A SOCIOLINGUISTIC STUDY OF THE USE OF THE RETROFLEX SOUNDS IN MANDARIN IN COLLEGE STUDENTS IN TAIWAN

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The Chinese language is usually construed as a single language of the Han Chinese used on the Chinese mainland and Taiwan. It is easier to understand if we define the Chinese language as a language family consisting of several phonologically different languages including Mandarin and Min. In this sense, I would rather follow the tradition adopted by Yip (Yip, 1980) and call it "Chinese languages" as each language has a different phonemic system from each other.

Three Chinese languages are simultaneously used as tools of communication on different levels of speech in Taiwan. They are Mandarin, Taiwanese, and Hakka. However, the importance of Mandarin and Taiwanese by far surpasses Hakka which has about ten percent of the population in Taiwan (Cheng, 1977) claiming Hakka as their native language. 75 percent of the population speak Taiwanese natively while the other 15 percent are native speakers of Mandarin. Despite the fact that the majority of the population in Taiwan speak Taiwanese which is a branch of the Min language called South Min as their native language, Mandarin has been used as the official language and the language of instruction on Taiwan. As Mandarin and Taiwanese have different phonemic systems, there may exist interference in these two languages' speakers when they come in contact.

The most conspicuous difference between Mandarin and Chinese lies in their tonal systems. Mandarin has four tones while Taiwanese has seven (Chao, 1968; Cheng, 1982). Nevertheless, tone does not constitute a major problem for Taiwanese speakers when they speak Mandarin. Rather, it is the four retroflex sounds in Mandarin that strike us most as a source of all trouble for non-native Mandarin speakers. On the other hand, the widespread use of Taiwanese among children in Taiwan and its prevalent use by people at different levels of society have also left its imprint on native speakers of Mandarin. It should also be made clear here that some native Mandarin speakers do not necessarily speak standard Mandarin as they did not learn that language correctly due to interference from other Chinese languages. Under such circumstances, sociolinguistic factors must have played a very important role in a child's language acquisition or a person's language learning.

In order to better understand the use of language in society in Taiwan, it is mandatory that we know the propagation of Mandarin as the standard language or the official language in modern China and its subsequent development in Taiwan.

When the Republic of China was established in 1911, different languages or dialects were spoken in China. No sooner had the Chinese Republic been inaugurated than the standardization of northern Mandarin as the official language began. Chinese spoken in Peking (now spelled Beijing in Communist China) has been designated as the official language, which is mainly based on northern Mandarin in Peking, but somewhat modified by national language planning committees (National Language Propagation Committee, 1980). Taiwan was returned to the Chinese Government in 1945 after the Second World War. Mandarin replaced Japanese as the official language while the local

people were still speaking Taiwanese in their everyday lives. In the meantime, school children tried to learn Mandarin at school and the general public and public functionaries picked up Mandarin from their neighbors, friends, and colleagues from the mainland who moved to Taiwan either before or in 1949 in which year the Chinese Communists took over the Chinese mainland. These immigrants to Taiwan spoke a large variety of Mandarin different from standard Mandarin and this has resulted in substandard Mandarin as can be easily found in Mandarin speakers in Taiwan today.

Although the speaking of Mandarin has been vehemently promoted in Taiwan for the last 37 years, Mandarin spoken in Taiwan today is far from being perfect. Even in college students today, retroflex sounds in Mandarin may be totally replaced by their stigmatized forms. For instance, while this project of sociolinguistic study was going on, I unintentionally heard a half hour's conversation between two college girls in a city bus in Taipei while I was sitting in front of them. I had never heard any retroflex sound in their conversations. What explanation can we find for such a strange phenomenon? For the older people in their fifties, it may be due to the fact that they learned the language after their puberty and so could not effortlessly pick it up, native-like (Lenneberg, 1967). If we look for the answer to the question in the direction of sociolinguistics rather than in psycholinguistics we may be on the right track and draw a better conclusion from our search.

