

SOCIOLINGUISTIC SURVEY REPORT  
FOR THE TONA AND MAGA DIALECTS  
OF THE RUKAI LANGUAGE

GREG HUTESON

SIL International

2003

## Contents

- 0 Introduction and Goals of the Survey
- 1 General Information
  - 1.1 Language Classification
  - 1.2 Language Location and Dialect Information
  - 1.3 Population
    - 1.3.1 Rukai Population
    - 1.3.2 Maolin Township Population
  - 1.4 Accessibility and Transport
    - 1.4.1 Roads
    - 1.4.2 Public Transport
  - 1.5 Religious Adherence
  - 1.6 Schools/Education
    - 1.6.1 Types, Sites, and Size of Schools
    - 1.6.2 Attitude toward the Vernacular in the Schools
  - 1.7 Facilities and Economics
    - 1.7.1 Supply Needs
    - 1.7.2 Medical Needs
    - 1.7.3 Commercial Ventures
    - 1.7.4 Governmental Facilities in the Area
  - 1.8 Traditional Culture
    - 1.8.1 History
    - 1.8.2 Contact with Other Cultures
  - 1.9 Linguistic Research in the Language Area
    - 1.9.1 Past Research
    - 1.9.2 Current Research
    - 1.9.3 Materials Published in the Language
      - 1.9.3.1 Scripture
      - 1.9.3.2 Primers
- 2 Methodology
  - 2.1 Subjects
  - 2.2 Questionnaires
  - 2.3 Dialect Testing
    - 2.3.1 Rationale for Imitation Tests
      - 2.3.1.1 Sociolinguistic Background and Rationale
      - 2.3.1.2 Demographic Rationale
- 3 Sociolinguistic Issues
  - 3.1 Ethnolinguistic Identity
  - 3.2 Perceived Ability

- 4 Ethnicity and Language Use Issues
  - 4.1 Testing Production in the Local Dialects
    - 4.1.1 Maga Dialect
    - 4.1.2 Tona Dialect
  - 4.2 Ethnic Composition of Villages
  - 4.3 Education of Local Residents
  - 4.4 Perceptions of Language Use
    - 4.4.1 In Maolin Village
    - 4.4.2 In Tona Village
  - 4.5 Discussion
  - 4.6 Observations Concerning Wanshan Village
  - 4.7 Summary
  - 4.8 Areas for Further Study

## 5 Recommendations

### Appendices

- A Summary of Answers to the Questionnaires
  - 1 Maolin Village Questionnaire
  - 2 Tona Village Questionnaire
- B Imitation Tests
  - 1 Maga Dialect Imitation Test
    - 1.1 Test Sentences
    - 1.2 Translation of Test Sentences
  - 2 Tona Dialect Imitation Test
    - 2.1 Test Sentences
    - 2.2 Translation of Test Sentences

### References

## 0 Introduction and Goals of the Survey

The following is a report of a sociolinguistic survey conducted among the Rukai of Maolin Township, south-central Taiwan, by Greg and Bonnie Huteson.<sup>1</sup> Greg Huteson and Lon Diehl visited this area in August 2000. The initial survey-related trip to the township took place in April 2001. Zhong Si-jin (Kai Nu-an), a Rukai Presbyterian pastor, accompanied Greg Huteson and Lon Diehl and introduced them to township officials. The second survey trip took place in May 2001. This was followed by three brief trips during July and August 2001.

The purpose of the survey was to determine whether Maolin Township Rukai could use existing printed materials in the Budai Rukai dialect, which is spoken in Wutai Township, Pingtung County. The potential for use was assumed, based on the genetic similarity of the Budai dialect and the Rukai dialects of Maolin Township.

Background research into the language situation indicated that many local Rukai, particularly younger residents, are not fluent in the local dialects. It is reasonable to assume that residents who do not have the township dialects as part of their linguistic repertoire are unable to use the Budai materials. Therefore, it was decided that a survey of native speaker-like fluency in the local dialects was of first priority. We needed to determine that a majority of residents were fluent in a local variety of Rukai before investigating comprehension of the Budai dialect materials would be warranted. With this in mind, the focus of the survey was the percentage of township residents who exhibit native speaker-like fluency in any of the dialects of the township and the correlation of native speaker-like fluency with gender and age. To that end, the goal of the survey was to test fluency using dialect imitation tests in Tona, Maga, and Mantaoran, the three dialects of Rukai that are spoken in Maolin Township.

## 1 General Information

### 1.1 Language Classification

The Rukai language is classified by the *Ethnologue* as: “Austronesian, Formosan, Tsouic” (Grimes 2001); the Tsouic classification is debated. Rukai is one of

---

<sup>1</sup>We would like to thank Elizabeth Zeitoun and to gratefully acknowledge her assistance with the survey. The survey would not have been accomplished without her kind support, encouragement, and feedback. We would also like to acknowledge Elizabeth’s provision of the candidate sentence sets for the imitation tests. Our warm thanks to our colleagues, Peggy Milliken and Carla Radloff, for their significant assistance in developing the imitation test method. We would also like to thank Victoria Der-hwa Rau for her suggestions regarding survey methodology and her suggestions for changes to candidate sentences. We would like to express our appreciation to Hsin Tien-hsin and her language informant, Ninaa Mumuni, for their assistance in checking and recording sentences in the Maga dialect and to Lin Hui-chuan for her assistance in checking and recording sentences in the Mantaoran dialect. Our thanks also to Ke Ah-xiang for her hospitality and her assistance in locating survey subjects in Tona Village, and to Wei Ding-shang and Ninaa Mumuni for their assistance in locating survey subjects in Maolin Village. Elizabeth Zeitoun, Greg Aumann, and Victoria Der-hwa Rau reviewed earlier versions of this report and provided many useful suggestions.

approximately a dozen Formosan languages currently spoken in Taiwan (see map 1). Hsin (2000:7–8) gives a brief summary of the debate on the classification of Rukai. Dyen (1965:287) and Ferrell (1969:25) are among those who argue for a Paiwanic designation for Rukai (cf. also Ho 1983). More recently Starosta (1995:695) posited that Rukai was the first language variety to separate from proto-Formosan. Zeitoun (2001, personal communication) argues against Starosta’s claim on linguistic and historical grounds.

## 1.2 Language Location and Dialect Information

The Rukai are located in south-central and southeast Taiwan in Pingtung, Taitung, and Kaohsiung Counties (see map 2).<sup>2</sup> The Tanan, Budai, Labuan, Maga, Tona, and Mantauran language varieties are commonly referred to as dialects<sup>3</sup> of Rukai. Tanan, Budai, and Labuan form one dialect group. Maga and Tona are generally regarded as forming a second dialect group although the inclusion of Maga, Tona, and Mantauran under the Rukai rubric is debated. Shelley (1978) argues that Maga-Tona and Mantauran are distinct languages (cf. Ferrell 1969), but his is a minority view.

The Tanan dialect is spoken in Peinan Township in Taitung County in southeast Taiwan. Budai and Labuan are spoken in Wutai Township in Pingtung County in the southwest of Taiwan. Maga, Tona, and Mantauran are spoken in Maolin, Tona, and Wanshan Villages of Maolin Township, Kaohsiung County. The latter three villages are commonly referred to in the literature as “the Lower Three Villages”, a reference to their altitude. There is broad consensus that the Rukai dialects are not mutually intelligible (Li 1977; Zeitoun 1993; Yeh 1998).

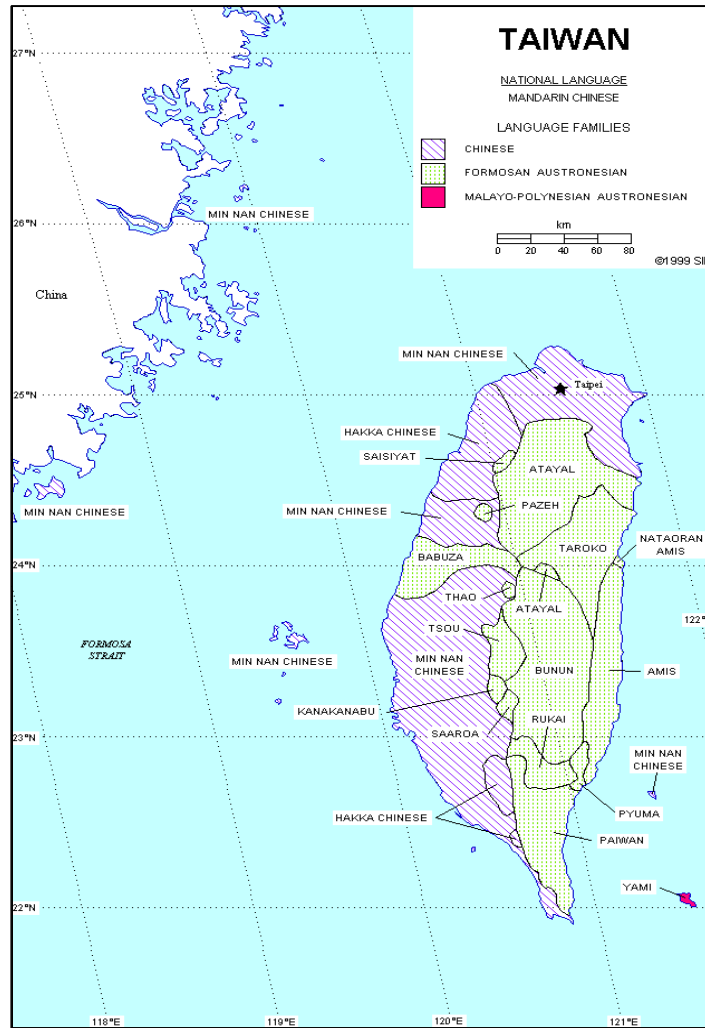
Historically, *Dukai* [ɖukai] was the autonym of the Budai, Labuan, and Tanan speech communities. Outsiders later applied the term *Rukai*, an anglicized version of the Japanese form of the autonym, to the Lower Three Villages as well.

Neighboring languages spoken by the ethnic Han majority are Mandarin, Taiwanese, and Hakka. Neighboring Formosan languages are Bunun (with respect to the Lower Three Villages), Paiwan (with respect to the Budai and Labuan Rukai), and Puyuma and Amis (with respect to the Tanan Rukai).

