The State of Dialect Speech Perception in the Younger Generation of the Miyako Islands

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Yumi NAKAJIMA, Akiko TOKUNAGA & Daigo MOROOKA

1. Introduction

As of this writing, there have been many reports and analyses regarding a number of unusual speech sounds that are heard often on the Miyako Islands. Among them, a vowel, corresponding to **i* in the mainland dialects, that is accompanied by a distinct friction noise due to the tip of the tongue approaching the alveolar ridge has especially garnered attention. The questions of how to define this vowel phonetically and how to describe it phonologically have also been raised, and attempts have been made at analyzing it using experimental phonetics. Through the use of a standardized survey sheet, the joint survey conducted as part of the present project (henceforth: 'the joint survey') has provided us with new, somewhat comprehensive phonetic data, which has made it easier to perform an analysis that takes all aspects of the Miyako dialects into account, and it is against the background sketched above that we decided to utilize this data in a survey on the linguistic behavior of the younger generation that we had been conducting. Although it is still just an experimental attempt at this stage, and the methodology and the like must be tested, we hope that it will be of use in grasping the state of dialect speech perception in the younger generation in the interest of the preservation and passing on of these endangered dialects.

Yumi Nakajima and her students at the Faculty of Social Sciences of Hitotsubashi University have been conducting a continuous survey on the state of everyday language use on Miyakojima and Irabujima since 2008. Although, for purposes of comparison, it is also partly a survey of the older generation, it mostly focuses on the younger generation, high school students in particular. We have been trying different ways of combining questionnaires and interviews, but while we have always been interested in how the younger generation perceives those phonetic characteristics that are different not only from those of mainland Japanese, but also from those of Okinawa Island, we had not been able to settle on a methodology for investigating this.

With the above in mind, we decided to seek a way forward by including speech recognition items in a small questionnaire conducted in November 2011, which formed the beginning of an experimental attempt at using the data obtained in the joint survey. Based on the results of that questionnaire, we conducted a somewhat larger-scale survey specifically tailored to speech recognition in March 2012. In this chapter, we will report on the results obtained thus far, on the basis of which we plan to determine the direction in which to proceed with this research.

2. Survey overview

A. Survey 1 on the state of Miyakojima dialect speech recognition in the younger generation

B. Survey 2 on the state of Miyakojima dialect speech recognition in the younger generation

2.1 Survey 1 and Survey 2

Survey 1 was conducted in November 2011 with the cooperation of two of the prefectural high schools in Miyakojima City, as part of a survey on the state of everyday language use by high school students. The survey combined a questionnaire with interviews; for the questionnaire, five items that included unusual speech sounds were selected from among the phonetic data collected in the joint survey and played back for the high school students, who were asked, (1) 'What does it sound like?' (Japanese kana were specified as the means to write down the answer, the choice between katakana and hiragana being up to the student), and (2) 'Do you know what it means?' Additionally, for purposes of comparison, a questionnaire on the same items was conducted in March 2012 with the cooperation of a high school in central Okinawa Island. The two high schools in Miyakojima City will be referred to as 'high school A' and 'high school B', while the third high school, located in Urasoe City, will be referred to as 'high school C' [1]. Combined, 130 students at these schools participated in the survey, 79 male and 51 female.

Survey 2 was conducted in March 2012, again at the high schools in Miyakojima City. A somewhat larger-scale survey specifically tailored to speech recognition based on the results of Survey 1, it contained fifty items, again selected from among the data collected in the joint survey. As the task of transcribing fifty items is quite a lot more demanding of the students than an ordinary questionnaire, we asked the schools to enlist volunteers; we were able to secure the cooperation of seventeen students, two male and fifteen female. We will give an overview of the above two surveys in the following section.

2.2 On the survey contents

The items used for Survey 1 were the four words and one sentence given in Table 1. They were selected because they contain unusual speech sounds that deviate markedly from the sounds of Standard Japanese; that is, (1) a central vowel that is accompanied by friction noise, (2) a group of consonants ([m̩], [l̩], and the like; henceforth referred to simply as 'syllabic m', 'syllabic l', and so on), and (3) another group of unusual consonants ([f], [v], and the like). Recordings of a high quality with a clear pronunciation were

Table 1. Survey 1 speech recognition items

	Item	Recording site
1	'head'	Irabu
2	'liver'	Kugai
3	'earthworm'	Bora
4	'rice ball'	Irabu
5	'A child is born.'	Yonaha

1 The three schools that cooperated with these surveys were Okinawa Prefectural Miyako High School and Okinawa Prefectural Irabu High School in Miyakojima City and Okinawa Prefectural Urasoe Industrial High School in Urasoe City. We would like to take this opportunity to thank these three schools for their cooperation. Survey 1 was jointly conducted by fourteen undergraduate and one graduate student studying under Yumi Nakajima at the Faculty of Social Sciences of Hitotsubashi University as well as three undergraduate students at Shigakukan University in Kagoshima. Survey 2 was jointly conducted by Yumi Nakajima and two of her graduate students, the coauthors of this chapter.

Table 2. Survey 2 word items.

Sites	Miyakojima			Kurima-jima	Irabujima		No. of sites
	Kugai	Bora	Miyaguni	Kurima	Irabu	Kuninaka	
'head'	○	—	—	—	○	○	3
'liver'	○	—	—	—	○	○	3
'sugar cane'	○	○	—	—	○	—	3
'breath'	○	—	—	○	—	—	2
'lightning'	○	○	—	—	—	—	2
'you'	○	—	—	—	—	○	2
'sickle'	○	—	—	—	○	—	2
'fog'	○	○	—	—	—	—	2
'fist'	—	○	—	—	○	—	2
'fish'	○	—	—	—	○	—	2
'person'	○	—	—	—	○	—	2
'everyone'	○	—	—	—	○	—	2
'niece'	—	○	—	—	—	○	2
'grease miso'	—	○	—	—	—	—	1
'ant'	—	—	—	—	—	○	1
'sea'	—	○	—	—	—	—	1
'mirror'	—	—	—	—	○	—	1
'mouth'	—	—	—	—	—	○	1
'night-scented lily'	—	○	—	—	—	—	1
'child'	○	—	—	—	—	—	1
'anyone'	—	—	○	—	—	—	1
'the moon'	○	—	—	—	—	—	1
'the east'	○	—	—	—	—	—	1
'daytime'	○	—	—	—	—	—	1
'all together'	—	—	○	—	—	—	1
'elderly person'	○	—	—	—	—	—	1
No. of word items	16	8	2	1	9	6	42

Table 3. Survey 2 sentence items.

	Item	Recording
1	'A child is born.'	Irabu
2	'I went to the sea.'	Kurima
3	'Cockroaches don't die easily.'	Bora
4	'High school students wear uniforms.'	Bora
5	'Yesterday, the principal sat.'	Bora
6	'I just drank tea.'	Uruka
7	'Yesterday, I played with my cousin.'	Uruka
8	'I went to the sea yesterday, too.'	Bora

selected from among the data collected in the vocabulary modules of the joint survey. The single sentence was also obtained in the vocabulary module of the joint survey, as an example sentence. At this stage, we did not give particular consideration to regional differences in speech sounds.

In Survey 2, the number of items was increased to fifty. The selection criteria were generally the same as those used in Survey 1, but in cases where regional differences had been identified in the joint survey, we strove to select a sample for each feature when the quality of the recordings permitted this. For example, even among just the survey sites of the joint survey, what appear to be three variants of the sound corresponding to *-*ri* in the mainland dialects were identified: that of southwestern Miyakojima, including Kugai, which is accompanied by a distinct friction noise; that of Karimata, Ikema, and the like, which is more vowel-like; and that of Irabujima, Kuninaka, and the like, which sounds like a syllabic l. In order to determine how high school students perceived these regional differences, we selected recordings from the three recording sites of Kugai, Kuninaka, and Irabu for the item 'head', which contains the sound corresponding to *-*ri*. For each survey site, however, there were either no recordings of certain items or only recordings that were unusable due to their quality, so it was not possible to make an exhaustive selection of recordings. Including words added in order to examine other seemingly unusual speech sounds and semantic comprehension, 42 word items were selected and arranged to avoid consecutive words that either have the same meaning or were recorded at the same site. Furthermore, eight short sentences from the grammar module of the joint survey were added. This was done in order to find out how dialect perception differs between words and sentences, but the phonetic criteria given above for the word items were also taken into account in their selection.

In the survey, each of the recordings was played back three times in direct succession for the high school

students, who were asked to transcribe them. As in Survey 1, the answers were to be written down using kana, the choice between katakana and hiragana being up to the student. All the different word items and the sites whose recordings were selected for them are given in Table 2 on the previous page, while the sentence items and their recording sites are given in Table 3. Additionally, distribution maps indicating the regional differences are given in Figures 1–8.

2.3 On the treatment of the different phonetic characteristics

We focused on regional variants in Survey 2 because we thought that their differences might be reflected to a significant degree in the high school students' perception. We hoped that we would be able to attain a more concrete understanding of speech perception in the younger generation if we compared how they would process each variant—how they would react to different sounds appearing in similar words. Our classification of these variants was geared towards this purpose; it was not based on a comprehensive understanding of geographic distributions among the different areas of Miyakojima. The joint survey was not originally aimed at investigating distributions, nor have the documentation formats of the different researchers been standardized. We therefore decided to classify the variants on the basis of the sound recordings, using the documentation by the researchers as a reference. There were cases where the recording quality and the like made classification difficult; we made the final judgments ourselves [2].

2.4 Regarding the survey participants

Survey 1

The numbers of students participating in the survey at each of the three schools, broken down by sex, are given in Table 4 on the next page. There were first-year as well as second-year students among them, but as there were no noticeable differences between them in the survey results, grades have not been indicated. While there was no large difference in number between male and female participants at high school A, there were relatively fewer female participants at high schools B and C. A breakdown of the birthplaces and places of residence of the students at the two schools in Miyakojima City (School A, B) is given in Tables 5 and 6 on the next page. Although there were four students born outside Okinawa Prefecture at high school A and five at high school B, for a total of nine, their survey results have not been excluded from the data. The birthplaces and places of residence of the students at high school C are given separately in Tables 7 and 8.

Survey 2

As was mentioned above, this survey was conducted with the cooperation of a total of seventeen high school students; three first-year students and fourteen second-year students, or fifteen female and two male students. Fourteen of the students were born on Miyakojima (none on Irabujima) and three outside Okinawa Prefecture (Kagoshima, Aichi,

2 There were also cases where the informant would pronounce a word with a strong friction sound at first, but then pronounce it slowly with a vowel instead upon the researcher asking them to repeat it. While it is an interesting question what this reveals about the informant's internal phonology, we have used both forms in these cases. Although vowels were realized in various ways, as well, such as more to the front or more to the back, we did not distinguish between these different pronunciations.

and Tokyo). They all currently live on Miyakojima, twelve of them in the Hirara area (including Shimozato, Nishizato, and Higashi-Nakasone, among others), two in Kugai, one in Uruka, and one in Gusukube; the exact place of residence of one of the students is unclear. Among the students who had experience living outside the island, twelve had lived on Miyakojima for sixteen years or more, but among the remaining five, two students had not lived there for more than five years. Because the whole classes who are the objects of our regular surveys do not exclusively consist of students who were born and raised in the areas in question, either, we have chosen not to differentiate between these groups of participants. As regards their parents, both of them are from Miyakojima in the case of eleven students, one of them in the case of four students, and neither in the case of two students.

