Retention of Obsolescent Features in Replacing Languages:
Okinawans' Struggle to Retain their Voice

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1. Introduction

This study demonstrates that the prosody of an obsolescent language, Okinawan, has affected the prosody of the replacing language, Standard Japanese (SJ), resulting in the creation of a new dialect of Japanese. The Okinawan language is currently in a state of obsolescence with the youngest speakers who still use Okinawan as their first language in their 50s. As such, the prefecture of Okinawa, Japan, is an ideal testing ground for the influence of a waning language's prosody on the replacing language.

A previous study on the acquisition of SJ in a community in Northern Japan (Inoue, 1997; Yoneda, 1993) showed that phonology is acquired piecemeal, with SJ segmental phonology being acquired one or two generations before the SJ pitch-accent system. Due to this lag, I hypothesized that as the Okinawan community shifted from Okinawan to SJ, there would be a period in which speakers acquired the SJ phonology and lexicon, but still retained the noun classes and/or pitch patterns of the Okinawan pitch-accent system. In order to test this hypothesis, I carried out a 10 minute interview with 90 residents of the Yaeyama area of Okinawa. Each interviewee was required to read a short reading passage and a list of words in SJ, and was then evaluated for the accuracy of their reproduction of the SJ pitch-accent system. These mini interviews were supplemented with lengthy discussions with six locals and three non-locals about the general attitudes towards the Okinawan language and culture.

2. Pitch-Accent in Japanese and Okinawan

2.1 *Japanese Pitch-Accent System*

In SJ, the location of the accent is lexically determined. The surface pitch pattern is then determined by the following two ordered rules (Tsujimura, 1996, p. 74-75; McCawley, 1970):

(1) a. All of the morae up to and including the mora that is associated with the accent receive a high tone. All of the morae after the accented mora receive a low tone.

b. The pitch of the first mora of the word is always low, unless it is accented, in which case it is high.

Two-mora words have three possible underlying accent patterns: the accent is on the first mora (2a), the accent is on the second mora (2b), or the word is accentless (2c). Note that the distinction between two-mora accentless words (2c) and two-mora words with the accent associated to the second syllable (2b) only surfaces when the words are followed by an accentless particle (2e, f).

(2)
	word	pitch		word		pitch
a.	àme 'rain'	HL	d.	àme-ga	'rain nom'	HLL
b.	hanà 'flower'	LH	e.	hanà-ga	'flower nom'	LHL
c.	hana 'nose'	LH	f.	hana-ga	'nose nom'	LHH

2.2. Noun Classes

Based on the modern-day pitch accent patterns, Japanese scholars have used the techniques of comparative linguistics to reconstruct five noun classes in Middle Japanese (c.a. 700-1000). These five classes have over time merged in various ways so that currently every modern-day dialect of Japanese and Okinawan has either two or three classes. The dialects relevant to the discussion are given in (3).

(3) Pitch-accent patterns in Japanese and Okinawan dialects (Nakamatsu, 2000, p. 59)

region		1 hana 'nose'	2 hata 'flag'	3 hana 'flower'	4 fune 'boat'	5 koe 'voice'
Yaeyama	Kuroshima		● / ●		● / ● ◇	
Yaeyama	Ishigaki		● / ● ◇			◇
Yonaguni	Sonai		● / ●	◇		◉ / ● ◇
Honshû	Tôkyô	● ● / ●		● / ● ◇	● / ● ◇	
Honshû	Kyôto	● ● / ● ●		● / ● ◇		◉ / ● ◇
reconstructed accent for Kyôto, Heian period		● ● / ● ●	● / ● ◇		● / ●	◉ / ● ◇

● ◇◉ represent one mora each. ● indicate high pitch. ◇ indicate low pitch. ◉ marks a sharp fall in pitch. Lastly, ◇ represent accentless, single mora particles.

It was hypothesized that the way the pitch-accent system of SJ was acquired would be influenced by the way the pitch-accent system was implemented in the local dialect of Okinawan. This influence may consist of two parts:

(4) a.   the noun class divisions made in the local dialect of Okinawan
    b.   the way pitch was actually implemented (for example, the number of morae required to implement a falling pitch)

As we shall see the influence is not so straight-forward as originally hypothesized.