Problems and Elicitation of the Data

The four retroflex sounds in Mandarin are *ch, ch', sh,* and *j* which are respectively unaspirated palatovelar stop, aspirated palatovelar stop, palatovelar fricative and palatovelar liquid. Two alveolar stops, *ts, ts'* and one alveolar fricative *s* are three phonemes in Mandarin which are incorrectly used by many speakers as substitutes for the first three retroflex sounds, to replace *j,* a voiced alveolar fricative which does not occur in Mandarin at all is used instead. In this substandard speech, the latter four sounds become the socially stigmatized variants of the socially prestigious retroflex sounds. As the subjects in this study are college students in Taiwan today, I would not define socially prestigious variants as those features adopted by a high-status group and soially stigmatized variants as those features associated with low-status groups as Wolfram and Fasold did (Wolfram and Fasold, 1979). I would just regard the retroflex sounds as standard sounds while their variants as substandard so that I could do justice to these subjects in may classes of phonetics and linguistics.

In this study, two major questions will be answered from analyses of the data: What associates with standard sounds and what with substandard sounds? As these subjects are almost at the same age, the focus will be on the social class of their parents and its influence on the correctness of pronunciation in these subjects and sex difference. In terms of social stratifications as defined by Labov (Labov, 1972), this study is aimed at finding out the product of social differentiation and social evaluation through socioeconomic factors.

It stands to reason that the data for such a study should be based on formal and informal speech of subjects. But it might be too artificial for a teacher to interview these students in order to elicit formal speech. Formality in speech can be achieved through the selection of materials. For this reason, a passage from the newspaper was

selected with some words added for students to read. In order to make it more formal, instructions were given that they announce the news in the following passage. Consequently, these subjects really read it as if they were announcing something on T.V. or on radio, making each sound distinct and clear. Their reading was recorded by themselves in a language laboratory of National Central University in Chungli, Taiwan, where I have been teaching for 12 years.

I also wanted to know if these subjects can pronounce the retroflex sound at all. Therefore, a word list consisting of many other sounds in Mandarin was also included. To insure they really can differentiate the retroflex sounds from their alveolar counterparts, a section of minimal pairs also consisting of other sounds in Mandarin was added. But there was no *j* sound in this section since there is no such a counterpart for *j* in Mandarin.

A field worker of such a study should be always conscious about "the Observer's Paradox": to observe the way people use language when they are not being observed (Labov, 1972). This problem was well taken care of by asking the subjects to record their reading in a language laboratory. Each of them was in a private booth at an appointed time. They were not told what I was looking for except for a simple explanation that their recording would be used for studying language in use today but would not be responsible for their grade for the course they were taking, whatsoever. A section of English was inserted in the reading material to further divert their attention from their use of Mandarin. They might be misled by the trick to believe that I was looking for their pronunciation in English.

Story-telling might be a good solution to the "Observer's Paradox" in eliciting informal speech. To tell a story without anyone around might insure the privacy, security, and comfort of the story-teller. In this study, these subjects came to watch a video tape of *The Pear Stories* in the same language laboratory mentioned earlier. They came to watch the tape, which is silent, by appointment. They respectively recorded their oral story on the spot after they had watched it. Altogether, 59 students taped their stories. 39 students were in the sophomore year and 20 in the freshman year at the English Department of National Central University. A story told by a sophomore had about an average of 500 words while that by a freshman had about 300 words.

All 59 tapes covering the four sections, three in Chinese and one in English, and the pear story, were returned to me after they had finished recording. However, 9 of them were discarded as they were either made by Cantonese speakers who were born and grew up in Hong Kong, or incomplete due to erasing part of the tape or due to not following the instructions. Consequently, 50 tapes were used to analyze the use of language by the subjects. But in the final analysis, only 45 were utilized as five more subjects were dropped from the study due to not filling out the questionnaire in accordance with the instructions.

Results

The initial analysis concentrated on the percentage of correct pronunciation of the retroflex sounds in question on the basis of the subject's sex. It was expected that female students (38 in number) would outperform their male counterparts (12).