Table 4. Number of participating high school students by sex

High school	A	B	C	Total
Male	20	21	38	79
Female	27	9	15	51
Total	47	30	53	130

Table 5. Birthplace (high school A & high school B).

High school	A	B	Total
Within the Miyako Islands	41	23	64
Within Okinawa Prefecture	2	2	4
Outside Okinawa Prefecture	4	5	9
Total	47	30	77

Table 6. Place of residence (high school A & high school B).

Highschool	A	B	Total
Hirara	36	1	37
Gusukube	4	0	4
Ueno	3	0	3
Shimoji	2	0	2
Sarahama	0	13	13
Irabu	0	10	10
Unknown	2	6	8
Total	47	30	77

Table 7. Birthplace (high school C).

Urasoe/Ginowan	35
Northern/central Okinawa Island (other)	6
Southern Okinawa Island	7
Outside Okinawa Island; within Okinawa Prefecture;	1
Outside Okinawa Prefecture	3
Unknown	1
Total	53

Table 8. Place of residence (high school C).

Urasoe/Ginowan	39
Northern/central Okinawa Island (other)	5
Southern Okinawa Island	9
Total	53

3. Survey results

3.1 Survey 1: speech perception and semantic comprehension

3.1.1 'Head'

For 'head', a recording from Irabu on Irabujima (transcribed as 'kʰanamaɭ' in the joint survey documentation) was used. At the Kuninaka survey site, also on Irabujima, there is a clear syllabic *l* at the end of this word; in Irabu the sound is more vowel-like than that, but it sounds more lateral than in Karimata on Miyakojima, for example. It thus sounds like an intermediate pronunciation.

Among the 121 students who transcribed this item, there were only twelve who used something other than 'カ' (*ka*)[3] for the beginning of this word (see Table 9 on the next page); everyone else used 'カ', and the transcriptions of more than half of them matched the recording up to 'カナマ' (*kanama*). Among the answers that matched it up to 'カ

3 As was indicated above, both hiragana and katakana were used for the answers, but as no one used a mixture of them to transcribe a single item, we use katakana to represent both here.

Table 9. Answers beginning with something other than カ.

	タ (*ta*)	ハ (*ha*)	
High school A	1	1	
High school B	1	4	
High school C	5	—	
Total	7	5	12

Table 10. What followed ‘ カナマ ’.

カナマ +	イ (*i*)	ウ (*u*)	エ (*e*)	ズ (*zu*)	ル (*ru*)	ア / ー (*a*)	ヌ (*nu*)	ン (*n*)	Ø	
High school A	6	5	1	3	3	—	2	3	2	
High school B	22	3	—	—	—	2	—	—	—	
High school C	—	—	1	—	2	1	—	2	1	
Total	28	8	2	3	5	3	2	5	3	59

ナマ ’, we looked at how the students transcribed the following sound (see Table 10). Vowels were most numerous; in all, only five student used ‘ ル ’ (*ru*), presumably to represent a syllabic *l*. Among the vowels, ‘ イ ’ (*i*) was the most numerous, followed by ‘ ウ ’ (*u*) [4]. Interestingly, of the students of high school B who live on Irabujima, where one can hear the syllabic *l* being used by the older generation as in Kuninaka, none used ‘ ル ’. It may be that it is precisely

Table 11. What followed ‘ カナ X’ (‘X’ signifying one or two arbitrary kana).

カナ X +	ン (*n*)	イ (*i*)	エ (*e*)	リ (*ri*)	ア (*a*)	
High school A	6	3	2	2	1	
High school B	—	1	—	—	—	
High school C	15	—	1	—	1	
Total	21	4	3	2	2	32

Table 12. Examples of answers that matched the recording up to ‘ カナ ’.

カナムアイ	‘*kanamuai*’
カナムイ	‘*kanamui*’
かなもぃ	‘*kanamoi*’
かなんまい	‘*kananmai*’
カナゴ゜エ	‘*kanagoe*’
カナゴェ	‘*kanagoe*’
カナモエ	‘*kanamoe*’
かなんまり	‘*kananmari*’
かなうぁん	‘*kanauan*’
カナウマン	‘*kanauman*’
かなむぁん	‘*kanamuan*’
カナムァン	‘*kanamuan*’
カナムゥン	‘*kanamuun*’
カナムン	‘*kanamun*’
かなむん	‘*kanamun*’
カナモェン	‘*kanamoen*’
カナワン	‘*kanawan*’
かなわん	‘*kanawan*’

because they were used to hearing this dialect sound that they did not expressly transcribe it as such, but this is conjecture.

Next, among the answers that matched the recording up to ‘ カナ ’ (*kana*), ‘ ン ’ (*n*) was used most often to transcribe the final sound (see Table 11). On the whole, when comparing these answers to those that matched it up to ‘ カナマ ’, these students’ perception of the word-final sounds was less consistent. Furthermore, considering how multiple students transcribed it as ‘ かなむん ’ (kanamun; five students) at high school A and as ‘ かなわん ’ (kanawan; six students) at high school C, it may be that some of the students having trouble determining what sounds followed ‘ カナ ’ reasoned their way towards a straightforward word form.

While we have considered the answers that were close to the dialect form above, there were many considerably different answers, as well, such as ‘ カラマル ’ (*karamaru*) and ‘ ツナマヨ ’ (*tsunamayo*). Incidentally, while the degree of semantic comprehension was on the whole low, that of ‘head’ was highest among the five items (see Table 13),

Table 13.The meaning of ‘head’

	Students answering ‘head’
High school A	5
High school B	9
High school C	—
Total	14

Table 14. The connection between semantic comprehension and form (how the students who answered the meaning correctly transcribed the form).

‘Head’	カナマイ (*kanamai*)	カナムアイ (*kanamuai*)	カナマウ / ゥ’ (*kanamau*)	カナマル (*kanamaru*)	カナム (*kanamu*)
High school A	2	—	1	1	1
High school B	5	1	3	—	—

4 After pronouncing a word once with a syllabic l or a friction noise, one sometimes hears the older generation use an i when pronouncing it again slowly; it is unclear if there is a connection.

but there cannot be said to be a correlation between the actual transcription and semantic comprehension (see Table 14).

3.1.2 'Liver'

For 'liver', a recording from Kugai on Miyakojima, where it is pronounced with a strong friction noise ('kˢᶻīmu' in the joint survey documentation), was used. How did the students perceive such a marked friction noise? Not counting the students who were unable to give an answer, everyone used 'ク' (*ku*) for the beginning of the word. We consider either 'ス' (*su*) or 'ツ' (*tsu*) following this 'ク' to be a likely reflection of the friction noise. If this is correct, it turns out that the students of Okinawa Island (School C) were more responsive to this sound. While, similarly to 'head' above, the students of Miyakojima (School A, B) only have a marginal familiarity with this word in regard to semantic comprehension, they might be able to recognize the sound it contains as a 'regional' or 'natural' sound. Incidentally, 'ス'

Table 15. 'Liver': is the word-initial ク followed by ス or ツ?

High school	Yes	No	Total
A	9	38	47
B	—	29	29
C	20	25	45
Total	29	92	121

Table 16. 'Liver': transcriptions following ク that are thought to reflect the friction noise.

High school	ス (*su*)	セ (*se*)	ツ (*tsu*)	Total
A	9	—	—	9
B	—	—	—	0
C	18	1	1	20
Total	27	1	1	29

was by far the most commonly used of the transcriptions thought to reflect the friction noise, as can be seen in Table 16.

Next, we will look at how the transcriptions were structured on the whole, both those that did and those that did not include an element thought to reflect the friction noise. Answers consisting of two *kana* in which 'ク' is followed by 'ヌ' (*nu*), 'ン' (*n*), or 'ム' (*mu*) were most numerous (75 students), but *kana* representing an M sound [5], such as 'ム', accounted for only six of these; 'ヌ' and 'ン' were more common choices at all three schools. This could mean that the students' ability to perceive word-final *-m* is low, or perhaps that that they chose transcriptions representing *n*

Table 17. Answers that did not include an element thought to reflect the friction noise

	Two-*kana* forms	Other				Total
	Final nasal	Total	KNC	KNN	KvN	
High school A	*n*	28	5	3	2	38
	m	2	—	—	—	2
High school B	*n*	24	3	—	0	27
	m	0	—	—	—	0
High school C	*n*	17	3	—	—	20
	m	4	1	—	—	5
Total		75	12	3	2	92
	E.g.	くぬ (*kunu*) くん (*kun*) クム (*kumu*) クム(*kumu*)	くぬっ (*kunutsu*) くんっ (*kuntsu*) クモッ (*kumotsu*)	クヌン (*kunun*)	くぅぬ (*kūnu*)	

('v' represents vowels; a lowercase 'v' is used to distinguish them from consonants).

5 As regards kana used to represent the word-final nasal, we use the term 'n sound' for kana such as 'ヌ' and 'ン', and 'm sound' for kana such as 'ム' and 'ㇺ'.

Table 18. Answers that did include an element thought to reflect the friction noise.

	Three-kana forms	Other	Total				
	Final nasal	Total	KSNC	KSNv	KSNN	NSKN	
High school A	*n*	6	—	—	—	1	7
	m	—	—	—	—	—	0
High school B	*n*	—	1	—	—	—	1
	m	0	—	—	—	—	0
High school C	*n*	10	—	—	—	—	10
	n	8	1	1	1	—	11
Total		24	2	1	1	1	29
	E.g.	クスム (*kusumu*) くすん (*kusun*) クセム (*kusemu*) クスミ (*kusumi*)	くすむっ (*kusumutsu*)	クスモア (*kusumoa*)	クスムン (*kusumun*)	ンクスゥ (*nkusunu*)	

('v' represents vowels; a lowercase 'v' is used to distinguish them from consonants).

sounds regardless of an awareness of this sound as a dialect sound. Among the 27 answers including an element thought to reflect the friction noise, on the other hand, answers consisting of three kana were most numerous at 24, sixteen of them representing the word-final nasal as an *n* sound and eight as an *m* sound; answers representing it as an m sound were thus relatively slightly more common than among answers consisting of two *kana*. While the sample size is very small, it may be that the students who perceived the friction noise as a peculiar sound were also more responsive to the word-final *-m*. As was the case with 'head', these answers were more common at high school C; this could perhaps be said to be reflective of a single tendency.

Incidentally, while we had expected the younger generation to be relatively more familiar with the word for 'liver', as it is used in various idioms, only two students gave a meaning for this word, their answers being 'these two people' and 'yesterday'.