3. The Mini Interview

3.1. *Interview Population and Procedure*

Interviewees were recruited by spontaneously approaching people on the street or at their workplace, and by introduction by a member of a local political / administrative unit such as the city hall. Because they were more accessible, I focused on the working population, which resulted in more men than women being interviewed. High school students were also added to the interviewee population via arrangements with the teaching staff. Altogether, ninety Okinawans were interviewed, to which four speakers born and raised in the Tokyo area were added (hereafter referred to as Tokyoites, in contrast to Okinawans who speak SJ, who will be referred to as SJ speakers). A majority of the Okinawan interviewees are from the Yaeyama area of Okinawa prefecture. The localities of Ishigaki City (Ishigaki Island), Kuroshima Island and Yonaguni Island were specifically targeted. Interviewees from other localities were also retained as long as they grew up within Okinawa prefecture. The population is well balanced across all age groups and localities with the exception of Kuroshima Island because that island almost completely lacks a native population of the ages between 14 and 40 years.

The interview consisted of two sections: a background information section and a list of words and sentences to be read out loud for recording. The recording section consisted of ten two-mora words (two from each noun class) and eleven sentences. Worked into the Reading Sentences were ten more two-mora words, two from each noun class. Table (5) lists the two-mora word tokens by noun class used in the interview, along with their pitch-accent patterns in SJ (the target patterns).

(5) List of two-mora word tokens by noun class and speech style

a. Word List

class	vocabulary	target
1	mizu 'water' tori 'bird'	LH
2	oto 'sound' kawa 'river'	LH
3	yama 'mountain' hana 'flower'	LH
4	fune 'boat' sora 'sky'	HL
5	aki 'autumn' ame 'rain'	HL

b. Reading Sentences

class	vocabulary	target
1	kaze-o 'wind-acc' buta-no 'pig-gen'	LH-H
2	iro-mo 'colour also' ashi-o 'leg-acc'	LH-L
3	inu-to 'dog and' mimi-to 'ear and'	LH-L
4	kyô-wa 'today top' imu-ni 'sea-loc'	HL-L
5	koe-ga 'voice-nom' hane-wa 'wing-top'	HL-L

The interviewees were specifically asked to read in Standard Japanese. This was done in order elicit as conservative a speech style as possible. We are interested in whether or not interviewees are able to reproduce the pitch-accent system of SJ regardless of what they use in natural conversation.

The actual recording was done with a unidirectional microphone and an Olympus DS-10 digital voice recorder with an overall frequency response of 300 ~ 7,000 Hz and a sampling frequency of 15,000 Hz. The voice files were then transferred to a computer and analyzed with PRAAT. The pitch-accent pattern for the phonological word was assigned to one of nine categories by comparing the relative pitch frequency for the vowel peak that

corresponded to each of the morae. The nine categories are: falling, level falling, level, rising, level rising, concave, level concave, convex, and level convex. Pitch-accent contours were only classified as falling or rising if the change in pitch was clearly audible. If presence of a change in pitch was unclear from listening to the token, but was still clear from observation in PRAAT, then the contour was classified as either level rising or level falling pitch.

3.2. *Results*

In order to evaluate the performance of the interviewees, two indices were created, one for the two-mora Word List tokens and one for the two-mora Reading Sentence tokens. The Word List targets were either rising pitch-accent or fall pitch-accent. No speaker produced a convex contour for a Word List token. The Reading Sentence targets also included the concave contour, and the actual tokens produced included the full range of pitch-accent categories.

First the index for the Word List tokens will be described. For each token, a target pitch-accent pattern was established based on the descriptions of the SJ pitch-accent system. The target pattern was assigned an index score of 0 so that a speaker who consistently produced SJ would lie on the abscissa. The other pitch-accent categories were assigned index scores based on how much they deviated from the target pattern. The indices for the rising and falling pitch-accent patterns are:

(6) Index scores for rising and falling target patterns for Word List tokens

target: rising

token contour	score
rising	0
level rising	1
level	2
level falling	3
falling	4
concave	5

target: falling

token contour	score
falling	0
level falling	1
level	2
level rising	3
raising	4
concave	5

Note that in both cases the concave contour was given the worse score. Since in SJ a concave contour is never heard from a two-mora word spoken in isolation, it is felt to be the most marked.