In this study, scores for correct pronunciation are represented by the percentile

scale. Each tape was listened to by the investigator one by one and section by section. The total number of each retroflex sound, or the sound which should have been retroflexed, was calculated and then divided the number of the correct sound in question.

In story-telling, as in other sections, female students did much better than their male fellow students. Scores by sex are compared in the chart that follows.

Percentage of correct retroflex sounds by sex in story-telling.

	Male	Female
ch	15.58	62.63
ch'	9.83	51.55
sh	30.75	76.11
j	28.75	65.08

We may be really surprised when we look at the low scores of male subjects. In the use of *ch'*, it is even lower than ten percent. However, when we compare scores for the four retroflex sounds, both for male and female subjects, they are in the descending order of *sh, j, ch,* and *ch'*. This order shows to us that even in these four sounds, there is a level of difficulty in the order based on their scores for both male and female subjects. In these figures, we can also say that by whatever yardstick we can think of, females are much more careful speakers than male students in informal speech.

The breakdown of the retroflex sounds in passage-reading is as follows:

ch	ch'	sh	j
15	3	14	4

Calculation of scores by sex yields these statistics as shown in the following chart.

Percentage of correct retroflex sounds by sex in passage-reading

	Male	Female
ch	63.75	85.34
ch'	49.75	74.79
sh	58.25	84.69
j	70.83	92.95

These charts clearly indicate that difference by sex for each sound is not as pronounced as in story-telling, although females still surpassed their male counterparts. It might show that male students were really careless in their informal speech; however, they could perform much better when the occasion arose requring them to do so. On this occasion, their performance proved that they still had from about fifty to seventy percent of correct phonetic realizations. It also proved that they had correct prounciation for these sounds in their phonological repertoire.

These statistics also demonstrate that the level of difficulty of these four sounds

remains almost the same as the one discussed before. *ch'* was still the hardest for both boys and girls although the easiest shifted from *sh* to *j*.

Scores from reading the word list and minimal pairs should be higher than those from story-telling and passage-reading, with minimal pairs' scores higher than those from reading the word list. On the contrary, the figure on the following page eludes our expectation.

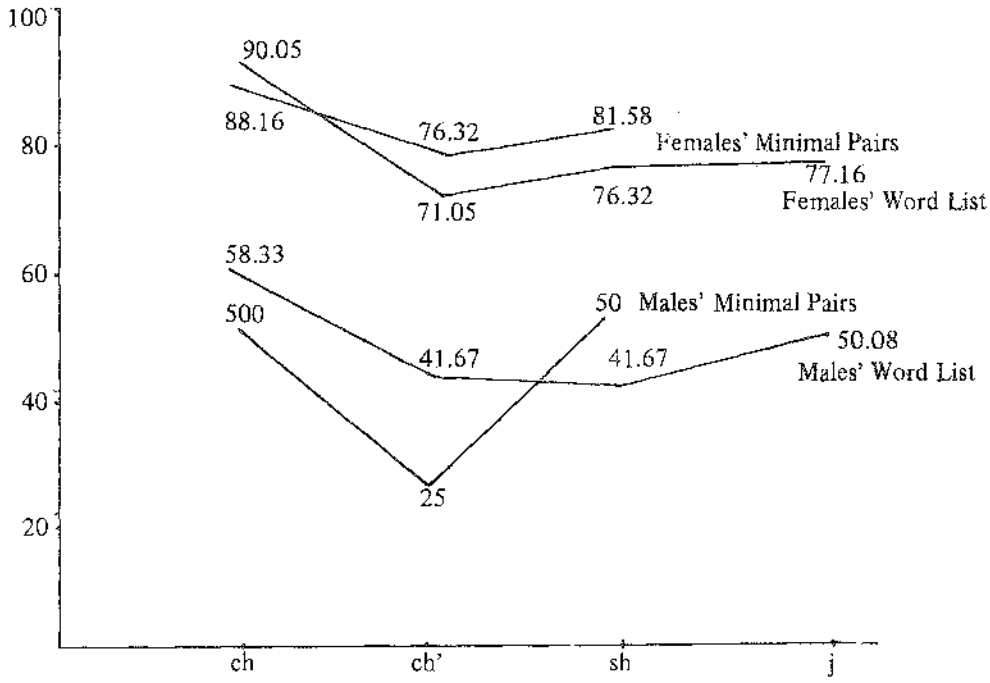

Figure 1. Scores from reading the Word List and from reading the Minimal Pairs.

