well as its links to human cognition, village identity, and human knowledge base, there are clearly compelling reasons for language revitalization.

Our efforts have begun to address the need for community-based revitalization projects. First and most importantly, we have found language advocates within the community that have already begun revitalization work individually and welcome support. No revitalization will be successful without positive language attitudes from speakers and a willingness to work towards language documentation and propagation. Rudolf Raward is an invaluable player in the process. If he can pass his vision for preservation of Matukar culture and language to the community, as he has already begun to do through his book, other speakers may become language advocates working towards transmitting the language to their children. The major part of our work so far has been supporting Rudolf and other advocates through the training workshop and language

technology kits. They now have further resources that they can use to begin language planning for the future.

Secondly, we have begun documentation of Matukar in a way that is linguistically helpful but also benefits the community. Through the talking dictionary, we now have a small corpus that is easily searchable and can be used by any linguist to compare Matukar to other languages and analyze its phonetics and lexicon. This database of knowledge is a valuable starting point for any long-term projects such as grammars, dictionaries, and translations for Matukar. However, the dictionary's greatest value online is the message that it sends to speakers in the community. Once they have the internet, which should shortly follow this year's installing of electricity, speakers will see their language made available worldwide to people from any country. They will see that it is found in a new and modern language domain, and that there is nothing intrinsic in the language that can keep it from being a viable method of communication in any sphere. Revitalization efforts must target the youngest generation. The talking dictionary is a way to address negative language attitudes carried by children who daily see other languages used in place of Matukar in every language domain. Children who are able to grasp the value of Matukar and are open to bilingualism can begin the shift needed to ensure Matukar's vitality in years to come.

We must consider, though, what the purpose of revitalization is in the eyes of the community and of linguists. For the community, we have seen a linking of language to traditional culture. As Raward talks about language revitalization, he also stresses the importance of dance steps, yam houses, and religious rituals. All of this encapsulates what it means to be Matukar. Revitalization is no longer an end goal- it is part of a bigger struggle to keep the Matukar heritage.

Here is where the interests of language advocates have the potential to diverge. Some may think that “being moderns but in Matukar” is all that is needed; once the language is ‘safe’- being effectively transmitted, documented, and used in exclusive domains- the revitalization goal has been achieved (Fishman 1991). But if revitalization is a means to an end, and if that end is a connection to the unique identity of the community, simply speaking the language as if another lingua franca in the modern world will not be sufficient for advocates such as Raward. There must be the added element of teaching traditional prayers and songs or fishing and canoeing terms to the younger generation, giving them the meaning behind the linguistic encoding. In this way there is always a deeper motive for holding on to Matukar; and there must be a motive, for the struggle to maintain a small language can be just as involved as revitalizing it.

At the same time, this deeper motive must continue to be supplemented with the presence of Matukar in new language domains. Speakers may not be just “moderns but in Matukar,” yet they will eventually be “modern but in Matukar.” In a modern Matukar community, we may see children composing new songs or stories in Matukar and people using the language on the internet. This is what prompts retention in the youngest generation. Matukar use might look very different from what a language advocate could want or predict now.

Therefore, as Matukar heads towards revitalization, there will be tension between Matukar use of the past and its connection to heritage, and Matukar as propagated by younger generations. For example, the value of exclusively oral transmission must be reconciled with new writing systems implemented by a community that sees the emphasis speakers of dominant languages have put on writing. Some resolution is seen in projects like the talking dictionary, where Matukar is on the internet but at the same time includes recorded items of cultural importance by elder speakers.

However, this very tension is what makes Matukar so valuable. It is not now a global language or a lingua franca. It is a language with a people; it is an identity. Preserving Matukar means preserving the dynamic of an ever-changing language that is rooted to a specific land and ethnic group. If revitalization is successful, we will see that to be modern in Matukar is to connect one's language to one's person in a way that promotes development without losing the foundation of being.