3.1.3 '**Earthworm**'

A recording obtained in Bora ('mimʤɿ' in the documentation) was used. Our intention was to find out how the students would perceive syllabic *m*, which is used often in the Miyako dialects, as in *m*: 'sweet potato', for instance. Contrary to our expectations that due to the relatively simple structure, it would be easy to perceive as a dialect sound, the answers were quite rich in variety. Not counting the students who were unable to give an answer (one at high school A and five at high school C), 96 students used 'ミ' (*mi*) for the beginning of the word, but there were also 27 students who used 'ニ' (*ni*). With the exception of 'びんず' (*binzu*), which occurred once, the remainder of the answers all started with a nasal, as well, such as 'みゅんず' (*myunzu*) and 'ネンムズ' (*nenmuzu*). Furthermore, all answers ended in 'ズ' (*zu*), with the exception of two answers ending in 'ツ' (*tsu*). The majority of the answers thus took the form 'ミ/ニ　ズ', so we looked at what kana were used for the syllabic m in the middle of the word. Overviews of forms beginning with 'ニ' and 'ミ' are given in Tables 19 and 20 on the next page, respectively, on the next page. In both cases 'ン' (*n*) was by far the most common; occurrences of 'ム' (*mu*) thought to represent the syllabic *m* were rare. Moreover, the majority of those who used the latter were Okinawa Island high school students (School C) .In comparison to a central vowel accompanied by a friction noise, it would seem that syllabic consonants such as m and l would not sound too strange to

Table 19. Kana used for the middle of the word in answers beginning with ニ .

High school	ン (n)	ンッ (ntsu)	ンム (nmu)	ム (mu)	Total
A	8	1	1	1	11
B	—	—	—	—	0
C	9	—	5	2	16
Total	17	1	6	3	27
Eg.	ニンズ (*ninzu*)	にんっず (*nintsuzu*)	ニンムズ (*ninmuzu*)	ニムズ (*nimuzu*)	

Table 20. Kana used for the middle of the word in answers beginning with ' ミ '.

High school	ン (*n*)	ンッ (*ntsu*)	ンム (*nmu*)	ウン (*un*)	ム (*mu*)	ミ (*mi*)	ニ (*ni*)	ンムン (*nmun*)	Ø	Total
A	32	—	2	1	—	1	—	—	—	36
B	28	1	—	—	—	—	—	—	—	29
C	18	—	1	—	3	4	1	1	2	30
Total	78	1	3	1	3	5	1	1	2	95
Eg.	ミンズ (*minzu*)	ミンッズ (*mintsuzu*)	ミンムズ (*minmuzu*)	みうんず (*miunzu*)	ミムズ (*mimuzu*)	ミミズ (*mimizu*)	ミニズ (*minizu*)	ミェンムンズ (*myenmunzu*)		

the younger generation of today, accustomed as they are to the sounds of foreign languages, but it nevertheless appears that they are not perceived in particular as dialect sounds. Although these unusual dialect sounds may sound peculiar to the younger generation, the sound system of Standard Japanese having become their frame of reference, it appears that they do not particularly stand out to them.

Table 21. How students having trouble identifying the sounds transcribed 'rice ball'.

	マジムン '*majimun*'	マヨネーズ '*mayonēzu*'	マイブーム '*maibūmu*'	マングフ '*mangufu*'	ワームン '*wāmun*'	ワンヌ '*wannu*'
High school A	3	—	1	1	—	—
High school B	21	—	—	—	—	—
High school C	1	1	—	—	1	1
Total	25	1	1	1	1	1

Table 22. The meaning of 'rice ball'.

	'monster'	'ghost'	'cooked rice'	'to taste good'	'my hobby'
High school A	—	1	—	—	—
High school B	11	3	1	1	1
High school C	—	—	—	—	—

Table 23. Examples of transcriptions for 'rice ball'.

マイグン	'*maigun*'
マイブゥ	'*maibwu*'
まいぶ	'*maibu*'
マイブーム	'*maibūmu*'
マイフン	'*maifun*'
マング	'*mangu*'
まんぐ	'*mangu*'
まうぐー	'*maugū*'
マイム	'*maimu*'
マングフ	'*mangufu*'
マグン	'*magun*'
マグーゥ	'*magūu*'
マイム	'*maimu*'
まいむ	'*maimu*'
マイヌ	'*mainu*'
マイヴン	'*maivun*'
マジムン	'*majimun*'
まぐ	'*magu*'
まんず	'*manzu*'
まいみ	'*maimi*'
マィヌー	'*mainū*'
らいぐ	'*raigu*'
まじむん	'*majimun*'
マイムン	'*maimun*'
まる	'*maru*'

3.1.4 'Rice ball'

In one of the vocabulary modules of the joint survey, the word for 'rice ball' was recorded at a number of research sites as a related vocabulary item for '(cooked) rice'. We used a recording from Yonaha ('ma^{z}ɲnu^{z}ɭ' in the documentation). How

did the high school students react to these peculiar sounds? Almost all of the answers either were very different from how the recording actually sounded or seemed to have been attempts at somehow connecting the form with a given meaning. As can be seen in Tables 21–23 on the previous page, 25 students transcribed it as ‘マジムン’ (*majimun*, used to mean ‘ghost’ or ‘monster’ in the Miyako area), and there were even answers such as ‘マイブーム’ (*maibūmu* ‘my boom’, used for things one has recently taken a liking to) and ‘マヨネーズ’ (*mayonēzu* ‘mayonnaise’); it appears that, having trouble identifying the sounds used in the word, the students reasoned their way towards these answers. In any case, it is difficult to offer a more detailed analysis than to just state that the degree of comprehension was low for this word.

3.1.5 ‘A child is born.’

As above, we used a recording obtained in Yonaha as an example sentence in one of the vocabulary modules of the joint survey ([ffanudu mmaɾiː]; the consonant in the particle nu sounds close to *-r-*). We included a sentence item in order to examine whether words and sentences differ in terms of, for example, difficulty in perception and degrees of semantic comprehension.

The answers can be broadly divided into two groups: 44 answers beginning with ‘ファ’ (*fa*) and 47 beginning with ‘パ’ (*pa*). It can be surmised that whichever they chose, the students in the Miyako area (School A, B) are familiar with both ‘ファ’ and ‘パ’ as dialect sounds and naturally chose one of these *kana* when they heard a sound that approximated it. In the two groups of answers beginning with ‘フ ァ’ and ‘パ’, the first part of the recording, corresponding to ‘a child’, is transcribed in a way that can be represented schematically as ‘FARD’ or ‘PARD’ in more than half of the answers (see Tables 24 and 25). Although the ‘D’ represents several different *kana* used by the students, such as ‘ド’ (*do*), ‘ドン’ (*don*), and ‘ドゥ’ (*du*), these all appear to be the result of the accurate perception of the particle in the recording. Taking both groups together, then, it can be concluded that 52 students, or around 40%, perceived the first part of the sentence more or less accurately. It therefore seems reasonable to state that the phonetic perception of sentences is not necessarily more difficult than that of words. This conclusion, however, does not seem to hold for the students of Okinawa Island (School C), who gave many answers such as ‘はなづまり’ (*hana(d)zumari* ‘nasal congestion’), ‘たなのまわり’ (*tana no mawari* ‘around the shelf’), ‘バリどまり’ (*Bari-domari,* the meaning is not

Table 24. ‘A child is born’: answers of which the first part began with ファ (roughly divided into groups represented schematically by uppercase letters).

	FARD	FARN	FARNT	FAID	FAIB	FAIT	FAIND	FANG	FARG/K	FANZ	Total
High school A	11	1	1	—	1	—	—	—	4	1	19
High school B	9	—	—	—	—	—	—	—	—	—	9
High school C	4	—	—	2	—	7	2	1	—	—	16
Total	24	1	1	2	1	7	2	1	4	1	44

Table 25. ‘A child is born’: answers of which the first part began with パ

	PARD	PANG	PAND	PARG	PARK	PART	PAFUN	BARD	HAND	HARB	HANZ	Total
High school A	18	—	—	2	2	—	1	—	—	—	—	23
High school B	1	—	—	—	—	—	—	—	—	2	—	3
High school C	9	3	5	—	—	1	—	1	1	—	1	21
Total	28	3	5	2	2	1	1	1	1	2	1	47

clear), and even ‘ファイトマネー’ (*faito manē* ‘fight money’). This result is the inverse of what we saw above, which seems to suggest a difference in perception between words and sentences.

3.1.6 Survey 1 summary

The results discussed above can be summarized as follows:

1) Although we cannot easily draw conclusions from a survey on just five items, there clearly cannot be said to be a high level of comprehension ability regarding dialectal speech sounds in the younger generation on the Miyako Islands, even though it is claimed that its dialects have been preserved relatively well among those of the Ryukyu Islands. They appear to be unable to associate forms with meanings even for frequently used vocabulary items.
2) The proportion of students who attempted to transcribe sounds such as the friction noise was larger at the Okinawa Island high school than at the Miyakojima City high schools. One possibility to consider is that the fact that they did not understand the meanings of the words at all could be what caused them to try to capture them objectively as sounds. It may be that the stranger the sounds sounded to them, the more they felt the need to proactively distinguish between them in their transcriptions. As dialect use is still relatively prevalent among the middle-aged and elderly generations in Miyakojima City, it may be that the high school students there are at least familiar with the sounds of these dialects, so that they have an awareness of them as a ‘peculiar kind of pronunciation’ even as they are unable to understand them or reproduce them themselves; because of this, they might not perceive them as unusual sounds, reinterpreting them in their own way along the lines of Standard Japanese, instead.
3) On the Miyako Islands, there is a special system for transcribing unusual sounds, *Miyako-gana*, which is widely used locally for compiling dictionaries, the lyrics of traditional songs, publicity campaigns using dialect, and so on. The only apparent attempts at using *Miyako-gana*, however, were two occurrences of ‘ゴ゚’; it can thus clearly hardly be said to be in general use among the younger generation. The students did, however, devise a variety of their own transcriptions. The use of small kana, not only for vowels and geminates, but also for ‘ス’ (*su*), ‘ン’ (*n*), and the like, seems to be one way in which they tried to reproduce their impressions of the sounds in question.
4) Contrary to our expectation that sentences would be more difficult to perceive accurately than words, it appears to be easier to obtain a response to a complete message in the form of a sentence than to an isolated word. It is possible that the sentence was perceived as being easier to understand the gist of and as containing more material on which to base one’s judgment. This can only be said, however, of the students at the Miyakojima City high schools; in contrast to them, the students at the Okinawa Island high school, who did respond to the ‘peculiar sounds’ in the words, had trouble dealing with the sentence. The fact that the students at the Miyakojima City high schools are familiar with the dialect speech of the older generation appears to be a factor here, but it could also suggest a difference in perception between words and sentences.

3.2 Survey 2: speech perception and semantic comprehension

With seventeen students participating, the sample size in Survey 2 was small, so a quantitative analysis is not possible; it is possible, on the other hand, to closely examine how each of the students dealt with the data. In the following, we will take this perspective in considering a number of cases.

3.2.1 'Head', 'the east', and 'lightning': responses to sounds corresponding to **ri*

Table 26. 'Head': all seventeenstudents' transcriptions for all sites.