On the surface, it seems difficult to understand the fact that scores from reading the Word List and the Minimal Paris would be lower than story-telling and passage-reading. On closer examination of the data, we found out that individual subjects in their majority either achieved 100 percent correct or got a zero on these retroflex sounds. In this case, it was usually the reversing of the unretroflexed to be retroflexed and *vice versa*. This has clearly demonstrated that these subjects who committed such errors had had retroflex sounds in their repertoire but were confused when they tried to activate the correct ones to use. But reversing of the retroflex sounds to the unretroflex sound is by far more often than reversing the unretroflex to retroflex sound. We may assume that these subjects who made such mistakes might have acquired unretroflex sounds before retroflex ones in their language acquisition. In such a case, we may further assume that for such speakers, unretroflex sounds, which are used in Taiwanese and Mandarin, are first-order sounds and retroflex sounds are second-order ones in their language acquisition process. This interpretation inevitably calls for a closer examination of these subjects' linguistic backgrounds which will be done in the final analysis in the second part of this paper.

Figure 1 also unmistakably shows the successively low scores for the *ch'* sound. It

further confirms the difficulty of this sound in the whole phonological system of Mandarin. However, the level of ease in using *ch, sh,* and *j* varies and their order is not as clear-cut as that one in passage-reading and story-telling. Is this true of Mandarin-Taiwanese bilinguals and also true of monolingual Mandarin speakers? We can find the answer in the final analysis of this paper which takes the subjects' linguistic backgrounds into consideration so that the pattern of social stratification can be identified.

Final Analysis By Means of Sociolinguistic Data

The analysis in the first part of the paper seems to be a simplistic solution to these subjects' language behavior although it does not speak for the fact that male subjects performed worse than female subjects and the easy-to-see level of difficulty in using *ch'*. Nevertheless, when we focus our attention on the subjects by means of sociolinguistic data, we can isolate some factors and find a more convincing pattern of language stratification. As a part of this study, a questionnaire on linguistic backgrounds was distributed to subjects to fill out after they had individually made their tape. In our final analysis, we can draw on sociolinguistic resources from these questionnaires.

The forty-five subjects utilized in the final analysis were those who made tapes satisfactorily and filled out the questionnaire in time for analysis. Five other subjects who had to be removed from the final analysis were not dropped through their own fault. Two of them were native speakers of Cantonese from Hong Kong. Another two were bilingual speakers of Taiwanese and Mandarin in childhood and one boy was the only native speaker of Mandarin. He was dropped on this count. However, his data will also be used in comparison.

In the final analysis, 30 subjects were native speakers of Taiwanese, 10 male and 20 female, while the other 15 were native speakers of Mandarin. Native speakers of Taiwanese were bilingual while all native speakers of Mandarin could understand spoken Taiwanese, but only 9 of them spoke Taiwanese. We may try to find the solution to the order of language acquisition through their mother tongue and bilingualism. We may see the level of ease or difficulty in learning Mandarin from the scores in Figure 2.1.

Figure 2.1 has clearly shown that three groups of native and non-native speakers of Mandarin made the same scores for each group for *ch'* and *sh* in the Word List. It is by no means by sheer chance that they did so. Clearly, native speakers of Mandarin maintained constant scores for *ch', sh,* and *j*. There was no level of difficulty or ease to be discernable from the figure. But the non-native speakers mastered the use of *ch* and *j* much better than *ch'* and *sh*. This can unmistakably prove that *ch'* and *sh* are at the same level of difficulty for non-native speakers. However, we could not draw such a conclusion from Figure 1 in our initial analysis, at least not for the sound of *sh*.