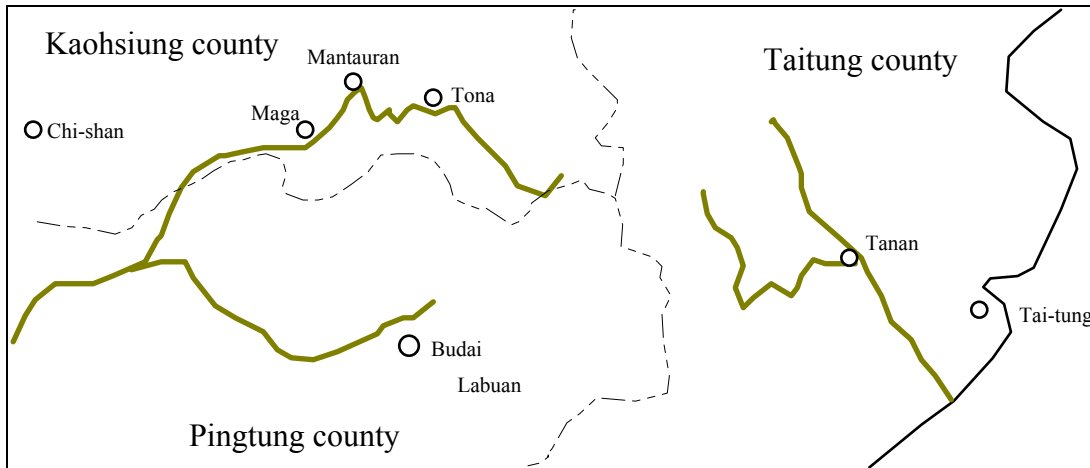
---

<sup>2</sup>In Taiwan’s governmental system, the island of Taiwan (with the exception of the cities of Taipei and Kaohsiung) is a province under the jurisdiction of the national government. Counties and provincial municipalities are under the jurisdiction of the provincial government. County municipalities, rural townships, and urban townships fall under the purview of county governments. Maolin Township is a rural township in Kaohsiung County. Villages are the highest administrative unit within rural townships. The population of county municipalities and rural and urban township is inclusive of all the individuals who live within the geographic boundaries of the municipality or township, regardless of whether the individual lives within the boundary of a village. Thus, the population of Maolin Township may include individuals who are not residents of a particular village.

<sup>3</sup> In the literature on Formosan languages it is common practice to translate the Chinese term *fangyan* as ‘dialect’. In this context ‘dialect’ does not necessarily imply intelligibility.



Map 1: Distribution of Formosan languages (from Grimes 2001)



Map 2: Distribution of Rukai dialects (from Zeitoun 1995:102)

### 1.3 Population

#### 1.3.1 Rukai population

The Rukai population is 10,549 according to November 2001 figures from the web site of the Council of Aboriginal Affairs of the Executive Yuan, ROC (2001). In Taiwan an individual's official ethnicity is the same as that of his or her father.

#### 1.3.2 Maolin Township Population

March 2001 figures from the Maolin Township administration office indicate that the population of the township is 1,763. Most (91%) of the township population is classified as "mountain aboriginal", a general term that encompasses most of Taiwan's Austronesian peoples. There are a number of adult Bunun and Paiwan residents in the township, mostly female, the result of exogamous marriages.

The official populations of the Lower Three Villages as of March 2001 are as follows: Maolin Village 795, Tona Village 598, and Wanshan Village 370. These figures must be interpreted in the context of the long-standing practice of rural-born residents of Taiwan to retain one's household registration in one's hometown even when one lives outside the area for most or even all of the year. The year-round populations of the Lower Three Villages are certainly lower than the official figures. The largest discrepancy is with regard to Wanshan Village. Zeitoun (2001, personal communication) suggests that Wanshan's year-round population is approximately 50 to 60.

### 1.4 Accessibility and Transport

#### 1.4.1 Roads

The Maolin National Scenic Area (茂林國家風景區) is coextensive with Maolin Township. The scenic area and the township are accessible by Provincial Highway 27.

Entrance to the scenic area is NT\$80 per vehicle for nonresidents. An eighteen-kilometer paved road connects the township's three villages. The road's terminus is the Tona Hot Springs (多納溫泉), a tourist destination. The road is subject to landslides, particularly between Wanshan Village and Tona Village, but landslides are generally cleared within a few days.

#### **1.4.2 Public Transport**

Most travel to Maolin Township is by private car. Commercial transport by taxi is possible from Kaohsiung City or Pingtung City. Tourist buses travel to the township on weekends and during vacations but generally restrict their stops to Tona Village and the Tona Hot Springs. Many township households own a car or van, and most adult or older teenage residents own a motor scooter. Travel within the township is generally by motor scooter. A taxi operates out of Wanshan Village.

### **1.5 Religious Adherence**

According to Lai (1995:185), Christians comprise 81% of the Rukai population. The following denominations have congregations in Maolin Township: the Chinese Baptist Convention (Maolin Village), the China Free Methodist Church (Maolin Village), the Taiwan Seventh Day Adventist Church (all three villages), the Presbyterian Church in Taiwan (all three villages), and the Chinese Regional Bishops' Conference (Wanshan Village).

### **1.6 Schools/Education**

#### **1.6.1 Types, Sites, and Size of Schools**

Schools were first established in Maolin Village by Japanese authorities in 1917 and in Tona Village in 1926. These schools were closed at the end of World War II, but the Kuomintang government opened a school in Maolin Village the following year. In 1952 a separate school was established in Tona Village, and a class was begun in Wanshan Village. The Maolin school assumed responsibility for the Wanshan class in 1960.

When nine years of education became compulsory in 1968, the schools changed their names to Maolin National Elementary School and Tona National Elementary School. Maolin Village established a junior high school in the late 1990s, and the school was renamed Maolin National Junior High and Elementary School. The Wanshan class was upgraded to Wanshan National Elementary School in 1979 but was reclassified as a class (a school with a single multi-grade class) eight years later. The last Wanshan class was held in the 2000 academic year.

The enrollment at the Maolin National Elementary School for the 2001 academic year is 107 or 95% of the current primary school age population. We were not able to



ascertain current enrollment at the Maolin junior high school. Enrollment at Tona National Elementary School for the 2001 academic year is in the mid-30s.

### **1.6.2 Attitude toward the Vernacular in the Schools**

The national government instituted a Mandarin-only education policy in the 1950s. This policy was gradually discarded beginning in 1989 when newly elected mayors and county magistrates from the opposition Democratic Progressive Party actively encouraged the establishment of mother-tongue classes in elementary and junior high schools in their districts. A mother-tongue class was added to the Maolin Village elementary curriculum in the 1995 academic year. The Maolin Village Presbyterian Church published the textbook for the class.

In the 1998 academic year the Ministry of Education brought its policy in line with the local development of mother-tongue classes and officially permitted the teaching of elective mother-tongue courses one to two hours per week in the third grade and higher grades in elementary school. In 2001 instruction in the “mother tongue” for one hour per week became a required part of the elementary first through sixth grade and junior high curricula. To date the Tona Village Elementary School has been unable to find a teacher to teach these classes.

## **1.7 Facilities and Economics**

### **1.7.1 Supply Needs**

Most residents of Maolin Township are farmers. Rice and millet seem to be the main food crops, grown for local consumption; betel nut seems to be the main cash crop. Residents purchase foodstuffs and other goods in Gaoshu Township, Pingtung County’s Santimen Township, other nearby townships, or Kaohsiung City, which is an hour’s drive away. The population of Santimen Township largely consists of Paiwan and Rukai residents, with Paiwan residents in the majority.

### **1.7.2 Medical Needs**

A public health office is located in Maolin Village. In addition, there are approximately ten hospitals within an hour’s drive of the township. In 1995 Taiwan implemented a national health insurance program, and in February 2000 the national government began to subsidize monthly insurance premiums for Aborigines.

### **1.7.3 Commercial Ventures**

A number of small storekeepers operate in each village of the township as well as a handful of stands, stores, or workshops in Tona Village that sell traditional crafts. The Farmer’s Association Hotel in Maolin Village is a fairly large employer. Other major employers are the Maolin Scenic Area Administration, the Tona Hot Springs, the Maolin Village Junior High and Elementary School, and the Tona Village Elementary School. In

addition to the hotel, overnight accommodation is also provided by two hostels in Tona Village and one hostel in Wanshan Village.

In 2001 the decision was made to designate Maolin Township as Taiwan's seventh national park. This decision will undoubtedly result in the construction of additional hostels, hotels, and restaurants within the next few years.

#### **1.7.4 Governmental Facilities in the Area**

The administrative offices for the township and the scenic area are located in Maolin Village. A police station is located in each of the three villages and a fire department in Maolin Village.

### **1.8 Traditional Culture**

#### **1.8.1 History**

According to Zeitoun (2002, personal communication), residents of Tona Village preserve a story of their settlement some three centuries ago in the mountain basin that abuts the present site of the village. Sometime after 1911 the Japanese authorities mandated that the Rukai who resided in the basin relocate to the present site of the village. The stated purpose of the relocation was better administrative oversight. In 1945 the residents of Old Maolin Village were required to move to the present site of Maolin Village, and in 1957 the Kuomintang authorities required residents of Old Wanshan Village to relocate to Wanshan's present site. In the latter instance, village leadership was given a choice of possible sites (Zeitoun 2001, personal communication). These forced removals, like the earlier relocation of the Tona Rukai, were also intended to lessen the burden on government administrators. All three removals appear to have been from areas south of the Chukou River (Li 1973:7 and Shelley 1978:81).

The traditional customs and legends of the Rukai resemble those of the Paiwan, and some older scholarly support is given for a close genetic relationship between the two languages. However, the languages are not mutually intelligible. Among the residents of Maolin Township there are numerous instances of marriages with Paiwan, mostly from Santimen Township. Local Rukai residents who are nearly fluent in Paiwan seemed to have learned the language through exposure within the family.

#### **1.8.2 Contact with Other Cultures**

Most of the Rukai in Maolin Township have frequent, even daily, contact with Han Chinese. Mention was made of contact with the Paiwan of Santimen Township and of the frequency of intermarriage with Paiwan and Bunun. Some intermarriage with Han Chinese also exists. The Rukai primarily communicate with people of other ethnicities in Mandarin although some communication with outsiders occurs in Taiwanese or, on the part of those who are 60 and above, in Japanese.

## 1.9 Linguistic Research in the Language Area

### 1.9.1 Past Research

The documentation and analysis of the Rukai language began with the publication of a collection of annotated texts of Formosan languages in 1935 by Naoyoshi Ogawa and Asai Erin. A partial bibliography of previous research follows:

#### 中文書目 Chinese references

- 何大安· 1983· 〈魯凱語親屬關係〉《中央研究院歷史語言研究所集刊》47:245–274. [Ho, Dah-an. 1983. The position of Rukai in Formosan languages. Bulletin of the Institute of History and Philology 47:245–274.]
- 高業榮· 1991· 《萬山岩雕—台灣首次發現摩崖藝術之研究》。屏東：屏東東益出版社。[Kao, Ye-rong. 1991. Wanshan rock carving—research into Taiwan’s first discovered cliff carvings. Pingtung: Pingtung Tungyi.]
- 賴阿忠· 1995· 〈魯凱語的現況與維護〉在《台灣南島民族母語研究論文集》李壬癸、林英津編。台北：教育部教研會，179–201頁。[Lai, A-zhong. 1995. The present situation of the Rukai language and its maintenance. Collection of research papers on mother tongues of the Taiwan Austronesians, ed. by Paul Jen-kuei Li and Ing-jin Lin, 179–201. Taipei: Ministry of Education Committee of Educational Research.]
- 李壬癸· 1995· 〈台灣南島語分佈及其民族遷移〉在《第一屆台灣語言國際研討會論文選集》曹逢甫、蔡美慧編。台北：文鶴，1–16頁。[Li, Paul Jen-kuei. 1995. Distribution of the Formosan languages and migration of the Aboriginal tribes. Proceedings of the First International Symposium on Languages in Taiwan, ed. by Feng-fu Tsao and Mei-hui Tsai, 1–16. Taipei: Crane.]
- 李壬癸編者· 1997a· 《高雄縣之南島語言》高雄縣文獻叢書系列，7。高雄：高雄縣政府。[Li, Paul Jen-kuei (ed.) 1997a. The Austronesian languages of Kaohsiung County. Series on Kaohsiung County Materials 7. Kaohsiung County: Kaohsiung County Government.]
- 李壬癸· 1997b· 〈多納方言〉在《高雄縣之南島語言》李壬癸編。高雄：高雄縣政府，119–157頁。[Li, Paul Jen-kuei. 1997b. Tona dialect. Austronesian languages of Kaohsiung County, ed. by Paul Jen-kuei Li, 119–157. Kaohsiung: Kaohsiung City Government.]
- 李壬癸· 1997c· 〈字彙表〉在《高雄縣之南島語言》李壬癸編。高雄：高雄縣政府，513–554頁。[Li, Paul Jen-kuei. 1997c. Word list. Austronesian