The index scores for the tokens from the Reading Sentences were calculated slightly differently. In this case, the phonological word also included the following accentless particle, resulting in three target contours: rising, falling, and concave. To keep the calculation for the index score as similar as possible to the scores listed in (6), the pitch-accent contour of the token was first divided into the first half and the second half, and the scores listed in (6) were then applied to each half separately. The two scores were then averaged. For example:

target:	concave (i.e. rising + falling)
token:	level rising
first half:	target rising, token is level rising, therefore score 1
second half:	target falling, token is level rising, therefore score 3
total score:	(1+3) / 2 = 2

This method is not exactly the same as the standard socio-linguistic index in that several different variants result in the same score. This is because the tied variants differ from the target in the same degree. For example if the target is a rising pitch-accent, then in both the cases of the convex and concave contours, the produced token is half correct in that both a convex and a concave contour contain a raising section. Either way, while the SJ speaker would obviously feel that the token differs from SJ, it does not differ to the degree that the complete opposite pattern, a falling pitch-accent does.

3.3. *The Tokyoites*

The four Tokyoites produced ten two-mora tokens each for a total of 40 tokens. Of these, the pitch-accent for 39 tokens was the same as the target. The pitch-accent for the token that differed was classified as "level".

3.4. *The Okinawans*

Figure (7) shows the index scores for each age group for both of the speech styles. The initial rise in the 60-69 age group is most likely a product of the insufficient number of interviewees in that age group (only four). As the age of the interviewees decreases, their average scores approach abscissa until the 30 to 39 age group. This is to be expected as the community is gradually acquiring SJ. However, after this age group there is no longer significant progress. Why this should be is addressed in the following section.

(7) Average Word List and Reading Sentence scores by age group
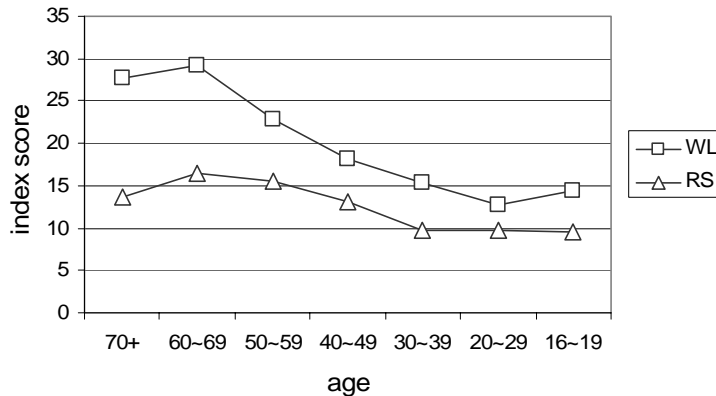
4. **Speaker Types**

Among the population of 90 speakers, there are several speakers that can be grouped together into two groups based on their similar approach to the production of pitch-accent. The two groups are the SJ Speakers and the Levellers. Although not every speaker fits into one of these groups, I feel enough do to warrant discussion.

4.1. *The SJ Speakers*

This is the least interesting group, in that we expect to find a number of speakers within the community who have at least come close to acquiring the pitch-accent system

of SJ. A SJ Speaker is defined as a speaker whose Word List index score is less than 5 and whose Reading Sentence score is less than 8. (The higher Reading Sentence score is to allow for phonological phrase effects.) The SJ Speakers are summarized as follows:

Number:	9
Average WL Score:	2.3
Average RS Score:	5.7
Average Age Group: [1]	2.1
Grew up:	Naha (N=2), Ishigaki (N=7)

In general, the SJ Speakers are young (almost half are high school students), and extremely few in number, at only 10% of the interviewee population. All of them grew up in either Naha or Ishigaki. Both of these locations are urban centres that are much larger than any of the nearby cities or towns, so the exposure to SJ would be greater.