Analyzing the data on the the Minimal Paris, we find that the level of difficulty for *ch'* can be valid while that for *sh* should be revised. I believe that scores on minimal pairs are more reliable as the subjects were more conscious about these contrasts in sounds in each pair.

Sound in Figure 2.2. convince us that *ch'* is both difficult for both native and non-

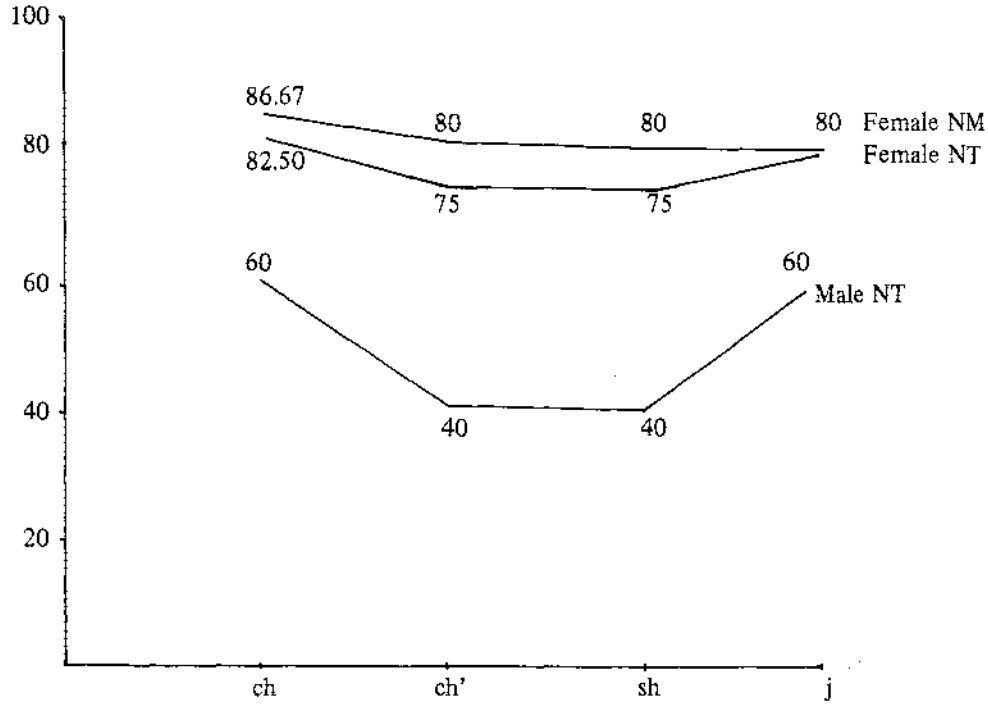

Figure 2.1. Scores by sex and mother tongue for the retroflex sounds in the Word List. NT: Native Speakers of Taiwanese: NM: Native Speakers of Mandarin.