Site	Kugai	Kuninaka	Irabu
Form	kʰanamazï	kanamaɭ	kʰanamaɻ
1	カナマズ (*kanamazu*)	カナアマル (*kanaamaru*)	(no answer)
2	カナマヅ (*kanama(d)zu*)	カナマル (*kanamaru*)	タナモエ (*tanamoe*)
3	カナマズ (*kanamazu*)	カナマル (*kanamaru*)	カナマル (*kanamaru*)
4	カナマズ (*kanamazu*)	カナマル (*kanamaru*)	カナマル (*kanamaru*)
5	カナマズ (*kanamazu*)	カナーマル (*kanāmaru*)	タナマス (*tanamasu*)
6	カナマズ̥ (*kanamazu*)	カナマル (*kanamaru*)	カナムル (*kanamuru*)
7	カナマズル (*kanamazuru*)	カナァマル (*kanaamaru*)	カナンマ (*kananma*)
8	カナマズ (*kanamazu*)	カナマル (*kanamaru*)	カナモエ (*kanamoe*)
9	カナマツ (*kanamatsu*)	カナーマル (*kanāmaru*)	カナモァ (*kanamoa*)
10	カナマズ (*kanamazu*)	カナーマル (*kanāmaru*)	カナム (*kanamu*)
11	カナマズ (*kanamazu*)	カナマズ (*kanamazu*)	タナグェ (*tanagwe*)
12	カナンマズイリ (*kananmazuiri*)	カナァマル (*kanaamaru*)	カナンムゥ (*kananmuu*)
13	カナマズ (*kanamazu*)	カナマル (*kanamaru*)	カナム (*kanamu*)
14	カナマズ (*kanamazu*)	カナマズ (*kanamazu*)	カナマズ (*kanamazu*)
15	カナマツ (*kanamatsu*)	カナマズ (*kanamazu)*	(no answer)
16	カナマズ (*kanamazu*)	カナマル (*kanamaru*)	カナムゥ (*kanamuu*)
17	カナマァズ (*kanamaazu*)	カナーマル (*kanāmaru*)	タナム (*tanamu)*

First, we will consider words containing sounds that correspond to **ri*. All the data that was obtained in response to recordings of words for 'head' (surmised to derive from **kanamari* based on sound correspondences) are given in Table 26. All of the students transcribed the recordings from Kugai and Kuninaka quite accurately, almost all of their transcriptions matching them up to 'カナマ' (*kanama*). In the case of Irabu, on the other hand, there was on the whole quite a lot of variety, including two students who did not give an answer. When focusing on the end of the word, we can clearly distinguish between three groups of answers. As regards the recording from Kugai, the students can be considered to have recognized the friction sound, seeing how they all used either a fricative such as 'ズ' (*zu*) or 'ス' (*su*) or one of the affricates 'ツ' (*tsu*) and 'ヅ' (*(d)zu*). As for Kuninaka, it is clear that the students were aware of the consonant, as many as fourteen students using either a normal-sized or a small 'ル' (*ru*), while only three students used 'ズ'. Answers making distinctions such as 'Kugai: "カナマズル" (*kanamazuru*)/Kuninaka: "カナマル" (*kanamaru*)' can be seen as examples of this. When we look at the correlations between the answers and the three recording sites, it is clear that a majority of the students accurately perceived the contrast between the Kugai and Kuninaka recordings (see Table 27 on the next page). As we had arranged the words to avoid instances of the same word appearing in succession, students could not directly compare these recordings while listening. Compared to the recording from Irabu, also used in Survey 1, those from Kugai and Kuninaka appear to have been relatively easy to perceive accurately for the high school

Table 27. 'Head':
how the end of the word was transcribed.

Site	Kugai	Kuninaka	Irabu
Form	kʰanamaziï	kanamaɭ	kʰanamaɻ
ズ (*zu*)	10	3	1
ズ゜(*zu*)	1	—	—
ヅ (*(d)zu*)	1	—	—
ツ (*tsu*)	2	—	—
ス (*su*)	—	—	1
ズル (*zuru*) / ズイリ (*zuiri*)	2	—	—
ル (*ru*)	—	13	2
ㇽ (*ru*)	—	1	1
エ (*e*)/ ェ (*e*)	—	—	3
ウ (*u*)	—	—	2
ア (*a*)	—	—	1
Ø	—	—	4
Total	16	17	15

Table 28. 'Head': the correlations among the three sites

Kugai	Kuninaka	Irabu		
-Z	-L	-I	4	
-Z	-L	-L	3	
-Z	-L	-Z	1	
-Z	-L	-Ø	3	
-Z	-L	(no answer)	1	12
-ZL	-L	-I	2	
-ZL	-L	-Ø	1	3
-Z	-L	-Z	1	
-Z	-L	(no answer)	1	
-Z	-L	-I	1	3

(roughly divided into groups represented schematic-ally by uppercase letters; 'Z' signifies a friction noise, 'L' a syllabic l, and 'I' a vowel).

students; almost all of them made a distinction between them. As regards that from Irabu, on the other hand, transcription appears to have been difficult for the students. In addition to the two students mentioned above who did not give an answer, there were also students who transcribed it as 'カナマ', stopping after the first three morae; it is likely that they stopped writing halfway through, unable to decide how to transcribe the end of the word.

Let us consider this from the viewpoint of the correlations between the answers and the three recording sites again. Among the twelve students who made a z/l-distinction between the Kugai and Kuninaka recordings, four students used a vowel and three students used 'ル' for the Irabu recording; of the five remaining students, one used 'ズ', while the rest did not transcribe the end of the word. When compared to the recording from Karimata mentioned above ([kanamaɯ ~ kʰanamaï] according to the documentation; additionally, aha is used as a synonym), the pronunciation in Irabu does sound like the tongue approaches the alveolar ridge quite closely. It would seem that high school students who do not know what the word means would have quite a hard time transcribing it. Furthermore, only two students gave an answer regarding the meaning of the word; one of them only gave the correct answer for the recording from Kuninaka, being unable to give an accurate meaning for the other two sites.

All the data for 'lightning' are given in Table 29 on the next page. When focusing on the end of the word, we see that all students used 'ズ' for the recording from Kugai, with the exception of one student that used 'ヅ'. For the recording from Bora, on the other hand, only one student used 'ズ'; among the rest, answers were diverse, eleven students using 'ル', two using 'ドゥ' or 'ヅ', and two using 'ウ' (*u*), for example. There is a marked friction noise in both the Kugai and the Bora sound recordings, but as is also clear from the different transcriptions used by the researchers in the documentation, it appears that it is weaker in that from Bora, and that the tongue does not approach the alveolar ridge as closely and for as long as in that from Kugai. It would seem reasonable to view the fact that the high school students were divided in how they transcribed the sound in the recording from Bora while they uniformly used 'ズ' for the clear friction sound in the Kugai recording as resulting from their reactions to this subtle difference. An overview of the kinds of sounds the students used for the final part of the word is given in Table 30 on the next page. When these

Table 29. 'Lightning': all seventeen students' transcriptions.

Site	Kugai	Bora
Form	mːnapskaz	nnapskaᶻɻ
1	ンナプカズ (*nnapukazu*)	ンナピカル (*nnapikaru*)
2	ンーナツカズ (*nnatsukazu*)	ンナツカル (*nnatsukaru*)
3	ンナプスカズ (*nnapusukazu*)	ンナピカル (*nnapikaru*)
4	ンーナプスカズ (*nnapusukazu*)	ンナップスカドゥ (*nnappusukadu*)
5	ンーナプゥカズ (*nnapwukazu*)	ンア　ピィカル (*n'a piikaru*)
6	ンーナプスカズ (*nnapusukazu*)	ナプㇲカル (*napusukaru*)
7	ンナプスカズ (*nnapusukazu*)	ンナプカル (*nnapukaru*)
8	ンナピカズ (*nnapikazu*)	ンナピカ (*nnapika*)
9	ンナプツカズ (*nnaputsukazu*)	ンナピカウ (*nnapikau*)
10	ンーナスプカァズ (*nnasupukaazu*)	ンナクスカル (*nnakusukaru*)
11	ンーナプツカァズ (*nnaputsukaazu*)	ンナプカーズ (*nnapukāzu*)
12	ンーナプゥカズ (*nnapwukazu*)	ンナァピカル (*nnaapikaru*)
13	ンーナプㇲカズ (*nnapusukazu*)	ンプㇲカウ (*npusukau*)
14	ウンナツカズ (*unnatsukazu*)	ウナプカル (*unapukaru*)
15	ンナピカヅ (*nnapika(d)zu*)	ンナピカヅ (nnapika(d)zu)
16	ンナプクスカズ (*nnapukusukazu*)	ナプスカル (*napusukaru*)
17	ンナッピカズ (*nnappikazu*)	ンナムピィカァル (*nnamupiikaaru*)

Table 30. 'Lightning': the correlations between the end of the word and the recording site

Kugai		Bora	
Z	17	L	11
		Z	2
		D	1
		U	2
		Ø	1

(roughly divided into groups represented schematically by uppercase letters).

Table 31. 'Lightning', 'the east', and 'head': responses to the Kugai sound corresponding to *ri.Table 32. 'Liver': all seventeen students' transcriptions for all sites.

'lightning'	'the east'	'head'	
Z	Z	Z	10
Z	ZN	Z	2
Z	Z	ZL	2
Z	Z	C	2
Z	SN	Z	1

sounds are classified broadly, we see that only two students used a vowel for the recording from Bora with its weak friction noise, the majority using a consonant.

As there was also an instance of the word for 'the east' among the recordings from Kugai, an overview of how each student reacted to different recordings of this sound from Kugai is given in Table 31. When 'ズ' and 'ヅ' are taken together, it becomes clear that as many as ten students recognized the friction sound in all three words, while there were no students who did not recognize it in any of them. The friction noise in the recordings from Kugai seems to be perceived quite consistently, and it appears to be recognized as involving an independent consonant [z], which matches the documentation by the researchers.

Furthermore, the *Miyako-gana* 'ズ゜' was used twice, as was 'グ゜', which appears to be modeled on Miyako-gana. The sound represented by the latter is usually written as 'クス' (*kusu*); this should be viewed as an indication of how there is no general awareness of *Miyako-gana* among the younger generation, as was also argued in the summary of Survey 1.

3.2.2 'Liver', 'fog', 'the moon', and 'breath': responses to sounds corresponding to **ki*

We will now consider four words containing sounds corresponding to **ki*, representing cases of voiceless consonants followed by central vowels. In the case of 'liver', for which recordings from three sites were chosen, many students used 'ク' (*ku*) followed by 'ス' or 'ス' (*su*) for the recording from Kugai; if we include answers beginning with 'プ' (*pu*), ten students can be considered to have perceived a word-initial consonant followed by some kind of friction noise (see Table 32 on the next page). In the documentation of the joint survey, the transcription of the recording from Kugai has a central vowel preceded by both a voiceless and a voiced friction noise, which would seem to be intended

Table 32. 'Liver': all seventeen students' transcriptions for all sites.