4.2. *The Levellers*

The Levellers are those speakers that use the exact same pitch-accent for at least nine of the ten two-mora WL tokens. Not only have these speakers not acquired the SJ pitch-accent system, they have innovated a new system. There are three sub-types: those that use rising tone, those that use falling tone, and those that use a concave contour.

Rising Tone Levellers

Number:	3
Average WL Score:	15.7
Average RS Score:	11.7
Average Age Group:	3.0
Grew up:	Yonaguni, Kuroshima, Okinawa Is.

Falling Tone Levellers

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Number:	31
Average WL Score:	23.6
Average RS Score:	13.9
Average Age Group:	3.8
Grew up:	Yonaguni (N=6), Kuroshima (N=3), Ishigaki (N=8), Naha (N=2), Other (N=4)

Concave Tone Levellers

Number:	2
Average WL Score:	50.0
Average RS Score:	14.0
Average Age Group:	6.0
Grew up:	Yonaguni

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[1] The average age group was calculated by assigning the lowest age group a value of one, the second lowest a value of two, etc., and then taking the average of these values for all the members of the group.

An important point to note is the large number of Falling Tone Levellers; they outnumber the SJ Speakers by about 4 to 1 (even without including those speakers who are in actuality Levellers, but used two or more different contours during the interview in an attempt to imitate the SJ system). Figure (8) shows the percentage of the population for the SJ Speaker and Falling Tone Leveller groups by age. The initial increase in the percentage of Falling Tone Levellers is most likely due to an initial adoption of that falling tone levelled system by the community as they struggled to acquire SJ. The higher average age group and the remoteness of the localities where the Rising and Concave Levellers grew up suggest that the falling level system spread out from Ishigaki City, the local urban centre. This premise is further supported by the fact that of the Okinawan dialects spoken in the Yaeyama area, only the Ishigaki dialect has the falling tone contour. Most likely the community favoured the falling tone because it is the only overlap in the pitch-accent systems of SJ and the Ishigaki dialect. The sudden and dramatic second increase among the youngest Falling Tone Levellers speakers, on the other hand, is surprising. I assume that this is a reflection of changes in attitudes, which are discussed in the next section.

(8) Percentage of total interviewee population that are SJ Speakers and Falling Tone Levellers for two-mora words by age
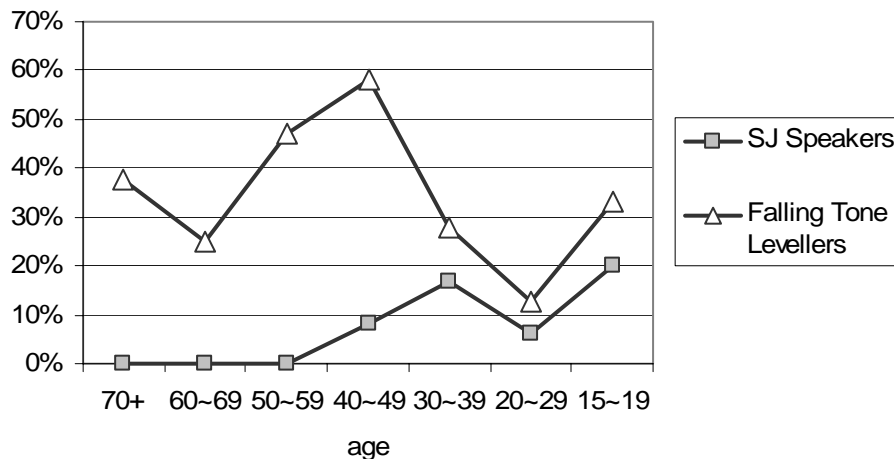
5. Changing Attitudes towards the Okinawan dialect

5.1. *Changing Attitudes among the Okinawans*

The obsolescence of Okinawan is a direct consequence of the Japanese government's policy of "Dialect Eradication" (Sibata, 1999, p. 191). This policy was a part of the efforts to create a "National Language", which in turn was a part of the government's initiatives towards converting Japan from a feudal state to a unified, modern nation after the Meiji Restoration in 1868. It was felt that language created artificial boundaries between the geographic areas of the old feudal states and between the different social classes that were the modern-day product of the class system of feudal Japan (ibid., p. 188).