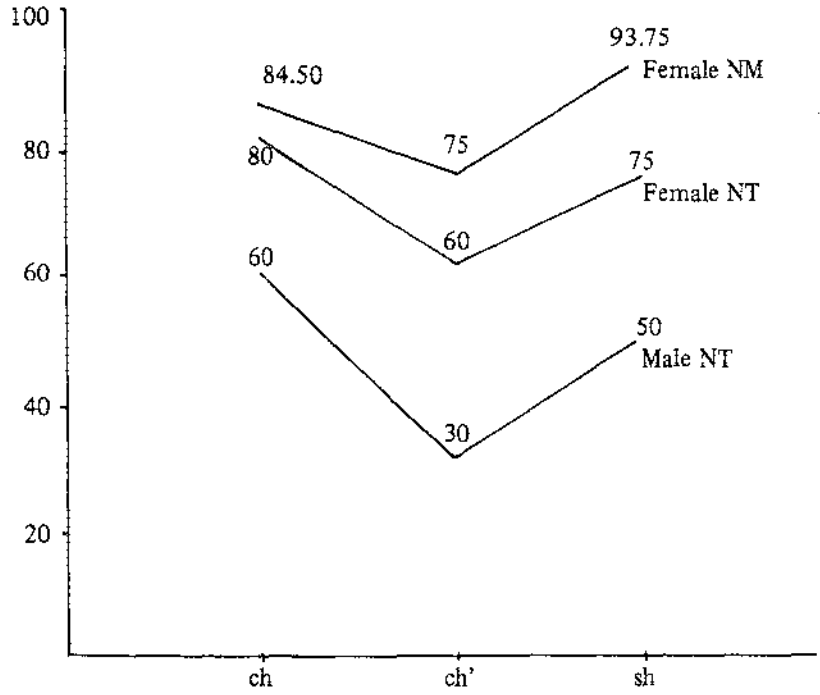

Figure 2.2. Scores by sex and mother tongue for the retroflex sounds in the Minimal Pairs. NT: Native Speakers of Taiwanese: NM: Native Speakers of Mandarin.

native speakers of Mandarin. However, our conclusion for *ch* and *sh* may not be very conclusive as we can say from this figure that *sh* is easier than *ch* for female native speakers of Mandarin but *vice versa* for non-native speakers.

After we have solved the problem of the level of difficulty for these sounds in question, we may take an interest in the degree of variation between formal and informal speech in terms of retroflex and unretroflex sounds. Can it be possible that these subjects would be like the two young women talking in the bus mentioned in the Introduction? Our data from passage-reading and story-telling can readily answer our question. Yet, we have more linguistic data to help us in solving this problem. We are going to compare scores by sex and by their native language backgrounds.

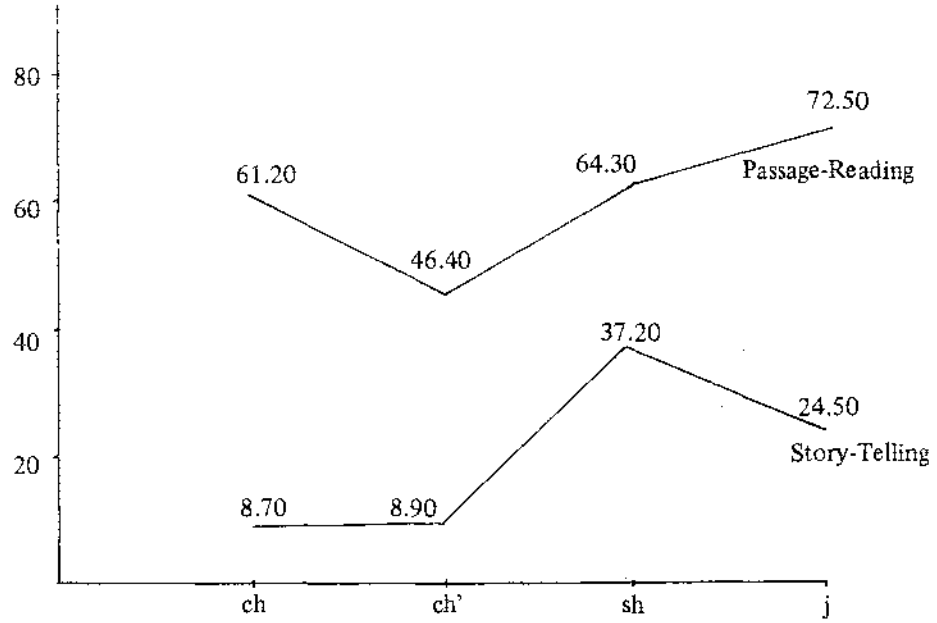

Figure 3.1. Scores for Passage-Reading and Story-Telling by male native speakers of Taiwanese.