Site	Kugai	Kuninaka	Irabu
Form	kˢᶻïmu	tsɨmu	tsɻmu
1	クスム (*kusumu*)	ツム (*tsumu*)	セム (*semu*)
2	ツヌ (*tsunu*)	ツム (*tsumu*)	スム (*sumu*)
3	プスム (*pusumu*)	ツム (*tsumu*)	スム (*sumu*)
4	プスム (*pusumu*)	ツン (*tsun*)	セム (*semu*)
5	クズ (*kuzu*)	ツム (tsumu)	セム (*semu*)
6	ックニ (*tsukuni*)	ツン (*tsun*)	セム (*semu*)
7	クゥシニ (*kwushini*)	ツゥム (*tswumu*)	スィミ (*simi*)
8	ティニ (*tini*)	ツムゥ (*tsumuu*)	シィミ (*shiimi*)
9	クスリ (*kusuri*)	ツェム (*tsemu*)	セム (*semu*)
10	クスヌッ (*kusunutsu*)	ツム (*tsumu*)	セム (*semu*)
11	クスヌ (*kusunu*)	ツム (*tsumu*)	シム (*shimu*)
12	ㇰンミ (*kunmi*)	ッム (*tsumu*)	スィミ (*simi*)
13	クsムッ (*kusumutsu*)	ツム (*tsumu*)	ツィミ (*tsimi*)
14	ツニ (*tsuni*)	ツム (*tsumu*)	セム (*semu*)
15	クム (*kumu*)	ツム (*tsumu*)	シム (*shimu*)
16	クスミ (*kusumi*)	ツム (*tsumu*)	セヌ (*senu*)
17	クム (*kumu*)	ツム (*tsumu*)	セム (*semu*)

Table 33. 'Liver': the correlations among the three sites.

Site	Kugai	Kuninaka	Irabu	Total
a	KS	C	S	7
b	KS	C	C	1
c	K	C	S	3
d	C	C	S	2
e	PS	C	S	2
f	CK	C	S	1
g	T	C	S	1
				17

Table 34. 'Fog': all seventeen students' transcriptions.

Site	Kugai	Bora
Form	ksï	kʶɭː
1	クス (*kusu*)	クス (*kusu*)
2	クス (*kusu*)	クス (*kusu*)
3	プス (*pusu*)	クス (*kusu*)
4	プス (*pusu*)	クフ (*kufu*)
5	プス (*pusu*)	クズゥ (*kuswu*)
6	プス (*pusu*)	クス (*kusu*)
7	クス (*kusu*)	クゥス (*kwusu*)
8	クゥス (*kwusu*)	クズッ (*kuzutsu*)
9	クス (*kusu*)	クス (*kusu*)
10	クス (*kusu*)	クスゥ (*kuswu*)
11	クス (*kusu*)	クス (*kusu*)
12	クスゥ (*kuswu*)	ㇰスゥ (*kuswu*)
13	クス (*kusu*)	クs (*kusu*)
14	クス (*kusu*)	クスゥ (*kuswu*)
15	クス (*kusu*)	クゥ (*kwu*)
16	プス (*pusu*)	クス (*kusu*)
17	プス (*pusu*)	クス (*kusu*)

Table 35. 'Fog': the correlations between the two sites (lowercase 'i' indicates an arbitrary vowel).

Sites	Kugai	Bora	Total
a	KS	KS	7
b	KS	Ki	1
c	KS	KiS	1
d	PS	KS	4
e	PS	KZ	2
f	PS	KF	1
g	KiS	KZ	1
			17

to indicate the strength and length of the friction sound; the high school students seem to have responded similarly to this strong friction sound. In their transcriptions of both the Irabu and the Kuninaka recording, too, the researchers give an affricate followed by a central vowel. They were transcribed by different researchers, so the transcriptions differ as well, but when the sound recordings are compared, the affricate appears to be stronger in the recording from Kuninaka, while the plosive portion in that from Irabu seems a little weaker. Moreover, the beginning of the word has high pitch in the recording from Kuninaka ([tsɨ]mu), while the end of the word has high pitch in the recording from Irabu (tsɻ[mu]). The high school students overwhelmingly used kana including an s-sound, such as 'サ' (*sa*), 'セ' (*se*), and 'シ' (*shi*), for the recording from Irabu, while only one of them used an affricate; it is likely that it is not only because of the weakness of the plosive portion, but also because of the pitch accent that they had difficulty perceiving the first syllable. An overview of these correlations is given in Table 33.

As is the case with 'liver', the word for 'fog' also begins with a sound corresponding to **ki* [6]; we used recordings from the two sites of Kugai and Bora. The word is pronounced with a marked friction noise in both recordings, but while the researchers of the joint survey have transcribed the recording from Kugai using an independent consonant [s],

6 Although the forms *kʰiɾi* and *kɕɨˈɻɾi* were reported for Irabu and Uechi, respectively, in the joint survey, we have considered the forms reported for the other sites, including Kugai and Bora, as corresponding to a form in which the second half of **kiri* was lost.

Table 36. 'Breath': all seventeen students' transcriptions.

Site	Kugai	Kurima
Form	ikˢï	iᵗsï
1	イクズ (*ikuzu*)	イス (*isu*)
2	イツ (*itsu*)	イス (*isu*)
3	イップゥ (*itsupwu*)	イス (*isu*)
4	イフ (*ifu*)	イス (*isu*)
5	イク (*iku*)	イス (*isu*)
6	イプク (*ipuku*)	イス (*isu*)
7	イク (*iku*)	イス (*isu*)
8	イクゥ (*ikwu*)	イス (*isu*)
9	イク (*iku*)	イス (*isu*)
10	イクゥ (*ikwu*)	イス (*isu*)
11	イク (*iku*)	イス (*isu*)
12	ィユク (*iyuku*)	インス (*insu*)
13	イクズ (*ikuzu*)	イス (*isu*)
14	イク (*iku*)	イス (*isu*)
15	ユツゥ (*yutswu*)	リス (*risu)*
16	イプゥ (*ipuu*)	イス (*isu*)
17	イクゥン (*ikwun*)	イス (*isu*)

Table 37. 'The moon': all seventeen students' transcriptions.

Site	Kugai
Form	tskssu
1	ツンクス (*tsunkusu*)
2	ツクス (*tsukusu*)
3	ツクス (*tsukusu*)
4	ツクスゥ (*tsukuswu*)
5	ッチャスゥ (*tsutyaswu*)
6	ツㇰス (*tsukusu*)
7	ツゥクス (*tswukusu*)
8	ツゥクスゥ (*tswukuswu*)
9	ツクス (*tsukusu*)
10	ツクツクスゥ (*tsukutsukuswu*)
11	(no answer)
12	ックスゥ (*tsukuswu*)
13	ツクスォ (*tsukuswo*)
14	ツクス (*tsukusu*)
15	ツゥクスゥ (*tswukuswu*)
16	ツツス (*tsutsusu*)
17	ツクス (*tsukusu*)

Table 38. How each of the seventeen students transcribed the Kugai sounds corresponding to *ki.

	'liver'	'fog'	'the moon'	'breath'
	Word-initial		Word-final	
1	クス (*kusu*)	クス (*kusu*)	クス (*kusu*)	クズ (*kuzu*)
2	ツ (*tsu*)	クス (*kusu*)	クス (*kusu*)	ツ (*tsu*)
3	プス (*pusu*)	プス (*pusu*)	クス (*kusu*)	ップゥ (*tsupwu*)
4	プス (*pusu*)	プス (*pusu*)	クスゥ (*kuswu*)	フ (*fu*)
5	ク゜(*ku*)	プス (*pusu*)	スゥ (*swu*)	ク (*ku*)
6	ック (*tsuku*)	プス (*pusu*)	ㇰスツ (*kusutsu*)	プク (*puku*)
7	クゥ (*kwu*)	クス (*kusu*)	クス (*kusu*)	ク (*ku*)
8	ティ (*ti*)	クゥス (*kwusu*)	クスゥ (*kuswu*)	クゥ (*kwu*)
9	クス (*kusu*)	クス (*kusu*)	クス (*kusu*)	ク (*ku*)
10	クス (*kusu*)	クス (*kusu*u)	クスゥ (*kuswu*)	クゥ (*kwu*)
11	クス (*kusu*)	クス (*kusu*u)	(no answer)	ク (*ku*)
12	ㇰ (*ku*)	クスゥ (*kuswu*)	クスゥ (*kuswu*)	ユク (*yuku*)
13	クㇲ(*kusu*)	クス (*kusu*u)	クスォ (kuswo)	クズ (*kuzu*)
14	ツ (*tsu*)	クス (*kusu*)	クス (*kusu*)	ク (*ku*)
15	ク (*ku*)	プス (*kusu)*	クスゥ (*kuswu*)	ツゥ (*tswu*)
16	クス (*kusu*)	プス (*pusu*)	ツス (*tsusu*)	プゥ (*pwu*)
17	ク (*ku*)	プス (*pusu*)	クス (*kusu*)	クゥン (*kwun*)

Table 39. Kugai sounds corresponding to *ki: whether the friction noise was transcribed

	'liver'	'fog'	'the moon'	'breath'
Yes	13	17	16	6
No	4	0	1	11

(affricates are also regarded as containing fricativity).

a vowel accompanied by a friction noise is used for that from Bora. Interestingly, nearly all of the high school students, too, used 'クス' (*kusu*) or something similar for the recording from Kugai; if we include answers beginning with 'プ' (*pu*), all answers can be considered to be of the same kind. As the students were asked to use kana, it is unclear how they perceived the vowel following the s, but compared to the recording from Bora, it is likely that their attention was aimed mostly at the strength of the friction sound. While there was only one student who expressly wrote a small 'ウ' (*u*) at the end of the word for the Kugai recording, the number of instances of *kana* such as 'ゥ' and 'ッ' (*tsu*) is higher for the recording from Bora, and there were also transcriptions such as 'ㇲ゜ゥ'[7]. Possibly, these students, while hearing a friction

7 A small 'ウ' is frequently used in Miyako to indicate rounded vowels in contrast to central vowels (e.g. 'がんずぅ' (*ganzuu* 'healthy')). In

noise, did get the impression that the word did not simply end after the consonant. This is all the more interesting when considered in the connection with the joint survey documentation.

Next, we will consider the words for 'the moon' and 'breath', in which the sounds corresponding to ***ki*** appear in the second syllable. Although we have chosen recordings from the two sites of Kugai and Kurima for 'breath', we have chosen only a recording from Kugai for 'the moon'.

There are recordings of two informants from Kurima for 'breath'; of the two, we have used the one with the weaker plosive (see Table 36 on the previous page). The high school students did not perceive the plosive portion of this pronunciation, all of them using 'ス' in their answers.

The reason we have used so many recordings from Kugai in this survey is that we were especially interested in how friction noises would be perceived. An overview of the transcriptions given for the recordings of the four words from Kugai is given in Table 38 on the previous page. The use of 'ス', 'ツ', and the like seems to be a reflection of the strong friction noises in the recordings from Kugai, which is especially clear for 'fog' and 'the moon'. While the perception of these sounds appears to be influenced by aspects such as their position in the word and the pitch accent, and the sample size is too small to draw any conclusions, it is likely that the high school students perceived them as an independent consonant. We hope to be able to pursue this point further, also in light of the correlation with the documentation by the researchers.