- languages of Kaohsiung County, ed. by Paul Jen-kuei Li, 513–554. Kaohsiung: Kaohsiung City Government.]
- 李壬癸、林英津編· 1995· 《台灣南島民族母語研究論文集》。台北：教育部教研會。[Li, Paul Jen-kuei, and Ing-jin Lin. 1995. Collection of research papers on mother tongues of the Taiwan Austronesians. Taipei: Ministry of Education Committee of Educational Research.]
- 林惠娟(ləəvə kaʔaaləə)· 1999· 《我們來說萬山話1–6冊》。台北：文鶴。[Lin, Hui-chuan. 1999. Let's talk Mantauran 1–6. Taipei: Crane.]
- 林惠娟· 1999· 〈我們不要忘記我們萬山的故事：魯凱族萬山方言之傳說與生活回憶錄〉發表於原住民人才培育發表會，台北：中央研究院語言學研究所，民國88年6月1日。[Lin, Hui-chuan. 1999. We should not forget the stories of the Mantauran: folk stories and memories of the Mantauran (Rukai). Paper presented at the workshop reporting on the results of the training program for six Aboriginal assistants, Taipei.]
- 林惠娟、齊莉莎· 1997· 〈魯凱語萬山方言主題詞典〉未發表。[Lin, Hui-chuan, and Elizabeth Zeitoun. 1997. A thematic dictionary of Mantauran. Taipei: Academia Sinica, ms.]
- 林惠娟、齊莉莎· 2000· 〈我們不要忘記我們萬山的故事下冊：傳說故事〉未發表。[Lin, Hui-chuan, and Elizabeth Zeitoun. 2000. We should not forget the stories of the Mantauran. vol. 2: Folk stories. Taipei: Academia Sinica, ms.]
- 克萊爾· 1997· 〈茂林方言：詞法與句法〉在《高雄縣之南島語言》李壬癸編。高雄：高雄縣政府，8–118頁。[Saillard, Claire. 1997. Rukai Maga dialect: morphology and syntax. Austronesian languages of Kaohsiung County, ed. by Paul Jen-kuei Li, 8–118. Kaohsiung: Kaohsiung City Government.]
- 伍麗華· 1998· 《說媽媽的故事》。屏東：財團法人國立屏東師範學院教育基金會。[Wu, Li-hua. 1998. Telling mother's stories. Pingtung: Foundation of National Pingtung Normal University.]
- 齊莉莎· 2000a· 《魯凱語參考語法》台灣南島語言，8。台北：遠流。[Zeitoun, Elizabeth. 2000. Rukai reference grammar. Taiwan Austronesian languages 8. Taipei: Yuan Liou.]

齊莉莎· 2001· 〈魯凱語萬山方言：語言地位、特色及我這幾年來在萬山的工作心得〉發表於：高雄縣十居五小族的族語教學與鄉土文化教學 - 茂林，民國90年1月12–13日。[Zeitoun, Elizabeth. 2001. Mantauran Rukai: its linguistic position and characteristics and my fieldwork experience with the Mantauran community. Paper presented at the workshop on cultural and language teaching in Kaohsiung County, Maolin Township.]

### English references

- Chen, Cheng-fu. 1999a. *Wh-words as interrogatives and indefinites in Rukai*. Taipei: NTU thesis.
- Chen, Cheng-fu. 1999b. *Wh-words as polarity items in Rukai*. Paper presented at the Sixth Annual Meeting of the Austronesian Formal Linguistics Association, Toronto.
- Chen, Cheng-fu. 2000. *Nominalization of interrogatives in Rukai (Kucapungan)*. Paper presented at the Workshop on Nominalization in Formosan Languages, Taipei.
- Hsin, Tien-hsin. 2000. *Aspects of Maga Rukai phonology*. Storrs, CT: University of Connecticut dissertation.
- Huang, Lillian M.; Marie M. Yeh; Elizabeth Zeitoun; Anna H. Chang; Joy J. Wu. 1998. A typological overview of nominal case marking systems of some Formosan languages. *Selected papers from the Second International Symposium on Languages in Taiwan*, ed. by Shuanfan Huang, 21–48. Taipei: Crane.
- Kuo, John Ching-hua. 1979. *Budai complementation*. Chungli: Fu Jen Catholic University thesis.
- Lanyon-Orgill, Peter. 1961. Comparative vocabulary of Formosan languages by Naoyoshi and Erin Asai. *Journal of Austronesian Studies* 2:5–32.
- Li, Paul Jen-kuei. 1973a. *Rukai language analysis*. Taipei: Academia Sinica.
- Li, Paul Jen-kuei. 1973b. *Rukai structure*. Institute of History and Philology Special Publication 64. Taipei: Academia Sinica.
- Li, Paul Jen-kuei. 1975a. Maga phonology: a preliminary report. *Bulletin of the Department of Archaeology and Anthropology* 37/38:16–28.

- Li, Paul Jen-kuei. 1975b. *Rukai texts*. Institute of History and Philology Special Publication 64:2. Taipei: Academia Sinica.
- Li, Paul Jen-kuei. 1977. The internal relationships of Rukai. *Bulletin of the Institute of History and Philology* 48:1–42.
- Li, Paul Jen-kuei. 1995. Rukai. *Comparative Austronesian dictionary*, ed. by Darrell T Tryon, 297–305. New York: Mouton de Gruyter.
- Li, Paul Jen-kuei. 1996. The pronominal systems in Rukai. *Reconstruction, classification, description: Festschrift in honour of Professor Isidore Dyen*, ed. by Bernd Nothofer, 209–230. Hamburg: Abera Verlag.
- Li, Paul Jen-kuei. 2001. The dispersal of the Formosan Aborigines in Taiwan. *Language and Linguistics* 2:271–278.
- Nichols, Johanna. 1986. Head-marking and dependent-marking grammar. *Language* 62: 59–119.
- Ogawa, Naoyoshi, and Erin Asai. 1935. *Taiwan takasagozoku densetsu-she* [The myths and traditions of the Formosan native tribes]. Taihoku [Taipei]: Institute of Linguistics, Taihoku Imperial University.
- Saillard, Claire. 1995. *Is Maga accusative or ergative? Evidence from case marking*. Papers from the First International Symposium on Languages in Taiwan, ed. by Feng-fu Tsao and Mei-hui Tsai, 59–72. Taipei: Crane.
- Shelley, George L. 1978. *Vudai Dukai: the language, its contexts and its relationships*. Hartford, CT: Hartford Seminary Foundation dissertation.
- Tsuchida, Shigeru. 1970. Rukai (Maga dialect) word list, ms.
- Tsuchida, Shigeru. 1976. *Reconstruction of Proto-Tsouic phonology*. Study of Languages and Cultures of Asia and Africa Monograph Series 5. Tokyo: Institute of Languages and Cultures of Asia and Africa.
- Tu, Wen-chiu. 1994. *A synchronic classification of Rukai dialects in Taiwan: A quantitative study of mutual intelligibility*. Urbana-Champaign: University of Illinois dissertation.

- Tu, Wen-chiu, and Chin-chuan Cheng. 1991. *A linguistic classification of Rukai Formosan*. Paper presented at the Sixth International Conference on Austronesian Linguistics, Hawaii.
- Yeh, Marie M.; Lillian M. Huang; Elizabeth Zeitoun; Anna H. Chang; Joy J. Wu. 1998. A preliminary study on negative constructions in some Formosan languages. *Selected papers from the Second International Symposium on Languages in Taiwan*, ed. by Shuanfan Huang, 79–110. Taipei: Crane.
- Zeitoun, Elizabeth. 1993. A note on the pronominal system of Mantauran (Rukai). Synchronic and diachronic considerations, ms.
- Zeitoun, Elizabeth. 1995. *Problèmes de linguistique dans les langues aborigènes de Taiwan* [Issues in Formosan linguistics]. Paris: Université René Diderot Paris 7 dissertation.
- Zeitoun, Elizabeth. 1997a. Coding of grammatical relationships in Mantauran (Rukai). *Bulletin of the Institute of History and Philology* 68:249–281.
- Zeitoun, Elizabeth. 1997b. The pronominal system of Mantauran (Rukai). *Oceanic Linguistics* 36:312–346.
- Zeitoun, Elizabeth. 2000a. Dynamic vs. stative verbs in Mantauran (Rukai). *Oceanic Linguistics* 39:415–427.
- Zeitoun, Elizabeth. 2000b. *Nominalization in Mantauran (Rukai)*. Paper presented at the Workshop on Nominalization in Formosan Languages, Taipei.
- Zeitoun, Elizabeth. 2000c. Notes on a possessive construction in the Formosan languages: Grammatical analysis: morphology, syntax and semantics. *Oceanic Linguistics Special Publications*. ed. by Videa De Guzman and Byron Bender, 241–257. Honolulu: University of Hawaii Press.
- Zeitoun, Elizabeth. 2001. *Plurality in Mantauran (Rukai)*. Paper presented at the Tenth International Conference on Chinese Linguistics, Irvine.
- Zeitoun, Elizabeth. Maga word list, ms.

- Zeitoun, Elizabeth. to appear a. Nominalization in Mantauran (Rukai). *Language and Linguistics* 3.
- Zeitoun, Elizabeth. to appear b. A grammar of Mantauran (Rukai).
- Zeitoun, Elizabeth. to appear c. A dictionary of Mantauran (Rukai).
- Zeitoun, Elizabeth, and Lillian M. Huang. 2000. Concerning *ka*, an overlooked marker of verbal derivation in Formosan languages. *Oceanic Linguistics* 39:391–414.
- Zeitoun, Elizabeth; Lillian M. Huang; Marie M. Yeh; Anna H. Chang. 1999. Existential, possessive and locative constructions in the Formosan languages. *Oceanic Linguistics* 38:1–42.

### 1.9.2 Current Research

- Hsin Tien-hsin: research into the morphology of the Maga dialect. Compilation of Maga texts.
- Sung Li-may: comparative analysis of reflexives in Tsou, Seediq and Rukai.
- Elizabeth Zeitoun: dictionary of Mantauran, dictionary of Tona, Mantauran texts, Mantauran folk stories, Tona texts, Mantauran grammar, comparative study of Rukai
- Elizabeth Zeitoun and Hsin Tien-hsin: archiving of annotated texts in the Mantauran, Tona, Maga and Tanan dialects on the Formosan Language Archive. URL: <http://www.ling.sinica.edu.tw/formosan>.

### 1.9.3 Materials Published in the Language

#### 1.9.3.1 Scripture

- 中華民國聖經公 [The Bible Society in the R.O.C.]· 2001· 《Baavan Ka Sakiketeketan Ka Suusiw/魯凱語聖經新約/The Rukai New Testament》。Taipei, Taiwan: 中華民國聖經公。

Hymnbooks have also been published in various Rukai dialects.