Male native speakers of Taiwanese used only 61.10% of the retroflex sounds of Mandarin in reading a passage which is regarded as formal speech in this study. But they used only 19.80 of these retroflex sounds in story-telling, which is considered informal speech here. A difference of 41.30 between the two levels of speech means a sharp drop of standard form in pronunciation. If we consider the correct percentage for *ch* and *ch'*, we find the standard form in this case comes almost to nile. This sharp decline in informal speech may be an indication of male solidarity or masculinism (Labov, 1972). In other words, they have been very careless in everyday speech as can be seen from the figure. Furthermore, the sharp curve of the lines in the figure also demonstrates the validity of our former conclusion of the level of difficulty in the use of the retroflex sounds in these subjects. This is further proved in Figure 3.2. for the female native speakers of Taiwan. The line of scores in the figure both in formal and informal speech for female native Mandarin speakers remains almost completely horizontal without sharp curves at all. It seems to indicate that the level of difficulty for these sounds at least is not conspicuous in these female native speakers of Manda-

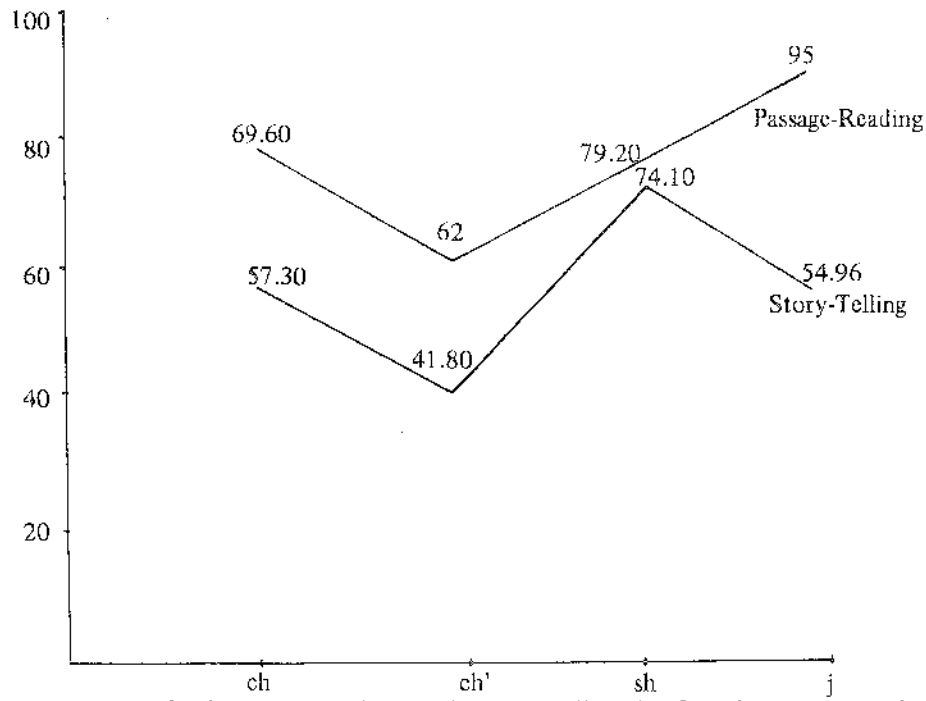

Figure 3.2. Scores for Passage-Reading and Story-Telling by female native speakers of Taiwanese.