3.2.3 'Person', 'daytime', 'lightning': responses to sounds corresponding to **hi*

Next, we will consider sounds that correspond to ***hi***. For the word for 'person', we used recordings from the two sites of Kugai and Irabu (see Table 40). Although the Irabu and Kugai recordings are transcribed the same way in the documentation of the joint survey, the friction noise in that from Kugai sounds much sharper when the sound recordings are compared. When 'ピ' (*pi*) and 'プ' (*pu*) are taken together, the friction noise that follows *p-* was reflected well in the high school students' transcriptions of the Kugai recording; there is only a single exception, in which 'ツ' (*tsu*) was used. Either 'トゥ' (*tu*) or 'ト' (*to*) was used for the second half of the word in the majority of the answers. For the recording from Irabu, on the other hand, answers were more diverse: seven students used 'ツ' for the first half of the word, eight students used 'ピ', 'プ', and the like, and one student used 'ト'. Moreover, there was a variety of transcriptions for the second half of the word, as well: in addition to the ten students who used either 'ト' or 'トゥ', some students used *kana* such as 'テ' (*te*) or 'タ' (*ta*). Incidentally, when looking at the transcriptions of the second half of the word, a small 'ウ' (u) was added at

Table 40. 'Person':all seventeen students' transcriptions.

Site	Kugai	Irabu
Form	pstu	pstu
1	プストゥ (*pusutu*)	プスト (*pusutu*)
2	ピツ (*pitsu*)	ピツ (*pitsu*)
3	ピストゥ (*pisutu*)	プスタ (*pusuta*)
4	プストゥ (*pusutu*)	プストゥ (*pusutu*)
5	ピストゥ (*pisutu*)	ピトゥ (*pitu*)
6	プスト (*pusuto*)	ツトゥ (*tsutu*)
7	プストゥ (*pusutu*)	トゥク (*tuku*)
8	ピストゥ (*pisutu*)	ツトゥ (*tsutu*)
9	プストゥ (*pusutu*)	ツテ (*tsute*)
10	ピストゥ (*pisutu*)	ピストゥ (*pisutu*)
11	ピトゥ (*pitu*)	(no answer)
12	プストゥ (*pusutu*)	ピュストゥ (*pyusutu*)
13	プスト (*pusuto*)	プスト (*pusuto*)
14	プストゥ (*pusutu*)	ツトゥ (*tsutu*)
15	ピトゥ (*pitu*)	(no answer)
16	ピウス (*piusu*)	ツタ (*tsuta*)
17	ツウトッ (*tswutots*)	ツトゥ (*tsutu*)

the case of a central vowel, 'ス', 'ズ' (*zu*), and the like are used without 'ウ'.

Table 41. 'Person': transcriptions of the beginning of the word.

	ピス (*pisu*)	プス (*pusu*)	ピツ (*pitsu*)	ツ (*tsu*)	No answer
Kugai	5	8	1	1	0
Irabu	2	4	1	6	2

Table 43. Whether the friction noises in the Kugai sounds corresponding to *hi were transcribed.

	'person'	'daytime'	'elderly person'	'lightning'	No. of answers
a	○	○	○	○	7
b	○	○	○	×	5
c	×	○	×	○	2
d	○	○	×	×	1
e	×	○	○	×	1
f	×	○	×	×	1

Table 42. How each of the seventeen students transcribed the Kugai sounds corresponding to **hi*.

	Word-initial		Word-final	
	'person'	'daytime'	'elderly person'	'lightning'
Form	pstu	psïma	uipstu	mːnapskaz
1	プストゥ (*pusutu*)	プスマ (*pusuma*)	ウミプトゥス (*umiputusu*)	ンナプカズ (*nnapukazu*)
2	ピツ (*pitsu*)	プスマ (*pusuma*)	ウイピトゥ (*uipitu*)	ンーナツカズ (*nnatsukazu*)
3	ピストゥ (*pisutu*)	プスマ (*pusuma*)	ウリピスト (*uripisuto*)	ンナプスカズ (*nnapusukazu*)
4	プストゥ (*pusutu*)	プスマ (*pusuma*)	ウィッピストゥ (*wippisutu*)	ンーナプスカズ (*nnapusukazu*)
5	ピストゥ (*pisutu*)	プスマ (*pusuma*)	ウイプストゥ (*uipusutu*)	ンーナプゥカズ (*nnapwukazu*)
6	プスト (*pusuto*)	プスマ (*pusuma*)	ウィプスト (wipusuto)	ンーナプスカズ (*nnapusukazu*)
7	プストゥ (*pusutu*)	プスマ (*pusuma*)	ウミプストゥ (*umipusutu*)	ンナプスカズ (*nnapusukazu*)
8	ピストゥ (*pisutu*)	ピスィマ (*pisima*)	ウィピストゥ (*wipisutu*)	ンナピカズ (*nnapikazu*)
9	プストゥ (*pusutu*)	プスマ (*pusuma*)	ウィプスト (*wipusuto*)	ンナプツカズ (*nnaputsukazu*)
10	ピストゥ (*pisutu*)	プスマ (*pusuma)*	ウィピストゥ (*wipisutu*)	ンーナス プカァズ (*nnasupukaazu*)
11	ピトゥ (*pitu*)	プスマ (*pusuma*)	ウミピトュ (*umipityu*)	ンーナプツカァ (*nnaputsukaazu*)
12	プストゥ (*pusutu*)	プスマ (*pusuma*)	ウィピストゥ (*uipisutu*)	ンーナプゥカズ (*nnapwukazu*)
13	プスト (*pusuto*)	プスマ (*pusuma*)	ウミプスト (*umipusuto*)	ンーナプスカズ (*nnapusukazu*)
14	プストゥ (*pusutu*)	プスマ (*pusuma*)	ウイプゥト (*uipwuto*)	ウンナツカズ (*unnatsukazu*)
15	ピトゥ (*pitu*)	プスゥマ (*puswuma*)	ウイピトゥ *(uipitu)*	ンナピカヅ (*nnapika(d)zu*)
16	ピゥス (*piusu*)	プスマ (*pusuma*)	ウグィクス (*ugwikusu*)	ンナプクスカズ (*nnapukusukazu*)
17	ツゥトッ (*tswutotsu*)	ピスマ (*pisuma*)	ウウィップスト (*uwippusuto*)	ンナッピカズ (*nnappikazu*)

the end by twelve out of the seventeen students for the recording from Kugai, as well as by eight students for that from Irabu, regardless of the diversity in transcriptions for the latter; it can be surmised from this that the students perceived the rounded vowel u clearly.

Other words containing sounds that correspond to **hi* are the words for 'daytime', 'elderly person', and 'lightning'. An overview of the transcriptions given for the recordings from Kugai, in which the friction noises are particularly marked, is given in Table 42. Close to half of the students gave transcriptions containing what appear to be reflections of the friction noises for the recordings of all four words (seven students; see 'a' in Table 43). Although the variety in 'c' and below seems to be idiosyncratic, the fact that there were five students among whose transcriptions that of the word for 'lightning' was the only one to lack a reflection of the friction noise, as seen in 'b', may be due to some kind of difference in its phonetic environment.

3.2.4 Consonant perception

In the previous section, the initial syllabic m given in the joint survey documentation for the word for 'lightning' was transcribed using 'ン' (*n*) by all the students. An overview of the students' transcriptions of recordings of words for 'everyone' (partly 'all together') from the three sites we selected are given in Table 44 on the next page. 'ム' (*mu*)

Table 44. 'Everyone': all seventeen students' transcriptions.

Site	Kugai	Irabu	Miyaguni
	'everyone'	'everyone'	'all together'
Form	mːna	mːna	m̥ˀnaɕi
1	ウムンナ (*umunna*)	ンナ (*nna*)	プンーナシ (*punnashi*)
2	ンーナ (*nna*)	ンナ (*nna*)	ピーンナシ (*pīnnashi*)
3	ンッナ (*ntsuna*)	ンナ (*nna*)	ピッナシ (*pitsunashi*)
4	ンーナ (*nna*)	ンナ (*nna*)	インナシィ (*innashii*)
5	ンーナ (*nna*)	ンーナ (*nna*)	ンーナシ (*nnashi*)
6	ンーナ (*nna*)	ンナ (*nna*)	ンーナシ (*nnashi*)
7	ンーナ (*nna*)	ンナ (*nna*)	ピンナシ (*pinnashi*)
8	ンーナ (*nna*)	ンナ (*nna*)	ンナシ (*nnashi*)
9	ンーナ (*nna*)	ンナ (*nna*)	ンナシ (*nnashi*)
10	ンーナッ (*nnatsu*)	ンナァ (*nnaa*)	ンーナシ (*nnashi*)
11	ンーナ (*nna*)	ンナ (*nna*)	ンーナシイ (nnashii)
12	ンーナッ (nnatsu)	ンナァ (*nnaa*)	ンーナシュ (nnashu)
13	ンーナ (*nna*)	ンナ (*nna*)	ンーナシ (*nnashi*)
14	ンーナ (*nna*)	ンナ (*nna*)	ンーナシ (*nnashi*)
15	ンーナ (*nna*)	ンナ (*nna*)	ンーナシ (*nnashi*)
16	ンナァ (*nnaa*)	ンナ (*nna*)	インナシ (innashi)
17	ンーナシ (*nnashi*)	ンナ (*nna*)	ンーナシ (*nnashi*)

Table 45.'Sea': all seventeen students' transcriptions.

Site	Bora
Form	im
1	イン (*in*)
2	イン (*in*)
3	イン (*in*)
4	イヌ (*inu*)
5	イム (*imu*)
6	イン (*in*)
7	イン (*in*)
8	イン (*in*)
9	イン (*in*)
10	イッ (*itsu*)
11	イン (*in*)
12	ンユ (*n'yu*)
13	イム (*imu*)
14	イン (*in*)
15	ビュ (*byu*)
16	イン (*in*)
17	イン (*in*)

was only used in one transcription of the recording of the word for 'everyone' from Kugai; 'ン' was used in all the other answers for the two sites of Irabu and Kugai. In the case of the recording from Miyaguni, there is an audible interruption in the form of a glottal closure; it is difficult to identify any particular reaction to this, but compared to the transcriptions of the Irabu and Kugai recordings, the students can be seen to have come up with a variety of ways to describe the first part of the word. The fact that four students began their answers with *p-* may indicate that they perceived the bilabial *m* as a voiceless stop due to a reinforced articulation caused by the interruption in the form of the glottal closure following it. Answers such as 'ピッナシ' (*piʔnashi*) could be seen as providing evidence for this. As it is possible that the younger generation in the Miyakojima area is able perceive this *m* accurately but cannot think of a way to transcribe it other than to use 'ン' as in Standard Japanese, it is unclear how they actually perceived the sound. The results for the word for 'sea' (only a recording from Bora was used) were mostly the same in this regard.

In the above, we have reported on the results regarding words containing sounds that appear to correspond to **ri*, **ki*, or **hi*, as well as syllabic m. While we have also obtained data regarding the perception of the voiced consonant *g-* followed by a central vowel, as well as of sounds that appear to correspond to **i*, the answers were considerably more diverse than those reported here for **ki* and **hi*, apparently indicating that these sounds were more difficult for the high school students to perceive accurately. For example, the students used a variety of word-initial consonants, the overall shape of the words becoming quite far removed from the recordings, and they inserted 'イ' (*i*) before consonants even in cases where there was a distinct friction noise, as in the recordings from Kugai; there were therefore some striking tendencies that were not observed in the case of voiceless consonants.