#### 1.9.3.2 Primers

- 賴阿忠、鍾思錦· 1993· 《魯凱語初級讀本》。台南：台灣教會公報社。 [Lai, A-zhong and Zhong Si-jin. 1993. Rukai basic primer. Tainan: Taiwan Church Press.]
- 林惠娟(ləəvə kaðaalaə)· 1999· 《我們來說萬山話 1–6冊》。台北：文鶴。 [Lin, Hui-chuan. 1999. Let's talk Mantauran, 1–6. Taipei: Crane.]



茂林基督長老教會編印· 1995· 《魯凱族茂林初級讀本/Sulhate rha telharheka》。  
台南：台灣教會公報社。 [Maolin Presbyterian Church, comp. 1995. Maolin  
Rukai primer. Tainan: Taiwan Church Press.]

1958. Ngurarekayan.

屏東縣政府· 1992· 屏東縣母語教材《魯凱語》。霧台：霧台國民小學。 [Pingtung  
County Government. 1992. The Rukai language. Pingtung County teaching  
materials. Wutai: Wutai Elementary School.]

## 2 Methodology

### 2.1 Subjects

The preliminary form of the Maga dialect imitation test was administered to seven adult residents of Maolin Village who were regarded by the community as fluent speakers of the Maga Rukai dialect. Five of the subjects were female, and two of the subjects were male. The preliminary form of the Tona dialect imitation test was administered to six adult residents in Tona Village. These were also individuals regarded by the community as fluent speakers of the local dialect. Four of the subjects were female, and two of the subjects were male.

In both villages the final form of the imitation tests were administered to a stratified random sample of the general population. It is worth noting that the sample populations may have been skewed toward those who regard themselves or are regarded by others as “better” speakers of the local dialect of Rukai. The sample population in Maolin Village consisted of forty village residents, and the sample population in Tona Village consisted of forty-three village residents. In both cases sample populations were stratified by age and gender. Subjects were categorized by the following age sets: 6–18, 19–35, 35–59, and 60+ years. Male and female representation is roughly equivalent in both samples. The distribution of subjects by age and gender is shown in tables 2.1(a) and 2.1(b).

**Table 2.1(a)**

**Distribution of Subjects in Maolin Village by Age and Gender**

| Gender/Age | 8–18 | 19–35 | 36–59 | 60+ | Total |
|------------|------|-------|-------|-----|-------|
| Male       | 5    | 1     | 11    | 2   | 19    |
| Female     | 5    | 4     | 6     | 6   | 21    |
| Total      | 10   | 5     | 17    | 8   | 40    |

**Table 2.1(b)**  
**Distribution of Subjects in Tona Village by Age and Gender**

| Gender/Age | 6–18 | 19–35 | 36–59 | 60+ | Total |
|------------|------|-------|-------|-----|-------|
| Male       | 4    | 4     | 6     | 4   | 18    |
| Female     | 8    | 4     | 8     | 5   | 25    |
| Total      | 12   | 8     | 14    | 9   | 43    |

## 2.2 Questionnaires

A brief individual questionnaire was administered to each subject. The content of the questionnaire was both demographic and sociolinguistic in nature. Sociolinguistic questions mostly pertained to language use in the home. With the exception of interviews with a few elderly individuals, the questionnaires were administered in Chinese.

A summary of the responses to the sociolinguistic portion of the questionnaires is provided in the discussion on language use in section 4. Section A in the appendix contains data from the individual questionnaires translated into English.

## 2.3 Dialect Testing

Imitation tests for the Maga, Tona, and Mantauran Rukai dialects were developed in line with the procedures described by Radloff (1991) for the sentence repetition test (SRT). The SRT is designed to assess reports of widespread bilingualism in a speech community. It consists of a set of unrelated sentences in the language reported to be the second language of the speech community. The sentences are generally arranged in order of increasing length and/or syntactic complexity. The survey subject repeats each sentence immediately after hearing it. In scoring this instrument, points are marked off for lexical or syntactic mistakes.

The SRT is premised on the work of psychologists such as Stevick (1976) and Norman (1976). In his research into human memory, Stevick posited that the adult memory can retain up to seven chunks of unrelated information. In linguistic terms the chunks can be thought of as equivalent to syntactic components. Radloff and her colleagues felt that requesting members of a speech community to repeat sentences of sufficient complexity in a second language would indicate the subjects' competence in the second language. In her words,

As people become more familiar with a second language and more confident in manipulating its syntax, they are more and more able to pack the chunks full of information; and the more they control the morphology the better able they are to organize within the chunks of syntax; and the more vocabulary they know the better able they are to hold on to the meaning until they can repeat the sentence. (Radloff 1991:9)

To get a handle on competence rather than simply mnemonic ability, Radloff feels that it is critical to use sentences that are long enough that memory alone cannot account for

verbatim repetition. Ideally these sentences should consist of seven or more syntactic components.

The source of the candidate sentences for the SRT sentence set is a relatively minor consideration. Conversation, oral narratives, and texts are possible sources. More critical concerns in selecting the initial sentences are that the sentences not represent low class or stigmatized speech and that each sentence makes sense when uttered in isolation. The candidate sentence set consists of approximately fifty transcribed and translated sentences arranged according to relative length.

Several fluent speakers of the language record the candidate sentence set. The best recording is selected as the calibration cassette tape or digital recording. Six or more fluent speakers are then asked to listen to the sentence set. If the individuals who did the recording or the individuals who listen to the recording are not able to repeat any of the sentences without making mistakes, then those sentences are deleted.

The SRT is commonly cross-calibrated with an external survey instrument. Radloff (1991) suggests the Reported Proficiency Evaluation (RPE) or the Second Language Oral Proficiency Evaluation (SLOPE) as potential candidates for the external survey instrument. The RPE or SLOPE is administered to individuals who possess varying degrees of fluency in the language of the SRT. From these subjects a pool of fifty or more speakers is selected. The speakers are stratified by proficiency level and gender. The candidate sentence set is administered to these individuals. The repetitions are then scored. For each sentence answered correctly, 3 points are earned. For each error, a point is subtracted from the 3-point maximum. The following are counted as errors: omitted words, added words, substitution, repetition, alteration in word order, garbled words, and incorrect morphemes (Radloff 1991:27).

Once the preliminary administration of the SRT is scored, candidate sentences are evaluated for use in the sentence repetition test. Sentences are ranked by their difficulty and by their effectiveness in differentiating between subjects at different proficiency levels as measured by RPE or SLOPE. Fifteen sentences that represent the range of difficulty and that differentiate effectively between subjects are selected. The sentences are then recorded on the master test tape, preferably by the same fluent speaker who recorded the candidate sentence tape. On the master tape the sentences are preceded by an explanation of the survey methodology in the first language of the surveyed population and by three of the easiest candidate sentences as sample sentences. The SRT is administered to a stratified random sample of the population of the speech community.

In designing the imitation tests, the SRT procedures were altered at Radloff's suggestion (2001, personal communication) in the following ways. The preliminary form of each test was administered to just six individuals rather than fifty. These were individuals regarded by the community as fluent speakers of the local dialect. All sentences that all fluent speakers repeated without errors were retained for the final form of each test. Two sentences in the Maga dialect that five of six subjects repeated without

error were also retained. A third major change in the survey design was that the imitation tests were not calibrated with any external proficiency standard.

Sociolinguistic and demographic rationales for these changes are discussed below. The combined effect of these changes is that the imitation test (more precisely, the scores of fluent speakers on a particular imitation test) provides a community norm of proficiency in second language production instead of the more objective standard provided by the SRT and its external correlates. In other words, in imitation test surveys, the comparison of sample scores is to community-internal proficiency norms rather than to the first language proficiency standards of outsiders.

The SRT was designed to test a speech community's level of bilingualism in a language of wider communication (LWC). It assumes there is a large body of L1 speakers of the language being tested. For this survey we adapted and applied this method to communities (Maolin Village, Tona Village, and Wanshan Village) in which there is ongoing language shift. Each of these communities is marked by varying levels of proficiency in a local dialect of Rukai. In a situation of language shift such as is occurring in Maolin Township, even the most proficient speakers of the language being abandoned may not be at what is normally considered a "mother-tongue" level of proficiency. Thus the imitation test tests the level of proficiency of members of a community relative to the most fluent speakers of that community.

The Tona and Mantauran imitation tests were comprised of fifteen unrelated sentences and the Maga imitation test was comprised of fourteen unrelated sentences, each arranged according to increasing length. As with the SRT, 3 points were earned for each sentence answered correctly, with 45 the maximum score for the Tona and Mantauran tests and 42 the maximum score for the Maga test. For each error, a point was subtracted. The same mistakes that counted as errors on the SRT were counted as errors on the imitation tests (omitted words, added words, substitution, repetition, alteration in word order, garbled words, and incorrect morphemes). Due to the present demographics of Wanshan Village as described below, the Mantauran dialect imitation test was not administered. Copies of the Maga and Tona dialects imitation tests are provided in section B of the appendix.

In analyzing the imitation test results, it was a matter of interest if scores on the test in each village differed according to age and gender. The null hypothesis was that there would be no statistically significant difference between the mean scores of age- and gender-defined subpopulations on each test. Another way of stating this is that the mean score of each subpopulation in the sample is equivalent to the mean score of known fluent speakers. This would suggest that the majority of residents in each village exhibit native-like fluency in the local Rukai dialect.

A factorial analysis of variance (ANOVA) statistical design was applied to the scores recorded for each imitation test. The factorial ANOVA was chosen for the analysis so that the influence of the interaction of the variables of gender and age on proficiency

in each Rukai dialect could be examined along with the influence of the variables individually. The General Linear Model (GLM) ANOVA was the particular model of factorial ANOVA selected for the analysis. Equal numbers of tokens (scores) at all factor levels is not a prerequisite for this model. The number of tokens per factor level varies in both the Maolin Village and the Tona Village data. F-ratios at the 5% level were considered to be statistically significant. Fisher's least significant difference (LSD) procedure was applied to determine which pairs of means were significantly different. Fisher's LSD is a statistical procedure for comparing multiple pairs of means while minimizing the likelihood of introducing Type 1 errors. A Type 1 error occurs when a difference in means is wrongly considered to be statistically significant. Using Fisher's LSD at a 5% level of significance means that no conclusions are drawn unless one is at least 95% confident that they are correct.

### **2.3.1 Rationale for Imitation Tests**

#### **2.3.1.1 Sociolinguistic Background and Rationale**

The interpretation of questionnaire data in previous surveys of Formosan languages has been marred by faulty assumptions. Among the more common of these is the assumption that naive responses accurately reflect actual language use (cf. Wang and Pu 1995; Han 1996; Lu 1998). The questionable legitimacy of the resulting interpretations is compounded by the fact that many Taiwan Aborigines are apparently abandoning their traditional languages, at the same time expressing positive attitudes toward the use of these languages. This double standard would seem to scuttle the potential usefulness of sociolinguistic surveys of Taiwan Aborigines that rely solely on questionnaires. Additional concerns were that respondents would alter their responses to conform to their perceptions of the surveyors' expectations and that Aborigine subjects, particularly the middle-aged and elderly, would be unfamiliar with questionnaire response strategies. It was felt that an imitation test coupled with a brief questionnaire would provide a more objective measure of language ability than would the exclusive use of a more extensive questionnaire.