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Appendix A- Matukar Data

Table 1. Comparison of Matukar core terms with terms from selected Oceanic languages. (Section 1.4.3) (PO = Proto-Oceanic)

English / PO	Matugar	Takia	Samoan	Rapanui	Kiribati	
all	udolu	huduŋan	fdyan	ʔuma	paurō	bane
ashes	madagel	yai tae-n	lefulefu	ʔeo-ʔeo	mannaŋ	
bark	ai suluŋan	panu	paʔu	kiri miro	kunin te kai	
belly	tian	luwan	lwa-	manava	kōpū	te abein
I	au	ŋau	ŋai	aʔu	au	ŋŋai
bird	manuk	mam	aŋkanak	manu-lele	manu	te man ni kiba
black	maqeto	gurgur	tdom-tbu-n	uliuli	ʔuri-ʔuri	rorō
blood	draraq	dar	dar	toto	toto	terarā
bone	suri	tutu	tatu	ivi	ivi	terī
breast	susu	susun	su	susu	ʔoʔone	te mmamma
cloud	kaik	tim tae-n	ao	raŋi	te naŋ	
cold	madid	bbarum	mālūlū	takeʔo	m^waitoro	
come	lako	so	-palu	sau	oho mai	roko
mai						
dog	gaun	goun	maile	paiheŋa	te [kamea]	
dry	masa	gagauwe	gos	maŋo	paka	m ^w au

English / PO	Matugar	Takia	Samoan	Rapanui	Kiribati	
ear	taliņa	kududen	kududo-	taliņa	tariņa	te taniņa
eye	mata	matan	mala-	mata	mata	te mata
back	takuru	patu:	patu-	papā-tua	tuaʔivi	teakū
fire	api	yau	yai	afi	ahi	ahaņ
fish	ikan	wasiņ	i	iʔa	ika	te ika
good	ma-pia	uyan	uya-	lelei	riva-riva	raoiroi
hair	raun	huhulun	grma-rou-k	lau-ulu	puʔoko	iran atū
hand	lima	numau (my hand)	bani-	lima	rima	tebai
head	qulu	garmau (my head)	grma-	ulu	puʔoko	te atū
person	taumata	tamatpaiin	tamol-pein	taņata	taņata	te aomata
leaf	rau	yaur, ai yur	irou	lau	raupā	tebā
liver	qate	aten	ate-	ate	ʔate	te ato
long		malain	mlae-	ʔumi	roa	anānau
louse	kutu	ut	ut	ʔutu	kutu	te uti
man taumwaqane person: taumata		tamat	tamol tama- (father)	tama (father)	taņata	te tama (father)
sand	qone	lul	lul	oneone	ʔone	te bike
meat	pisako	mudan	mda-	ʔaʔano	kiko (taņata)	te iriko

English / PO	Matugar	Takia	Samoan	Rapanui	Kiribati	
moon	pulan	kalam	kalam	māsina	mahina	nam ^w aina
die		mate	mat	oti	mate	mate
mouth	ŋujuŋ	awan	awa-	ŋutu	haha	te wī
neck	ruqa	buran	bro-	ua	ŋao	te roroa
new	paraqu	haun	fou-	fou	ʔāpī	[bōu]
night	boŋi	tidom	tdom	pō	Pō	te boŋ
one	sa	tahaik	ksaek	tasi	tahi	teuana
rain	qusan	urom	ui	ua	ua	te karau
red	meraqa	garan	dara-n	mūmū	mea-mea	uraura
road	jalan	dal	dal	ʔau-ala	ara	te kawai
woman	papine	paiin	pein	fafine	viʔe	te aine
skin	kulit	suluŋau	suŋulo-	paʔu	kiri (taŋata)	te kun
small	rikiq	natun	tsa-	Iaʔitiiti	ʔiri-ʔiti	uarereke
smoke	qasu	yao kas	-rae	asu	ʔau	te bubu
star	pituqon	burait	patui	fetū	hetuʔu	te itoi
tongue	mea	balen	bale-	laulaufaiva	ʔarero	te newe
tooth	nipon	alon	gama-	nifo	niho	te wī
two	rua	aru	raru	lua	rua	uoua