The degree of comprehension was on the whole extremely low; the only words for which meanings were given were those for 'head' (two correct answers), 'sugar cane' (two correct answers), 'you' (four correct answers), 'person'

(including 'elderly person'; five correct answers), and 'everyone/all together' (four correct answers). There was only one case in which a student gave the correct meaning of a word for all the recordings from multiple sites: one student gave the correct meaning for the word for 'head' for each of the used recordings.

Table 46. 'Sugar cane': all seventeen students' transcriptions for all three sites.

Site	Kugai	Bora	Irabu
Form	buːgʷi	bʊːgʷɻ ~ bʊːʤɻ	buːʤɻ
1	ウーズ (*uuzu*)	プーグ (*puugu*)	ブーズ (*buuzu*)
2	ウージ (*uuji*)	ブーク (*buuku*)	ブーズ (*buuzu*)
3	ウォーイズン (*wooizun*)	ドゥーク (*ɗuuku*)	プーッグ (*puutsugu*)
4	ウージン (*uujin*)	ドゥーグ (*duuguu*)	ブーブゥ *(buubwu)*
5	ウーズ (*uuzu*)	ウークヌ (*uukunu*)	ヴーズゥ (*vuuzwu*)
6	ウィズン (*wizun*)	ドプーク (*dopuuk*u)	プーグズ (*puuguzu*)
7	ウーイズ (*uuizu*)	ドゥーグ (*duugu*)	ブゥーグ (*bwuugu*)
8	ヴーズ (*vuuzu*)	ドゥーグゥッ (*ɗuugwutsu*)	プゥーズ (*pwuuzu*)
9	ウーィズ (*uuizu*)	ドゥーク (*duuku*)	ブーグズ (*buuguzu*)
10	ボーイズ (bōizu)	ブウーク (*buuku*)	ブゥグズ (bwuguzu)
11	ウーイズ (*uuizu*)	ドゥーグ (*duugu*)	ブーク゜ (*buugu*)
12	ウゥズ (*wuzu*)	プーンクゥ (*puunkwu*)	プーングズゥ (*puunguzwu*)
13	ウーズ (*uuzu*)	ブーグズ (*buuguzu*)	ブーグズ (*buuguzu*)
14	ウーズ (*uuzu*)	ドゥーグ (*duugu*)	ブーズ (*buuzu*)
15	(no answer)	ドゥムク (*dumuku*)	ドゥーワ (*duuwa*)
16	ウグイズゥ (*uguizwu*)	ドゥーグ (*duuugu*)	ウーズ (*uuzu*)
17	ウゥーズ (*wūzu*)	ブーグ (*buugu*)	ブーグズ (*buuguzu*)

3.2.5 Speech perception results for the sentence items

In the discussion regarding Survey 1, we mentioned how the Miyakojima City high school students, at least, performed better than expected in transcribing the sentence items, which we had thought would be more difficult to perceive accurately; in Survey 2, too, the transcriptions of the sentence items matched the sound recordings more closely than expected. Setting aside whether the answers were correct, it especially catches the eye that meanings were given for the sentences more often than was the case with the word items. We thought that we might be able to examine the degree of comprehension regarding the predicates of the sentences if we managed to get the students to give meanings for more sentences to begin with, by intentionally choosing sentence items containing familiar words that might be easy to understand quickly even for the younger generation, such as words for 'high school student', '(school) uniform', 'principal', and 'tea'. Below, we give the answers for two of the items for which particularly many students gave meanings.

Although the students' transcriptions of the predicates are quite varied, one gets the sense from the above that the students were quite eager to comprehend the semantic content of the sentences, taking the associations 'uniform—put on' and 'tea—drink' as a starting point, even if their phonetic forms were difficult to perceive accurately. It can be assumed that the younger generation of the Miyakojima area, at least, also does this naturally in their interactions with the older generation, which still actively uses the dialects. If only the parts corresponding to 'to put on' and 'to drink' had been played back for the students, semantic comprehension would perhaps have been lower, as it was for the other word items. They grasped the gist of the sentences, not only in regard to the predicates, but also including particles and adverbs such as that for 'now'; the younger generation can be surmised to encounter these kinds of elements in their interactions with the older generation, as well.

Table 47. 'High school students wear uniforms'(Bora): all seventeen students' transcriptions.

Form	koːkoːɕeija ɕeiɸkuːdu kˢɻː	Meaning given	Transcription of 'kˢː'
1	コーコセイーヤ　セイフクヲド　プスー (*kookoseiiya seifuku(w)odo pusuu*)	'The high school students are wearing	プスー (*pusuu*)
2	コウコウセイヤ　セイフクヲトオ　ツー (*koukouseiya seifuku(w)otoo tsuu*)	'The high school students are wearing	ツー (*tsuu*)
3	コウコウセイヤ　セイフクトゥ　プスー (*koukouseiya seifukutu pusuu*)	(no answer)	プスー (*pusuu*)
4	コウコウセイヤ　セイフクオトゥ　クスゥー (*koukouseiya seifukuotu kuswuu*)	(no answer)	クスゥー (*kuswuu*)
5	コウコウセイヤ　セイフクヲドゥ　キヌゥ (*koukouseiya seifuku(w)odu kinwu*)	'The high school students are wearing uniforms.	キヌゥ (*kinwu*)
6	コーコーセイヤ　シェイフクゥナ　ツー (*kookooseiya sheifukwuna tsuu*)	'High school students, put on uniforms.'	ツー (*tsuu*)
7	コーコーセイ　ヤ　セーフクヲトゥー　ツヅ (*kookoosei ya seefuku(w)otuu tsu(d)zu*)	'High school students wear uniforms.'	ツヅ (*tsu(d)zu*)
8	コーコーセイヤー　セイフクヲトゥー　ツユー (*kookooseiyā seifuku(w)otuu tsuyuu*)	'High school students wear uniforms.'	ツユー (*tsuyuu*)
9	コーコーセーヤ　セイフクードゥプスー (*kookooseeya seifukuudupusuu*)	(no answer)	プスー (*pusuu*)
10	(no answer)	(no answer)	(no answer)
11	コウコウセイヤー セイフクヲドゥー、クスー (*koukouseiyā seifuku(w)oduu, kusuu*)	'High school students wear uniforms.'	クスー (*kusuu*)
12	ホゥホゥセィヤァー　シェイフクゥトゥ　クスゥー (*houhouseiyaā sheifukwutu kuswuu*)	'High school students wear uniforms.'	クスゥー (*kuswuu*)
13	コウコウセイヤ　セイフクヲドゥ　クsー (koukouseiya seifuku(w)odu kus*uu*)	(no answer)	クsー (kus*uu*)
14	コウコウセイヤ　セイフクヲトゥ　ピスゥー (*koukouseiya seifuku(w)otu piswuu*)	'High school students wear uniforms.'	ピスゥー (*piswuu*)
15	コウコウセイヤセイフクヲトクスー (*koukouseiyaseifuku(w)otokusuu*)	'High school students wear uniforms.'	クスー (*kusuu*)
16	コーコーセイヤー　セイフク　トゥオ　スー (*kookooseiyaa seifuku tuo suu*)	(no answer)	スー (*suu*)
17	コーコーセイヤセイフクトゥプスウ (*kookooseiyaseifukutupusuu*)	(no answer)	プスウ (*pusuu*)

4 Conclusion

Among the dialects of the Ryukyu Islands, those of the Miyakojima area are considered to have been relatively well preserved. The perception of them as unusual among the dialects of Okinawa Prefecture is also well established. It has also become clear in our surveys that the younger generation of Miyakojima themselves, too, have an awareness of the unusual character of their local dialects. Nevertheless, the results of these surveys do seem to indicate that there are many issues to be overcome in passing on their phonological systems. The fact that high school students can get a sense of what a sentence means on the basis of, for example, some of the elements within it and the context, even if their ability to perceive the individual sounds accurately is lacking, would seem to be due their daily experiences in interacting with, for example, their grandparents.

In this way, close interaction between the younger and older generations would seem to be an important factor to consider in regard to the passing on of these dialects. In the 2011 high school survey, we asked the students whether they lived together with their grandparents; the results are given in Table 49 on the next page. Although there is a large regional difference between Miyakojima and Irabujima, an average of more than thirty percent live with their

Table 48. 'I just drank tea' ('tea-TOPIC just.now to.drink-PAST'; Uruka, Bora): all seventeen students' transcriptions

Form	ʧaːja nnamadu numtaᶻɨ	Meaning given	Transcription of 'numtaᶻɨ'
1	チャーヤ　ンナマズヌンタン (*chaaya nnamazununtan*)	(no answer)	ヌンタン (*nuntan*)
2	チャーヤ、ンナマド　ノンター (*chaaya, nnamado nontaa*)	'That person was drinking until now.'	ノンター (*nontaa*)
3	チャーヤ　ナマズヌンタル (*chaaya namazununtaru*)	(no answer)	ヌンタル (*nuntaru*)
4	チャーヤンナマドゥ　ヌンタ (*chaayannamadu nunta*)	(no answer)	ヌンタ (*nunta*)
5	チャーヤ　イツフトゥ　アスピタァ *(*chaaya itsufutu asupitaa*)	(no answer)	アスピタァ *(*asupitaa*)
6	キャーヤ　ナマデ　ヌンタル (*kyaaya namade nuntaru*)	'The tea is lukewarm!'	ヌンタル (*nuntaru*)
7	チャーヤ　ンナマドゥ　ヌンタウ (*chaaya nnamadu nuntau*)	(no answer)	ヌンタウ (*nuntau*)
8	チャー　ヤンナンマドゥ　ヌンタウ (*chaa yannanmadu nuntau*)	'I was drinking tea until now.'	ヌンタウ (*nuntau*)
9	チャーヤ　ンナマドゥ　ヌントゥン (*chaaya nnamadu nuntun*)	(no answer)	ヌントゥン (*nuntun*)
10	(no answer)	'You were drinking liquor until now, or something?'	(no answer)
11	チャーヤ、ンナマドゥ ヌンタゥ (*chaaya, nnamadu nuntau*)	'Now…'(now)	ヌンタゥ (*nuntau*)
12	チャーァアヤ　ナマド　ヌゥンタゥン (*chaaaaya namado nwuntaun*)	(no answer)	ヌゥンタゥン (*nwuntaun*)
13	チャーヤ　ンナマドゥ　ヌンタヴ (*chaaya nnamadu nuntau*)	'I was drinking tea until now.'	ヌンタヴ (*nuntau*)
14	チャーヤ　ンナマドゥー　ヌーター (*chaaya nnamaduu nuutaa*)	'I was drinking tea until now.'	ヌーター (*nuutaa*)
15	チャーヤンナマドゥヌンタ (*chaayannamadununta*)	'I was drinking tea until now.'	ヌンタ (nunta)
16	チャーヤ　ナマズ　ヌンタン (*chaaya namazu nuntan*)	(no answer)	ヌンタン (*nuntan*)
17	チャーヤナマドゥヌンタウ (*chaayanamadununtau*)	(no answer)	ヌンタウ (*nuntau*)

(the answer marked with '*' appears to have been mixed up with that for another item)

grandparents, which means that there are still plenty of opportunities for contact. According to the high school students, the dialects are still used widely by the generation of their grandparents, but the use of Standard Japanese or what could be called 'intermediate dialects' is more widespread in the generation of their parents. They say that while their parents understand the dialects spoken by their grandparents and are able to use them as well, they hardly use the dialects when speaking to their children. On the Miyako islands, too, core families are becoming increasingly prevalent; especially in urbanized areas such as Hirara, collective housing in the form of apartment buildings and the like has been increasing, as well, causing family configurations to change swiftly. We may still be hopeful in regard to the passing on of the dialects if an interest in their phonological systems can be cultivated while the younger generation is still able to grasp the gist of

Table 49. Whether the students lived together with their grandparents

High school	Do not live together	Live close by	Live together	Used to live together	No answer etc.
A (Miyako)	71.43%	1.79%	16.07%	3.57%	7.14%
B (Irabu)	46.67%	3.33%	46.67%	3.33%	0.00%
Mean	59.05%	2.56%	31.37%	3.45%	4.65%

(the survey was conducted in November 2011 with 130 participants; no distinction was made between paternal and maternal grandparents).

what is said using them. It is also for this reason that an orthography that is suitable for general use is needed.