#### **2.3.1.2 Demographic rationale**

One of our assumptions prior to the development of the survey instrument was that Rukai is a second language (at best) for most Maolin Township residents other than the elderly. In light of this, we considered administering an SRT to confirm reports of widespread proficiency in Rukai as an L2. However, the number of subjects required for the development of an SRT is substantial. There is a need for several L1 speakers of the language to be tested. Additional subjects are required for the correlation of the SRT with an external survey instrument such as SLOPE or RPE. An SRT survey in the villages of Maolin Township was rendered untenable by demographic constraints. The limited subject pool was the major factor. The 60 and above "mountain aborigine" population in

Maolin Township is approximately 180. (This figure is 90.6% of the total 60 and above population of the township, which was 201 as of March 2001.) The actual number of local Rukai age 60 and above is almost certainly less due to intermarriage with non-Rukai Aborigines and the in-migration of other Aborigines. A second factor was the lack of mutual intelligibility between the three Rukai dialects of Maolin Township. Since none of the dialects is entirely intelligible to speakers of the other dialects, a separate survey instrument was called for in each dialect area. The need for three separate survey instruments reduced the potential pool of fluent speakers for the development of each instrument by roughly two-thirds, to approximately sixty individuals per dialect area. Although the SRT as a rough measure of bilingualism suited the purpose of the survey, it was impractical to develop a separate SRT for each village.

### **3 Sociolinguistic Issues**

#### **3.1 Ethnolinguistic Identity**

Rukai in the Lower Three Villages strongly identify with their home village rather than with a broader “Rukai” ethnicity. For corroboration in the literature of this strong local identification see Hsin 2001:8. *Lukai* (the Chinese transliteration of the exonymous Japanese term ‘Rukai’) is regarded by Lower Three Village residents as referring to the people of Wutai Township, Pingtung County. *tulðika* is the eponym of residents of Maolin Village, *koyadavanə* the eponym for residents of Tona Village, and *ʔoponoho* the eponym for residents of Wanshan Village.

#### **3.2 Perceived Ability**

In Tona Village and Maolin Village adult residents queried about the Rukai language ability of other residents consistently responded that the individual in question could certainly speak Rukai since “Rukai is our mother tongue.” While the response reflects the near synonymy of the term “mother tongue” among Taiwan’s Aboriginal peoples with the traditional language, it also reflects a belief prevalent in the township that individuals are able to speak Rukai by virtue of local ancestry and/or local residence.

Similarly, survey subjects commonly stated that the local dialect of Rukai was the language variety they speak best regardless of their performance on the imitation test. In general, other responses were forthcoming only when the subject, usually a child, performed so poorly on the imitation test that he or she could not convincingly refer to the local dialect as the language he or she speaks best.

### **4 Ethnicity and Language Use Issues**

#### **4.1 Testing Production in the Local Dialects**

##### **4.1.1 Maga Dialect**

The results of the Maga imitation test are presented in tables 4.1.1(a) and 4.1.1(b). As mentioned above, the imitation test survey is a means of comparing the proficiency of

the general population of an ethnolinguistic group in a given language variety with the proficiency of the subgroup in the population for whom the language variety is a first language. The imitation test measures comparative fluency.

**Table 4.1.1(a)**  
**Means and Standard Deviations of Imitation Test Scores**  
**for Maolin Village According to Gender and Age**

| Factor       | Level               | Mean            | Standard Deviation | Number of Test Takers | P        |
|--------------|---------------------|-----------------|--------------------|-----------------------|----------|
| Gender       | Male                | 35.16           | 9.46               | 19 <sup>1</sup>       | NS       |
|              | Female              | 34.95           | 8.46               | 21 <sup>1</sup>       |          |
| Age          | 8–18                | 24.1            | 10.32              | 10                    | p<0.0000 |
|              | 19–35               | 36              | 3.94               | 5                     |          |
|              | 36–59               | 39.47           | 4.12               | 17                    |          |
|              | 60 and above        | 38.75           | 3.85               | 8                     |          |
|              | fluent speakers     | 41.67           | 0.51               | 6                     |          |
| Gender x Age | M x 8–18            | 24              | 11.14              | 5                     | p<0.0000 |
|              | F x 8–18            | 24.2            | 10.76              | 5                     |          |
|              | M x 19–35           | 37 <sup>2</sup> | NA                 | 1                     |          |
|              | F x 19–35           | 35.75           | 4.5                | 4                     |          |
|              | M x 36–59           | 38.91           | 5.03               | 11                    |          |
|              | F x 36–59           | 40.5            | 1.38               | 6                     |          |
|              | M x 60 and above    | 41.5            | 0.71               | 2                     |          |
|              | F x 60 and above    | 37.83           | 4.07               | 6                     |          |
|              | M x fluent speakers | 42              | NA                 | 1                     |          |
|              | F x fluent speakers | 41.6            | 0.55               | 5                     |          |

<sup>1</sup>Figure excludes fluent speakers.

<sup>2</sup>There was only one token at this factor level.

The mean scores for most of the subgroups in Maolin Village cluster with the fluent speakers' mean score(s). However, p-values indicate a statistically significant

relationship at the 99% confidence level between mean scores and the independent variables (age group in the middle of the chart; the interaction between age group and gender in the bottom third of the chart). A comparison of pairs of age group means (table 4.1.1(b)) reveals that the mean score of child subjects (8–18) differs significantly from the other mean scores. There are no other statistically significant differences.

**Table 4.1.1(b)**  
**Comparison of Imitation Test Scores**  
**for Maolin Village by Age**

| Contrast                         | Difference | +/- Limits |
|----------------------------------|------------|------------|
| 8–18 & 19–35                     | *-11.9     | 6.46       |
| 8–18 & 36–59                     | *-15.37    | 4.7        |
| 8–18 & 60 and above              | *-14.65    | 5.59       |
| 8–18 & fluent speakers           | *17.57     | 6.09       |
| 19–35 & 36–59                    | -3.47      | 6          |
| 19–35 & 60 and above             | -2.75      | 6.72       |
| 19–35 & fluent speakers          | 5.67       | 7.14       |
| 36–59 & 60 and above             | 0.72       | 5.06       |
| 36–59 & fluent speakers          | 2.2        | 5.6        |
| 60 and above and fluent speakers | 2.92       | 6.37       |

\* denotes a statistically significant difference.

Table 4.1.1(b) provides an estimation of difference between each pair of means. Four pairs (all of which include the children's mean) show statistically significant differences at the 95.0% confidence level. Fisher's least significant difference (LSD) procedure was used to discriminate among means.

#### 4.1.2 Tona Dialect

The results of the Tona imitation test are presented in tables 4.1.2(a) and 4.1.2(b).



**Table 4.1.2(a)**  
**Means and Standard Deviations of Imitation Test Scores**  
**for Tona Village According to Gender and Age**

| Factor       | Level               | Mean  | Standard Deviation | Number of Test takers | p        |
|--------------|---------------------|-------|--------------------|-----------------------|----------|
| Gender       | Male                | 36    | 11.33              | 18 <sup>1</sup>       | ns       |
|              | Female              | 35.08 | 12.97              | 25 <sup>1</sup>       |          |
| Age          | 6–18                | 19.42 | 10.16              | 12                    | p<0.0000 |
|              | 19–35               | 38    | 8.35               | 8                     |          |
|              | 36–59               | 42.29 | 3.17               | 14                    |          |
|              | 60 and above        | 44    | 1.94               | 9                     |          |
|              | fluent speakers     | 45    | 0                  | 6                     |          |
| Gender x Age | M x 6–18            | 20.5  | 11.12              | 4                     | p<0.0000 |
|              | F x 6–18            | 18.88 | 10.4               | 8                     |          |
|              | M x 19–35           | 36.75 | 11.3               | 4                     |          |
|              | F x 19–35           | 39.25 | 5.56               | 4                     |          |
|              | M x 36–59           | 41    | 4.05               | 6                     |          |
|              | F x 36–59           | 43.25 | 2.2                | 8                     |          |
|              | M x 60 and above    | 43.25 | 2.87               | 4                     |          |
|              | F x 60 and above    | 44.6  | 0.55               | 5                     |          |
|              | M x fluent speakers | 45    | 0                  | 2                     |          |
|              | F x fluent speakers | 45    | 0                  | 4                     |          |

<sup>1</sup>Figure excludes fluent speakers.

As with the Maga dialect test, the mean scores of most subgroups in Tona Village cluster with the fluent speakers' mean score(s). The p-values indicate a strongly significant relationship between mean scores and the independent variables (age group in the middle of the chart; the interaction between age group and gender in the bottom third of the chart). The comparison of pairs of age group means (table 4.1.2(b)) reveals that the mean score for child subjects (6–18) differs significantly from each of the other mean scores and that the young adults' (19–35) mean score differs significantly from the fluent speakers' mean score.

**Table 4.1.2(b)**  
**Comparison of Imitation Test Scores**  
**for Tona Village by Age**

| Contrast                         | Difference | +/- Limits |
|----------------------------------|------------|------------|
| 6-18 & 19-35                     | *-18.58    | 5.86       |
| 6-18 & 36-59                     | *-22.87    | 5.05       |
| 6-18 & 60 and above              | *-24.588   | 5.66       |
| 6-18 & fluent speakers           | *-25.58    | 6.42       |
| 19-35 & 36-59                    | -4.29      | 5.69       |
| 19-35 & 60 and above             | -6.0       | 6.24       |
| 19-35 & fluent speakers          | *-7.0      | 6.93       |
| 36-59 & 60 and above             | -1.71      | 5.48       |
| 36-59 & fluent speakers          | -2.71      | 6.26       |
| 60 and above and fluent speakers | -1.0       | 6.76       |

\* denotes a statistically significant difference.

Table 4.1.2(b) provides an estimation of difference between each pair of means. Five pairs of means show statistically significant differences at the 95.0% confidence level. Fisher's least significant difference (LSD) procedure was used to discriminate among means.

## 4.2 Ethnic Composition of Villages

The population of Tona Village is more homogeneous than that of Maolin Village. This reflects Tona's geographic isolation and this isolation continues to affect its demographics despite the opening of the nearby hot springs and the improvement of the township road system within the past decade. Only 1 of 43 Tona Village respondents listed a hometown other than Tona Village while 4 of 36 Maolin Village respondents listed a hometown other than Maolin Village.<sup>4</sup> A comparison of the hometowns of the immediately preceding generation provides an even sharper contrast. Among adult

<sup>4</sup>There were two reasons for including nonnative village residents in the survey. The first of these is that those surveyed in each village reflected the local ethnic mix. Exogamous marriage is commonplace among the Rukai. And second, the scores of nonnative residents in the sample population did not substantially differ from the scores of indigenous residents.

subjects 29 of 31 Tona residents reported father's hometown as Tona Village, and 26 of the 31 residents reported mother's hometown as Tona Village. Only 17 of 26 adult Maolin Village residents reported father's hometown as Maolin Village, and 17 of 27 reported mother's hometown as Maolin Village.