The number one tool for the implementation of the standardization of language was education. Sibata describes the effect this education policy had (p. 191):

> For Standard Language education, dialect was a bad thing, so dialect came to be labelled as "bad language", and along with other bad language like baka 'fool', yatsu 'guy', and kuso 'shit', something that had to be corrected… This kind of education, as mentioned before, did not achieve very good results. It did not create children who could speak Standard Language well. What it did create in them was a latent sense of defeat towards their own language. The words that they had used from birth, the language that they had learned from their mothers and grown up thinking in, the words which they used in everyday life, these they were prohibited from using at school. These words were banned as being "bad things".

The educators equated dialect with slang and obscene language. This equation naturally left speakers of Okinawan with what Sibata calls, a dialect inferiority complex, a feeling that their language was inferior. Nowadays, the attitudes towards the Okinawan language have completely reversed. Everyone agrees that it is indeed tragic that it will not be long before the language is completely wiped out.

Attitudes towards the local dialect of Japanese, on the other hand, are mixed. I found that people over about the age of 30 still feel a sense of embarrassment if it is suggested to them that the Japanese they speak is not standard, and a significant number of interviewees pointed out to me that they spoke SJ, even though I did not ask them (furthermore, it turns out that most of them have not acquired the SJ pitch-accent system). While discussing these issues with me, a middle-age male said, "The Miyako accent is extremely strong. I can remember watching a comedian on TV once who made fun of the accent as part of his routine."[2]

In general, it is only pitch-accent that marks someone as a non-Standard speaker. (A number of speakers even went so far as to confirm that it was an accent survey that I was carrying out, even though at no point did I ever suggest this.) There are some other features carried over from the phonology of Okinawan into Japanese, but firstly, they are few in number, and secondly, it is only the speech of the eldest members of the community that retain such features. Pitch-accent, on the other hand, as we have seen, is a completely different story.

The youngest interviewees are much less concerned with speaking SJ. The two high school students with which this was discussed felt that if someone from Tokyo pointed out to them or one of their friends that they spoke Japanese with an accent, they would not mind. This positive attitude is also reflected in the language-usage reports of the youngest speakers. A number of the youngest speakers, particularly male speakers, reported using the Okinawan language "often" when speaking with friends. However, when asked to translate a simple sentence such as "Today, the weather is hot" into Okinawan, there was not a single speaker who was able to do so. What is used is a number of lexical items borrowed from Okinawan, such as *biicha* 'drunk person', and *naicha* 'Japanese person from the mainland'. Furthermore, when asked for examples of Okinawan words that they use with their friends, some examples given were either dialectal versions of SJ (e.g.

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[2] All quotes from interviewees are my own translations from Japanese.

dakara yo with falling intonation) or were SJ slang (e.g. *noppaa*, from SJ *noupaa* 'airhead'). What the youngest speakers were reporting was not *language* usage, but *slang* usage, and the positive attitude is both towards the local vernacular and slang in general.

Another example of this reversal in attitudes is the popularity of souvenir T-shirts with Okinawan words such as *shimanchu* 'islander' and *uminchu* 'fisherman' written on them in large, stylistic characters. One elderly man comments, "I can't believe that those shirts are so popular among the young Okinawans. In the past, those words were derogatory terms. No one was proud of being '*uminchu*'." The younger population clearly no longer associates any feelings of shame with either the Okinawan language or the community vernacular.

5.2. *Changing Attitudes among the Mainland Japanese*

Interest in Okinawan culture among the general Japanese population increased dramatically in the late 1980s and early 1990s. In celebration of the twentieth anniversary of the return of Okinawa to Japan, the Shuri castle in Naha was restored and opened to the public in 1992. In 1993 the NHK Broadcasting Company broadcasted the historical TV drama *Ryuukyuu no Kaze* which was based on 16th century Okinawan culture. The series ran for six months and was extremely popular. One of my interviewees reported that watching that series made her want to travel to Okinawa, a place she had previously never considered visiting.