In these surveys, we have attempted to utilize the raw sound recordings of the older generation obtained in the joint survey. As a result, the recordings were not of the best possible quality; on the other hand, one could say that they approached the daily environment of the younger generation closely. Against this background, the fact that they could make distinctions between regional variants based on the recordings and tried to come up with their own transcriptions leads us to conclude that their interest in the dialects has itself not waned, and that given the right policies, the passing on of these dialects may still be possible.

Bibliography

Aoi, Hayato. 2012. 'Minami-Ryūkyū Miyako Hōgen no On'in Kōzō'. In: Makoto Minegishi, Osamu Hieda, Emiko Hayatsu, Yuji Kawaguchi (eds.), *Kōpasu ni Motozuku Gengogaku Kyōiku Kenkyū Hōkoku*, 8:99–113.

Ogawa, Shinji. 2011. 'Kore kara no Ryūkyūgo ni Hitsuyō na Hyōkihō wa Dono Yō na Mono ka?' Nihongo no *Kenkyū (Studies in the Japanese Language)*, 7(4):99–111.

Additional samples: distribution maps of some charactaristic sounds

(roughly divided into groups represented schematically by uppercase letters)

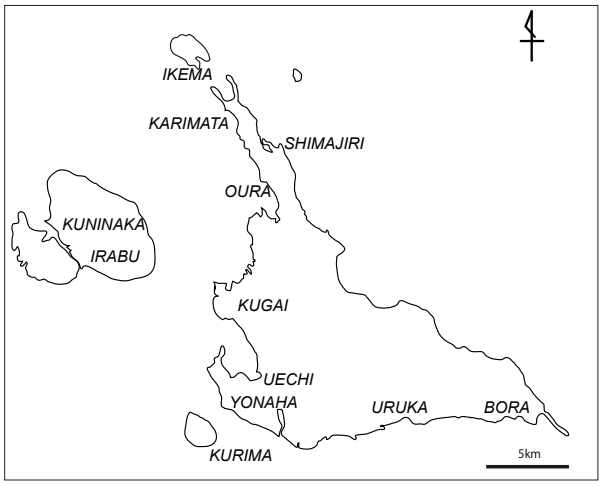

Figure 1. Vocabulary module reseach sites

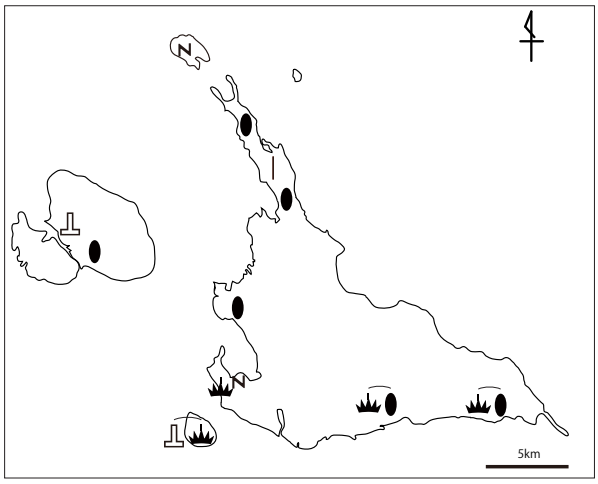

Figure 2. 'Head'

Ikema	Uechi	Kuninaka
Karimata	Yonaha	Irabu
Shimajiri	Kurima	
Oura	Uruka	
Kugai	Bora	

	Friction noise	KANAMAZ
	No friction noise	KANAMAI
	Syllabic consonant	KANAMAL
	Different word form	
N	No data	

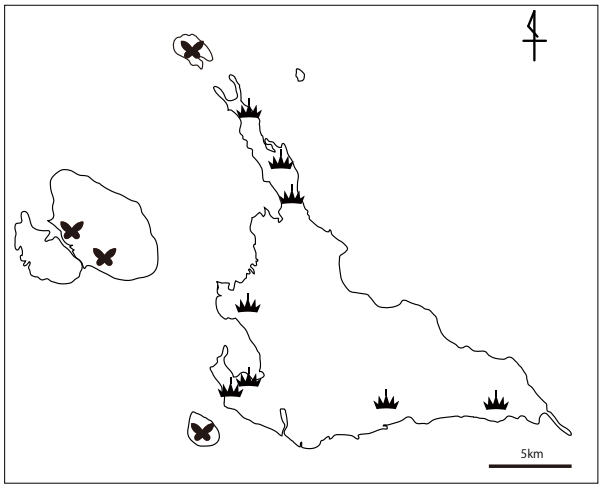

Figure 3. 'Liver (heart)'

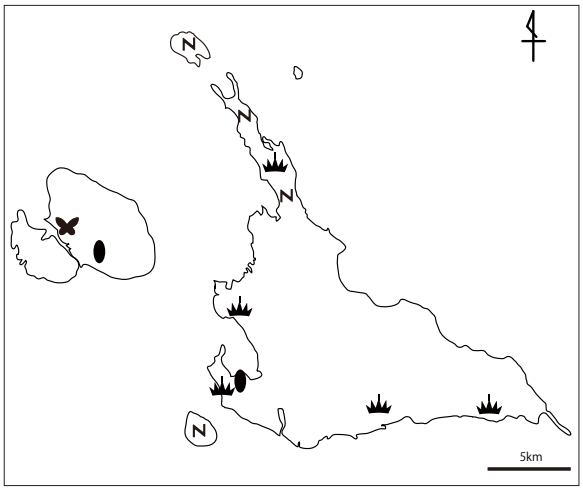

Figure 4. 'Fog'

	Friction noise	KSIMU
	Affricate	CIMU

	Friction noise	KSI:
	No friction noise	KIRI
	Syllabic consonant	CI:
N	No data	

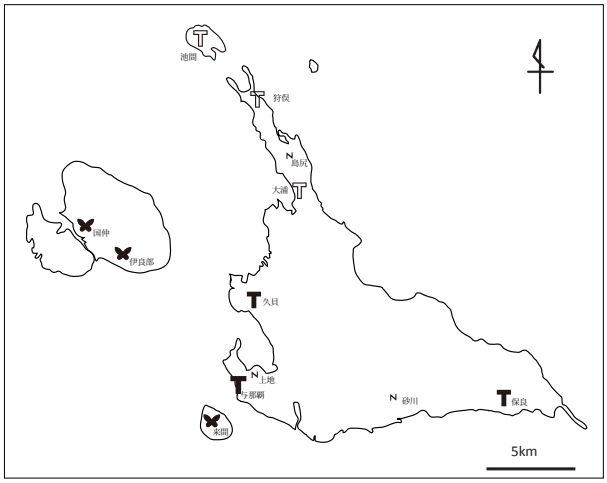

Figure 5. ‘Breath’.

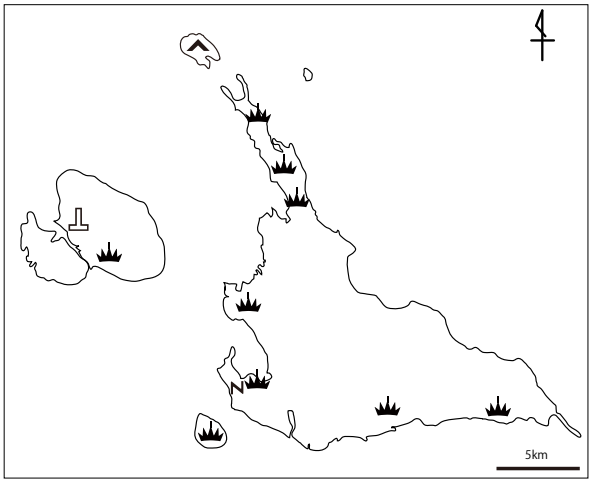

Figure 6. 'Daytime'

T	Frikcion noise	IKSI
T	No friction noise	IKI
	Affricate	ICI
N	No data	

	Frikcion noise	PSIMA
	No friction noise	PI:MA
	Syllabic consonants	PILMA
	HI:MA	
N	No data	

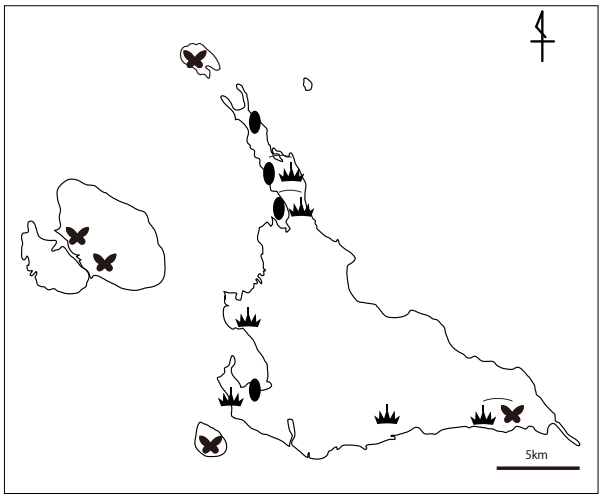

Figure 7. ‘Sugar cane’..

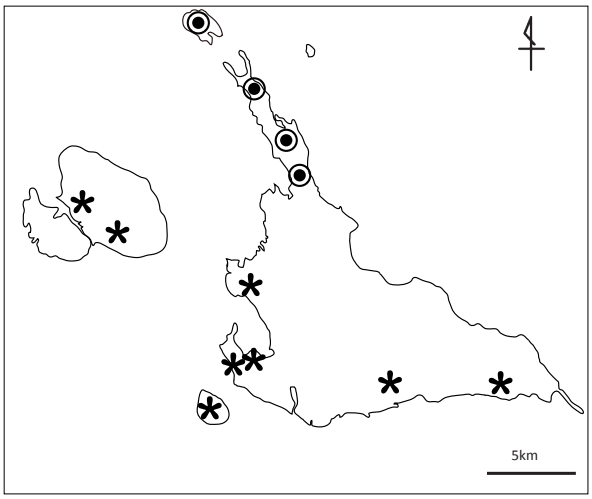

Figure 8. ‘Sea'

	Frikcion noise	BU:GZI
	No friction noise	BU:GI
	Affricate	BU:DZI

*	IM
◉	IN