Exogamous marriage, that is, marrying individuals who are not fellow village residents, is occurring with more frequency in both villages. Few child subjects reported parents with nonlocal origins (2 of 10 mothers and 2 of 10 fathers in Maolin Village; 2 of 12 fathers and 3 of 12 mothers in Tona). However, these responses are belied by the responses of adult subjects to the question of spouse's ethnicity: 10 of 22 (almost half) of married Maolin Village subjects indicated that their spouses are not natives of Maolin Village. Similarly, 5 of 24 (approximately one-fifth) of married Tona subjects indicated that their spouses are not natives of Tona Village.

### **4.3 Education of Local Residents**

Maolin Township's only junior high school is located in Maolin Village. The junior high school was established in the late 1990s. The presence of this relatively new institution may eventually result in greater numbers of Maolin Village residents continuing their education past elementary school. However, to date there is a negligible difference between the post-primary education levels of residents of Maolin and Tona Villages. Comparable numbers of adult respondents in the two villages reported some post-elementary education: 14 of 25 adult Maolin Village respondents (56% of the sample) and 18 of 31 adult Tona Village respondents (58% of the sample). A difference in educational background only becomes apparent when post-secondary education levels are considered. Just one adult Tona resident reported having continued her education past senior high school or the equivalent,<sup>5</sup> compared to 4 of 30 adult Maolin Village residents.

Educational background impinges on the matter of language use. With the exception of Presbyterian seminaries and Bible colleges, Mandarin Chinese is the language of instruction at all other local educational institutions in Taiwan. While Taiwanese has gained informal acceptance in the classroom in the last decade, its use is likely negligible in most Aboriginal schools. Education for Aboriginal children and young adults means exposure to and the use of Mandarin.

## **4.4 Perceptions of Language Use**

### **4.4.1 In Maolin Village**

In Maolin Village 20 of 26 of adult respondents (77% of the sample) claimed Maga as a language variety they speak best. Those who claimed to communicate with their parents in Maga and those who claimed to communicate with their spouses in Maga

---

<sup>5</sup>A 67-year-old male had also continued his education past senior high school. His interview responses were not tallied with the responses of other interviewees since his imitation test results were rendered invalid by his poor hearing.

roughly correspond to this percentage. The number of child respondents who mentioned that their parents speak to each other in Maga (solely or in addition to other language varieties) also correlates well with this percentage. However, there is a discrepancy between the ratio of children who mentioned their parents speak Mandarin with each other and the ratio of adults who claimed to speak Mandarin with their spouses. Most children (7 of 10 subjects) said their parents communicate in Mandarin compared to less than a third of adults (5 of 19 subjects) who claimed to speak Mandarin with their spouses.

There are various possible explanations for this discrepancy. One possible explanation is that parents of the current generation of children speak Mandarin more often than the parents of adult children. Parents of the child respondents are young or younger middle-aged adults, and Mandarin is the default language variety for individuals in both villages who are not fluent in the local variety of Rukai, such as younger adults. Another possibility is that adult respondents may have exaggerated their use of Maga because of the dialect's local prestige. Either or both factors may have played a part in the discrepancy.

Similar numbers of respondents claimed to speak Maga and Mandarin with their children. Again there is the possibility that parents exaggerated their use of Maga. Other factors being equal, it is likely that children who receive equivalent input in two language varieties in the home will attain a degree of fluency in both. However, all child respondents in Maolin Village stated that Mandarin is the language variety they speak best. Since respondents could choose more than one language variety as their "best" variety, this pattern of responses on the part of the children suggests that their ability in Maga is low or nominal. Among Maolin Village subjects it is pertinent that only the children's (6–18) mean score on the imitation test was significantly lower than the fluent speakers' mean score.

There is a second discrepancy in the data, this one between parents' perceptions of the language varieties their children use among themselves and the children's own statements about language use with siblings. One-third of Maolin Village parents (7 of 21) stated that their children use Maga along with other language varieties to communicate with each other. In contrast, just one child reported using Maga with his siblings.

#### **4.4.2 In Tona Village**

Eighty-four percent of adult respondents in Tona (26 of 31 respondents) claimed Tona as a language variety they speak best. This roughly corresponds to the number who stated that they speak Tona with their spouses (19 of 24 married respondents or 79% of the sample). The ratio of child respondents who mentioned that their parents speak to each other in Tona is similar (7 of 11 respondents or 64%).

The number of Tona adults who claimed their parents communicated in Tona (30 of 31) exceeds the number who themselves claimed Tona as a “best” language variety. The large number of elderly residents who communicate in the Tona dialect reflects the historic homogeneity of the population. Tona is the favored language variety among the elderly since the older population is almost entirely ethnic *koḡadavanə*. However, the fact that fewer nonelderly adults than elderly adults claim Tona is their “best” language variety suggests that there has been language loss among this section of the population. It is likely that young and middle-aged adults are not as fluent as their parents in the traditional language variety.

A comparison of respondents who claim to speak Mandarin with their spouses with those who claim Mandarin as a “best” language variety provides additional support for a situation of ongoing language loss. A third of adult respondents (11 of 31 or 35% of the sample) claimed Mandarin as a language variety they speak best while almost half of married respondents (11 of 24) stated that they speak to their spouses in Mandarin. In other words, more adults report that they speak Mandarin with their spouses than report that Mandarin is the language variety they speak well. One possible interpretation is that some adults who are more fluent in Mandarin than in Tona may not have been forthcoming about that fact on the questionnaire. An alternative interpretation is that the divergence between these figures provides evidence of the encroaching use of Mandarin in the home domain.

As with the Maolin Village data, there is a discrepancy between the percentage of children who reported that their parents speak to each other in Mandarin and the percentage of adults who reported that they speak Mandarin with their spouses. Most children (7 of 11) stated that their parents communicate in Mandarin while less than half of married adults (11 of 24) claimed to speak Mandarin with their spouses. Plausible explanations for this discrepancy are (1) that some adults exaggerated their Tona use for sociolinguistic reasons or (2) that younger parents speak Mandarin more frequently than other adults. In this regard, it should be noted that the imitation test results call into question the fluency of young Tona adults in Tona Rukai. The mean score of young adult subjects (19 to 35) differed significantly from the fluent speakers’ mean score, which suggests that young adults are less fluent in Tona than other adults and therefore speak it less.

Similar numbers of respondents claimed to speak Tona and Mandarin with their children. However, like Maolin Village parents, Tona parents may have exaggerated their use of the local language variety. One possible indication of this: Tona child subjects did not feel that they had attained equivalent fluency in Mandarin and Tona. Eleven of 12 stated that Mandarin is the language variety they speak best. Again the imitation test results indicate that there is a factual basis for this perception. A significant difference was found between the mean score of child subjects and the mean score of fluent speakers on the Tona dialect imitation test.

There is a discrepancy between parents' perceptions of the language varieties their children use among themselves and children's statements about language use with their siblings. Twelve of 21 parents claimed their children use Tona to communicate with each other. In contrast, only 2 of 11 children mentioned using Tona with their siblings.

#### **4.5 Discussion**

In both Maolin Village and Tona Village imitation test results confirm that younger Rukai are not fluent in the local dialects. Minimally, it can be concluded that children in both villages as well as young adults (19 to 35) in Tona Village do not possess a mother-tongue level of proficiency. This conclusion is corroborated by the questionnaire results. With a single exception, child subjects in both villages claimed they speak Mandarin best. The majority of child subjects indicated that their parents (who largely fall in the 19 to 35 age group) communicate with each other in Mandarin. In addition, it seems that in both villages parents of nonadult children do not often use the local dialect in speaking to their children.

The questionnaire responses seem to conflict with the results obtained for young adults in Maolin Village. The mean score for young adult subjects in Maolin Village does not differ significantly from the fluent speaker mean score. Of the three villages in Maolin Township, one would expect Rukai language loss to be most advanced in Maolin Village in light of that village's closer proximity to Han Chinese and other non-Rukai populations. Given the comparatively low proficiency level of young adults in Tona Village, it is reasonable to assume that the proficiency level of young adults in Maolin Village (and perhaps that of older age sets as well) is lower than the proficiency level of fluent Maga dialect speakers. However, this assumption is not corroborated by the results of the imitation test.

Various possible explanations exist for why the test results do not indicate a low proficiency level for Maolin Village young adults. It may be that adult residents of Maolin Village are retaining their proficiency in the Maga dialect contrary to expectations. Our observations, as well as the observations of other linguists with fieldwork experience in the village, make this possibility unlikely. Young adult residents are not observed speaking Maga Rukai fluently or with any degree of regularity. A second possibility is that the level of proficiency of adult Maolin Village residents is similar enough not to differ statistically by age. If this is the case, then it is probable that even village residents who are regarded by others as proficient speakers do not possess what is normally considered a mother-tongue level of proficiency as suggested in 2.2. Possible support for this explanation is found in the less than perfect mean score of the village's fluent speaker subjects. If these subjects are representative of others who are regarded by the community as proficient speakers of Maga Rukai, then the number of truly fluent individuals is quite small. Mitigating against this explanation is the fact that age-based distinctions in language use do appear to exist. Elderly adults speak Maga with

their age peers as well as with younger individuals. Young adults routinely speak Mandarin.

A third possible explanation is that the sentences in the Maga dialect imitation test do not represent a range of difficulty adequate to distinguish between the proficiency levels of those who are regarded as proficient speakers and young adults. The sentences may be simple enough that individuals with a minimal grasp of Maga syntax were able to repeat them with few errors. If so, then no conclusions can be drawn from the test results about distinctions between the proficiency levels of adult age sets. It should be noted that this does not reflect on the validity of this imitation test. The test clearly indicates a significant distinction between the proficiency level of proficient speakers and the proficiency level of children. However, the test may not be as productive as the Tona dialect imitation test at distinguishing finer degrees of difference in proficiency. We are inclined toward this third explanation if only because questionnaire responses and demographic facts, as well as the comparison with the Tona Village situation, point toward a difference in proficiency levels between proficient speakers and young adult speakers in Maolin Village.

It is common practice in SRT surveys to correlate test scores with scores on an external proficiency standard. The intention is to establish a scalar relationship between SRT scores on a given SRT testing instrument and FSI levels. However, it is not possible to establish correlations between scores on these imitation tests and FSI levels since imitation tests are not calibrated with an external proficiency standard.

#### **4.6 Observations Concerning Wanshan Village**

As noted in 1.3.2, Zeitoun (2001, personal communication) suggests that the current year-round population of Wanshan Village is approximately 50 to 60. On each visit to the village, we found the majority of houses unoccupied. A substantial majority of residents appeared to be in their 50s or older. Young adults and children were little in evidence. These perceptions were substantiated by Zeitoun, who noted that although the Wanshan population has declined over the past decade there seems to have been a particularly marked reduction in the population in 2001 and 2002. She advised us that the population is so diminished it would not be feasible to survey a stratified sample of village residents. In addition, in the course of her own fieldwork she has found that most middle-aged and elderly Wanshan residents are not able to tell a coherent story in the local variety of Rukai. In light of these facts, the Mantaoran dialect imitation test survey was not administered. Very likely this variety of Rukai is moribund.

#### **4.7 Summary**

The following factors mitigate the likelihood of establishing a sustainable language development program in Maolin Township: the rise in the non-Rukai

population, the apparent increase in the use of Mandarin, and the apparent lack of fluency in Rukai among children and young adults.