At the same time, the younger general population was also beginning to take serious notice of Okinawan pop music. In 1992, a rock band called The Boom released the song *Shimauta* [A Song from Okinawa]. This song was a big hit, and helped spark the "Okinawan Boom". One of the interviewees whose primary interest in Okinawa is music said the following:

> "Okinawan Boom" means the dramatic increase in popularity of Okinawan culture, especially music since the late 1980s. Since the beginning of the boom, a lot of people have started to learn the *sanshin* [a traditional Okinawan three string instrument]. There have also been a lot of pop stars coming out of Okinawa, such as Amuro Namie. The funny thing is that she doesn't even sing Okinawan music. But people think that being from Okinawa is cool, so that is enough.

Besides history and music, one other point came out in the interviews with the non-Okinawans: Japanese people love Okinawa because of the laid-back life style of the locals. This life style is in sharp contrast to the hectic and overworked life style of the mainland Japanese. One of the interviewees moved to Okinawa from Tokyo ten years ago. He says:

> Before Okinawan culture became popular, people didn't realize that life in Okinawa was so carefree. After the collapse of the 1980s bubble economy, many Japanese began to take a long, hard look at their life style, and realized that there was more to life than sacrificing oneself for the company. So they moved to Okinawa to live a more peaceful life. Here things are cheap, so you don't need so much money to get by. And unlike Tokyo, no one seems to care if you don't own the newest car or the most expensive TV on the block.

These comments show that there has been a positive change in the attitudes among the Okinawans towards their local dialect, and that the timing of change roughly corresponds with a dramatic increase in interest in Okinawan culture among the mainland Japanese.

6. Conclusions

The results of the mini interviews corroborate previous research demonstrating the delayed acquisition of prosodic phonology. A number of speakers (N=10) used a rise-fall pitch-accent pattern that is found only in Okinawan. Of this number, two speakers used only this pattern (the two Contour Levellers). None of the speakers used the Okinawan noun class divisions. Unsurprisingly, the number of speakers demonstrating the acquisition of the SJ pitch-accent system increases among the younger speaker cohorts, while the number of speakers using the rise-fall pattern drops to zero. Surprisingly, for the community as a whole, the most common prosodic system was a simplified system that eliminated phonological contrast by using a falling pitch (common to both SJ and Ishigaki Okinawan) for every noun class. Even more surprising, although the number of speakers using the simplified system initially showed a decreasing trend, there is a sudden increase in popularity among the youngest speakers, with the simplified system winning out over the SJ system. The lengthy discussions show that this increase coincides with changing attitudes towards the Okinawan local dialect and popular culture among the Okinawans and the mainland Japanese, suggesting that the new dialect is here to stay. These results open new ground on studies of obsolescent languages, as previous research (Wolfram, 2002) has overlooked cases where the obsolescent language has a persistent and ,apparently, permanent influence on the replacement language.

References

Inoue, F. (1997). S-shaped curves of language standardization. In Thomas, Alan (ed.), *Issues and Methods in Dialectology* (pp. 79-93). Bangor: University of Wales.

McCawley, J. (1970). *The Phonological Component of a Grammar of Japanese*. Hague: Mouton.

Nakamatsu, T. (2000). *Okinawago gaisetsu* [A survey of the Okinawan language]. Naha, Okinawa: Okinawago Bunka Kenkyûjo.

Sibata, T. (1999). *Sociolinguistics in Japanese Contexts.* Edited by Tetsuya Kunihiro, Fumio Inoue, and Daniel Long. Berlin: Mouton de Gruyter.

Tsujimura, N. (1996). *An Introduction to Japanese Linguistics*. Oxford: Blackwell.

Wolfram, W. (2002). Language Death and Dying. In Chambers, J. K., Trudgill, Peter, and Schilling-Estes, Natalie (ed.), *The Handbook of Language Change and Variation*, (pp. 764-787). Oxford: Blackwell.

Yoneda, M. (1993). Survey of standardization in Tsuruoka City, Japan: Comparison of the results from the surveys conducted at twenty-year intervals, paper presented at Methods VIII: International Conference in Dialectology. University of Victoria, British Columbia.

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