#### **4.8 Areas for Further Study**

There is a growing corpus of published research on Rukai linguistics, particularly in the areas of syntax, phonology, and historical reconstruction. However, there is an almost complete absence of material on sociolinguistic issues pertaining to the Rukai people. The present study sheds some light on matters of language attitude and use and language ability among two subpopulations of the Rukai. A consideration of these issues among the broader Rukai population is beyond the scope of the present study. A commonplace of linguistics is that comprehension of a language variety outpaces the ability to produce the language variety. This study has only briefly touched on the comprehension of Rukai dialects by present-day Rukai. A welcome contribution would be any studies that could shed more light on the sociolinguistic situation of the Rukai, particularly matters of language vitality and the comprehension of local dialects.

### **5 Recommendations**

Linguistic and sociolinguistic data from the Lower Three Villages suggest that local residents would not profit from written material in other Rukai dialects such as the Rukai New Testament (the Budai dialect material mentioned above), but they may be able to profit from material (particularly nonprint media) in the local dialects. However, given the widespread fluency in Mandarin and the limited numbers of those who would benefit from local dialect material (mainly those 36 and above), we do not recommend the Maolin Township Rukai as a language development candidate.



## Appendices

### Appendix A: Summary of Answers to the Questionnaires

#### 1 Maolin Village Questionnaire

|   |                                  |                                  |  |  |
|---|----------------------------------|----------------------------------|--|--|
| Gender  | 19 male                          |                                  | 21 female  |  |
| Age   |                                  |                                  |  |  |
| Marital status<br>(age 19 and above)                                  | 22 married                       | 3 single                         | 5 no answer  |  |
| Language variety or<br>varieties you speak<br>best:<br>(19 and above) | 14 Maga                          | 5 Mandarin                       | 3 Maga and<br>Mandarin   | 1 Maga and<br>Mantauran                      |
| (8–18)  | 1 Maga and<br>Bunun              | 1 Maga and<br>Paiwan             | 5 no answer  |  |
|   | 10 Mandarin                      |                                  |  |  |
| Occupation  |                                  |                                  |  |  |
| Education<br>(19 and above)   | 2 none                           | 9 elem<br>school                 | 4 jr high  | 4 sr high                                    |
|   | 1 jr college                     | 1 nursing<br>school              | 3 university   | 1 seminary                                   |
| (13–18)   | 5 no answer <sup>1</sup>         |                                  |  |  |
| (8–12)  | 4 sr high                        | 1 jr college                     |  |  |
|   | 5 elem<br>school                 |                                  |  |  |
| Language of education   | 27 Mandarin                      | 3 Japanese                       | 1 Mandarin<br>and<br>Japanese                                      | 2 Mandarin<br>and<br>Taiwanese               |
|   | 2 not<br>applicable              | 5 no answer                      |  |  |
| Hometown  | 32 Maolin<br>Village             | 2 Wanshan<br>Village             | 1 Dashe<br>Village,<br>Santimen<br>Township,<br>Pingtung<br>County | 1 Luogui<br>(Village?),<br>Taoyuan<br>County |
|   | 4 no answer                      |                                  |  |  |
| Ethnicity   | 32 Maolin<br>( <i>tul̄dika</i> ) | 2 Wanshan<br>( <i>?oponoho</i> ) | 1 Bunun  | 1 Paiwan                                     |
|   | 4 no answer                      |                                  |  |  |

|  |  |                            |   |                                       |
|--|--|----------------------------|---|---------------------------------------|
| Father's hometown<br>(19 and above)  | 17 Maolin Village                                  | 2 Wanshan Village          | 1 Chingye Village,<br>Gaoshu Township,<br>Pingtung County | 1 Dashe Village,<br>Santimen Township |
|  | 1 Paoshan Township,<br>Hualien County <sup>2</sup> | 1 Santimen Township        | 2 Bunun <sup>4</sup>                                      | 1 Paiwan <sup>4</sup>                 |
|  | 4 no answer  |                            |   |                                       |
| (8-18)   | 7 Maolin Village                                   | 1 Taiwanese <sup>3,5</sup> | 1 Fengshan Township,<br>Kaohsiung County <sup>4</sup>     | 1 Paiwan <sup>3</sup>                 |
| Mother's hometown<br>(19 and above)  | 17 Maolin Village <sup>6</sup>                     | 3 Wanshan Village          | 2 Dashe Village,<br>Santimen Township                     | 3 Taoyuan County <sup>7</sup>         |
|  | 2 Bunun <sup>3</sup>                               | 4 no answer                |   |                                       |
|  | 8 Maolin Village                                   | 1 Paiwan <sup>3</sup>      | 1 Taoyuan <sup>8</sup>                                    |                                       |
| Have you lived outside of<br>Maolin Village?   |  |                            |   |                                       |
| How long did you live<br>there?  |  |                            |   |                                       |
| Language variety or<br>varieties your parents<br>speak/spoke to each<br>other:<br>(19 and above) | 15 Maga  | 1 Mandarin                 | 2 Mantaoran   | 1 Bunun                               |
|  | 1 Paiwan   | 1 Paiwan and<br>Japanese   | 2 Maga,<br>Mandarin,<br>and Bunun                         | 1 Maga,<br>Bunun, and<br>Japanese     |
|  | 6 no answer  |                            |   |                                       |
| (8-18))  | 3 Maga   | 4 Mandarin                 | 3 Maga and<br>Mandarin                                    |                                       |
| Ethnicity of your spouse:  | 12 Maolin<br>( <i>tulðika</i> )                    | 1 Taiwanese                | 2 Tona<br>( <i>koŋadavanə</i> )                           | 1 Bunun                               |
|  | 3 Paiwan   | 1 Tayal                    | 1 Santimen<br>Township <sup>9</sup>                       | 1 Taoyuan<br>County <sup>9</sup>      |
|  | 5 no answer  |                            |   |                                       |

|  |                                 |                     |                               |                      |
|--|---------------------------------|---------------------|-------------------------------|----------------------|
| Language variety or varieties you and your spouse speak/spoke to each other:           | 12 Maga                         | 4 Mandarin          | 1 Maga and Tona <sup>10</sup> | 1 Maga and Bunun     |
|  | 1 Mandarin and Tayal            | 8 no answer         |                               |                      |
| Language variety or varieties you and your children speak to each other:               | 2 Maga                          | 3 Mandarin          | 2 Maga and Mandarin           | 1 Maga and Bunun     |
|  | 1 “half and half” <sup>11</sup> | 18 no answer        |                               |                      |
| Language variety or varieties your children speak to each other:                       | 3 Maga                          | 10 Mandarin         | 4 Maga and Mandarin           | 1 Mandarin and Tayal |
|  | 3 “half and half” <sup>11</sup> | 9 no answer         |                               |                      |
| Language variety or varieties you and your siblings speak to each other. <sup>12</sup> | 9 Mandarin                      | 1 Maga and Mandarin |                               |                      |

<sup>1</sup>Due to time constraints, the questionnaire was not administered to five of the subjects. Only gender and age information is available for four of these. Additional demographic information for the fifth individual (i.e., hometown, ethnicity, and hometowns of parents) was obtained from other sources.

<sup>2</sup>The subject stated that his father was Bunun.

<sup>3</sup>An ethnic designation.

<sup>4</sup>The subject reported that her father is Taiwanese.

<sup>5</sup>*pingdiren* (lit., ‘person of the plains area’). The term refers to Taiwan residents of any ethnicity who live in either urban or rural areas of Taiwan’s western plain. In this instance, the subject’s father is Taiwanese.

<sup>6</sup>One subject reported that his mother was a Bunun raised in Maolin Village.

<sup>7</sup>The mother of two of these individuals is Bunun.

<sup>8</sup>The subject stated that his mother is Tayal.

<sup>9</sup>The subject did not specify his wife’s ethnicity.

<sup>10</sup>The subject claimed that she speaks to her husband in the Maga dialect and he speaks to her in the Tona dialect.

<sup>11</sup>An ambiguous answer given by individuals of various ethnic backgrounds.

<sup>12</sup>The question was asked of subjects age 18 and younger with siblings.

## 2 Tona Village Questionnaire

|   |                                |   |                           |                                |
|---|--------------------------------|---|---------------------------|--------------------------------|
| Gender  | 18 male                        |   | 25 female                 |                                |
| Age   |                                |   |                           |                                |
| Marital status<br>(age 19 and above)                                      | 23 married                     | 4 single  | 2 divorced                | 1 widowed                      |
|   | 2 no answer                    |   |                           |                                |
| Language variety or varieties you speak best:<br>(19 and above)<br>(6–18) | 19 Tona                        | 5 Mandarin  | 6 Tona and Mandarin       | 1 Tona and Japanese            |
|   | 1 Tona                         | 11 Mandarin                                       |                           |                                |
| Occupation  |                                |   |                           |                                |
| Education<br>(19 and above)<br><br>(13–18)<br>(6–12)                      | 13 elem school                 | 1 jr high   | 16 sr high                | 1 Bible college                |
|   | 2 jr high                      | 3 sr high   | 1 jr college              |                                |
|   | 1 none                         | 5 elem school                                     |                           |                                |
| Language of education   | 36 Mandarin                    | 6 Japanese  | 1 not applicable          |                                |
| Hometown  | 42 Tona                        | 1 Wanshan   |                           |                                |
| Ethnicity   | 42 Tona<br><i>(koŋadavanə)</i> | 1 Wanshan<br><i>(ʔoponoho)</i>                    |                           |                                |
| Father's hometown<br>(19 and above)<br>(6–18)                             | 29 Tona Village                | 2 Wanshan Village                                 |                           |                                |
|   | 10 Tona Village                | 1 Wanshan Village                                 | 1 Taiwanese <sup>1</sup>  |                                |
| Mother's hometown<br>(19 and above)<br>(6–18)                             | 26 Tona Village                | 5 Wanshan Village                                 |                           |                                |
|   | 9 Tona Village                 | 1 Santimen Township, Pingtung County <sup>2</sup> | 1 mainlander <sup>3</sup> | 1 Hakka                        |
| Have you lived outside of Tona Village?                                   |                                |   |                           |                                |
| How long did you live there?  |                                |   |                           |                                |
| Language variety or varieties your parents speak/spoke to each            | 25 Tona                        | 1 Tona and Mandarin                               | 3 Tona and Japanese       | 1 Tona, Mandarin, and Japanese |

|   |                                  |                                |                                  |                           |
|---|----------------------------------|--------------------------------|----------------------------------|---------------------------|
| other:<br>(19 and above)  |                                  |                                |                                  |                           |
| (6–18)  | 1 Mantauran                      |                                |                                  |                           |
|   | 4 Tona                           | 3 Mandarin                     | 3 Tona and Mandarin <sup>4</sup> | 1 Mandarin and Taiwanese  |
|   | 1 no answer                      |                                |                                  |                           |
| Ethnicity of your spouse:   | 19 Tona<br>( <i>koŋadavanə</i> ) | 1 Maolin<br>( <i>tulðika</i> ) | 1 Paiwan                         | 1 mainlander <sup>3</sup> |
|   | 1 Taiwanese                      | 1 Hakka                        |                                  |                           |
| Language variety or varieties you and your spouse speak/spoke to each other:          | 12 Tona                          | 6 Tona and Mandarin            | 1 Tona and Japanese              | 4 Mandarin                |
|   | 1 Mandarin and Taiwanese         |                                |                                  |                           |
| Language variety or varieties you and your children speak to each other:              | 6 Tona                           | 6 Tona and Mandarin            | 4 Mandarin                       | 1 Mandarin and Taiwanese  |
|   | 7 no answer                      |                                |                                  |                           |
| Language variety or varieties your children speak to each other:                      | 10 Tona and Mandarin             | 2 Tona, Mandarin, and Japanese | 8 Mandarin                       | 1 Mandarin and Taiwanese  |
|   | 1 not applicable                 | 3 no answer                    |                                  |                           |
| Language variety or varieties you and your siblings speak to each other: <sup>5</sup> | 2 Tona and Mandarin              | 9 Mandarin                     |                                  |                           |

<sup>1</sup> *pingdiren* (lit., ‘person of the plains area’). The term refers to Taiwan residents of any ethnicity who live in either urban or rural areas of Taiwan’s western plain. In this instance, the subject’s father is Taiwanese.

<sup>2</sup> The subject reported that her mother was Rukai.

<sup>3</sup> *weishengren* (lit., ‘person of an outside province’, i.e., from a province of China). The term refers to those who came to Taiwan from China between 1945 and 1949 and their descendants.

<sup>4</sup> Two subjects clarified that Tona was the more frequently spoken language.

<sup>5</sup> The question was asked of subjects 18 and younger with siblings.

## Appendix B: Imitation Tests

### 1 Maga Dialect Imitation Test

#### 1.1 Test Sentences

- (1) ađi ŋulu!
- (2) abrele kiki.
- (3) trađoŋa musu.
- (4) sakrođuŋa tubi.
- (5) saokura maucuru gili nma.
- (6) uputaki knee icoo.
- (7) kosatepruu na aŋatu.
- (8) isierki ki mamaa.
- (9) urgu ki kanaw luŋluŋee.
- (10) astitali kđoo vlavlaki.
- (11) ukpusli kiki kwoni na broo.
- (12) ikee blatı ki ninaa.
- (13) marimuru pkee dani na sosisu.
- (14) nudu maa kiki na vlisni pwabreve.

## 1.2 Translation of Test Sentences

- (1) ađi ɲulu!  
NEG drink  
Don't drink!
- (2) abrele kiki.  
tired 1S.NOM  
I am tired.
- (3) trađo-ɲa musu.  
big-already 2S.NOM  
You have gotten big.
- (4) sakrođu-ɲa tubi.  
start-already cry  
(S/he) started to cry.
- (5) saokura maucuru gili nma.  
very fat younger.sibling 1S.GEN  
My younger sibling is very fat.
- (6) uputaki knee icoo.  
run this person  
This person ran/is running.
- (7) ko-sa-tepruu na aɲatu.  
1S.NOM-use-make brushwood  
I want to use brushwood to make a fire.

- (8) i-sierki ki mamaa.  
 NEG-sleep NOM father  
 Father did not sleep.
- (9) u-rgu ki kanaw luŋluŋee.  
 ACT/REAL-know NOM Kanaw swim  
 Kanaw knows (how to) swim.
- (10) astita-li kɔo vlavlaki.  
 NOM:beat-1S.NOM that child  
 It is I who beat that child.
- (11) ukpusi kiki kwoni na broo.  
 twice 1S.NOM eat rice  
 I ate rice twice.
- (12) ikee blati ki ninaa.  
 exist outside NOM mother  
 Mother is outside.
- (13) marimuru pkee dani na sosisu.  
 forget put house key  
 He forgot (his) keys at home.
- (14) n-udu maa kiki na vlisi pwabreve.  
 will-carry.on.back will 1S.NOM wild.pig to:village  
 I will bring the wild pig back to the village.



## 2 Tona Dialect Imitation Test

### 2.1 Test Sentences

- (1) abaili kakə.
- (2) taomomoa koso.
- (3) siakiaodɔŋa tobi.
- (4) saokwa mamitə valakili.
- (5) tyaiday kodɔy maodɔŋə.
- (6) kosyatiapoy nakay ʔaŋato.
- (7) isiaəkə ki tatava.
- (8) waigoʔo ki takanaw loŋolaŋoi.
- (9) akakə ka wakanə na bələbələ.
- (10) wakoposalə kakə kwanə na doʔo.
- (11) ikaʔacə nakoa naɖooay sosoaʔa.
- (12) yakai balatə ki titina.
- (13) yakai balatə titina doʔodoʔo.
- (14) amwa ki takanaw kwanə na bələbələ.

(15) “ʔaokaya nosiʔa” mi kakə djanə.

## 2.2 Translation of Test Sentences

(1) abaili            kakə.  
tired            1S.NOM  
I am tired.

(2) taomomoa      koso.  
grown.up      2S.NOM  
You are grown up.

(3) siakiaodɔ-ŋa   tobi.  
start-already cry  
(S/he) started to cry.

(4) saokwamamitə      valak-ili.  
very fat            child-1S.GEN  
My child is very fat.

(5) tyaiday          koɔɔay          maodɔŋə.  
run            that          old.person  
That old person ran/is running.

(6) ko-sya-tiapoy                      nakay ʔaŋato.  
1S.NOM-use-make.a.fire      this brushwood  
I want to use this brushwood to make a fire.

(7) i-siaəkə          ki          tatava.  
NEG-sleep      NOM father  
Father did not sleep.

- (8) w-a-igoʔo                      ki      takanaw                      loaŋolaŋoi.  
 ACT-REAL-know      NOM Takanaw                      swim  
 Takanaw knows (how to) swim.
- (9) a-kakə                      ka      wakanə                      na      bələbələ.  
 1S.TOP                      TOP      eat                                           banana  
 As for me, I ate a banana.
- (10) wakoposalə      kakə                      kwanə                      na      doʔo.  
 twice                      1S.NOM                      eat                                           rice  
 I ate rice twice.
- (11) i-kaʔacə                      nakoa                      naɖooay                      sosoaʔa.  
 NEG-bite                      1S.OBL                      that                      snake  
 The snake did not bite me.
- (12) yakai                      balatə                      ki                      titina.  
 exist                      outside                      NOM                      mother  
 Mother is outside.
- (13) yakai                      balatə                      titina                      doʔodoʔo.  
 exist                      outside                      mother                      cook  
 Mother is cooking outside.
- (14) amwa ki      takanaw                      kwanə                      na      bələbələ.  
 go                      Takanao                      eat                                           banana  
 Takanao went to eat the banana.

- (15) “ʔaokay-a                    nosiʔa”                    mi    kakə                    dʒanə.  
 come-IMP                    tomorrow                    so    1S.NOM                    3S.OBL  
 I asked him to come tomorrow. (Lit: “Come tomorrow,” I said to him.)

## References

### 中文書目 Chinese references

- 行政院原住民族委員· 1983· 全國原住民族族群人口數統計表。[Council of Aboriginal Affairs, Executive Yuan, ROC. 2001. National Aboriginal tribes population statistics]. Online. URL: [http://www.apc.gov.tw/02\\_convinent/05\\_statistics/aprp5801.htm](http://www.apc.gov.tw/02_convinent/05_statistics/aprp5801.htm). Jan 28 2002.
- 何大安· 1983· 〈魯凱語親屬關係〉《中央研究院歷史語言研究所集刊》47:245–274. [Ho, Dah-an. 1983. The position of Rukai in Formosan languages. *Bulletin of the Institute of History and Philology* 47.245–274.]
- 賴阿忠· 1995· 〈魯凱語的現況與維護〉在《台灣南島民族母語研究論文集》李壬癸、林英津編。台北：教育部教研會，179–201頁。[Lai, A-zhong. 1995. The present situation and preservation of the Rukai language. *Collection of research papers on mother tongues of the Taiwan Austronesians*, ed. by Paul Jen-kuei Li and Ing-jin Lin, 179–201. Taipei: Ministry of Education Committee of Educational Research.]
- 李壬癸、林英津編· 1995· 《台灣南島民族母語研究論文集》。台北：教育部教研會。[Li, Paul Jen-kuei, and Ing-jin Lin. 1995. *Collection of research papers on mother tongues of the Taiwan Austronesians*. Taipei: Ministry of Education Committee of Educational Research.]
- 盧慧真· 1998· 〈屏東縣泰武鄉排灣族母語流失之調查〉在《一九九七全國英美文學，語言學論文研討會論文集》王添源總編輯編，237–254頁。台北：文鶴。[Lu, Hui-chen. 1998. Survey of language loss among the Paiwan of Taiwu Township, Pingtung County. *Proceedings of 1997 National Conference on English/American Literature and Linguistics*, ed. by Wang Tian-yuan, 237–254. Taipei: Crane.]
- 汪明輝、浦忠勇· 1995· 〈鄒語使用現況之初步調查分析〉在《台灣南島民族母語研究論文集》李壬癸、林英津編。台北：教育部教研會，131–177頁。[Wang, Ming-hui, and Pu Zhong-yong. 1995. Analysis of a preliminary survey regarding the present use of the Tsou language]. *Collection of research papers on*

*mother tongues of the Taiwan Austronesians*, ed. by Paul Jen-kuei Li and Ing-jin Lin, 131–177. Taipei: Ministry of Education Committee of Educational Research.]

English references

- Dyen, Isidore. 1965. Formosan evidence for some new Proto-Austronesian phonemes. *Lingua* 14:285–305.
- Ferrell, Raleigh. 1969. *Taiwan Aboriginal groups: Problems in cultural and linguistic classification*. Institute of Ethnology Monograph 17. Taipei: Academia Sinica.
- Grimes, Barbara (ed.) 2001. *Ethnologue: Languages of the world*, fourteenth. ed. Dallas: SIL International. URL: <http://www.ethnologue.com>. Nov. 5, 2001.
- Han, Shih-fen. 1996. *A survey of language ability and language use of the Aborigines on Taiwan* [台灣原住民語言能力及語言使用之調查研究]. Hsinchu: National Tsinghua University dissertation.
- Hsin, Tien-Hsin. 2001. *Aspects of Maga Rukai phonology*. Storrs, CT: University of Connecticut dissertation.
- Li, Paul Jen-kuei. 1973. *Rukai structure*. Institute of History and Philology Special Publication 64. Taipei: Academia Sinica.
- Norman, Donald A. 1976. *Memory and attention*. New York: John Wiley and Sons.
- Radloff, Carla F. 1991. *Sentence repetition testing for studies of community bilingualism*. Summer Institute of Linguistics and University of Texas at Arlington Publications in Linguistics 104. Dallas: Summer Institute of Linguistics and University of Texas at Arlington.
- Shelley, George L. 1978. *Vudai Dukai: the language, its contexts, and its relationships*. Hartford, CT: Hartford Seminary Foundation dissertation.
- Starosta, Stanley. 1995. A grammatical subgrouping of Formosan languages. *Austronesian studies relating to Taiwan*, ed. by Paul Jen-kuei Li, Dah-an Ho, Ying-kuei Huang and Cheng-hwa Tsang, 683–726. Symposium Series of the Institute of History and Philology, Academia Sinica 4. Taipei: Academia Sinica.

Stevick, E.W. 1976. *Memory, meaning, and method*. Rowley, Massachusetts: Newbury House Publishers.

Zeitoun, Elizabeth. 1993. A note on the pronominal system of Mantauran (Rukai). Synchronic and diachronic considerations, ms.

Zeitoun, Elizabeth. 1995. *Problèmes de linguistique dans les langues aborigènes de Taiwan* [Issues in Formosan linguistics]. Paris: Université René Diderot Paris 7 dissertation.