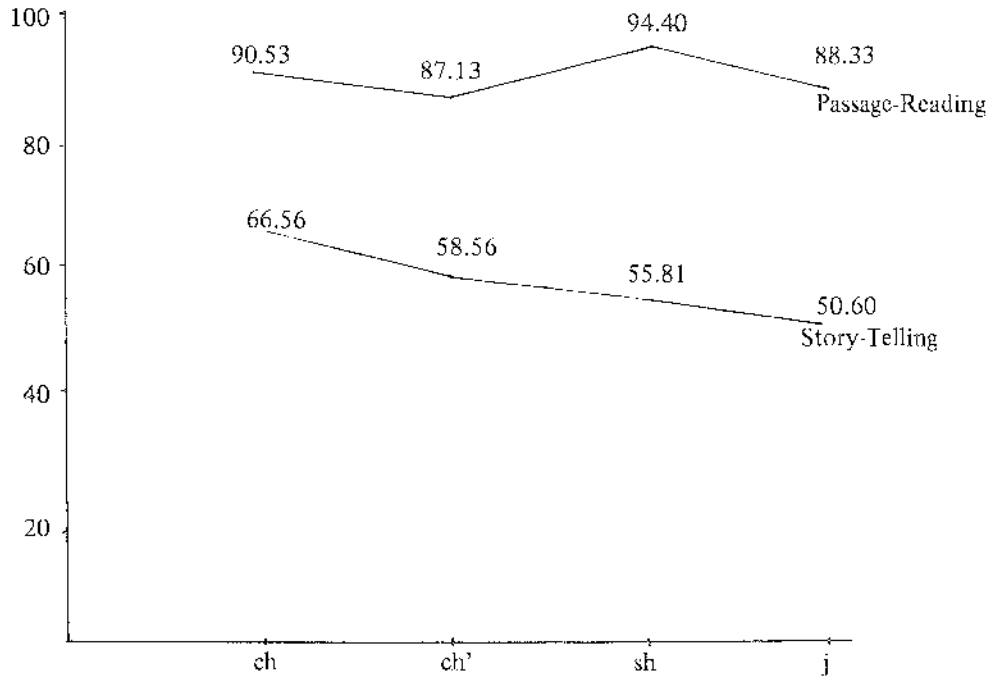

Figure 3.3. Scores for Passage-Reading and Story-Telling by female native speakers of Mandarin.

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Female native Taiwanese speakers shifted from 78.50% of correctness in formal speech to 57.04% in informal speech. This is the smallest difference of the two levels, 21.0%. It is more interesting to note that there is a sharp decline of 32.28% from 90.17% to 57.89% in native speakers of Mandarin. In other words, in everyday speech, they may use as little as 57.89% of correct retroflex sounds in Mandarin. What has caused such a drop? It might be the good intermingling between the native and non-native speakers of Mandarin on campus and at every level of their daily lives. The pressure on native Mandarin speakers may always be present to adapt their speech to the ordinary level of their non-native Mandarin-speaker counterparts.

The sole male native Mandarin speaker used 83.25% of correct retroflex sound in passage-reading and 74.5% in story-telling, a decline of 9.25.

From these statistics and figures we can further conclude that a speaker's native language and sex difference influence the correctness of pronunciation at different levels of speech they employ in communication. A native speaker of Mandarin who is not perfect in formal-speech pronunciation will shift to incorrect pronunciation to a considerable degree due to sociolinguistic factors. As these subjects' native language and sex difference have played so decisive a role in the correctness of their pronunciation, we will continuously utilize them in our further analysis of the data in the following pages.

The dominant language at home and school of the native speakers of Mandarin in these subjects was all Mandarin. There were, however, only two female subjects whose parents were both native speakers of Mandarin. These two subjects are worthy of our special attention as they had almost the same sociolinguistic background. Their fathers were both college-educated. One subject's father was a junior high school teacher while his wife might be uneducated as her education in the questionnaire was left unfilled. This subject achieved 100 on every count of the task in story-telling, passage-reading, reading word lists, and reading minimal pairs. But the other subject achieved only average level among native Mandarin speakers and got three zeros in the Word List and no task was perfect in story-telling. This girl's father was a statistician and her mother is a public employee while the girl who made full marks had a mother serving as a housewife. While their family background was almost the same, their language achievement was remarkably different. Disregarding ability in language acquisition, we do still find from their questionnaires a factor that might make a difference. The girl who made several zeros had a maid servant in her house from whom she learned Taiwanese at the age of 10. A maid servant is now almost only a thing in memory as societal structure has been completely changed in Taiwan. But as a social phenomenon, a maid is usually uneducated, speaks Taiwanese and substandard Mandarin. She might have unfavorably influenced the girl's language acquisition. Having had her home in Kaohsiung might also be a contributing factor to her bad scores. Kaohsiung in 1960s was still an unprosperous town and many local children might speak substandard Mandarin in school or in their home. We may still be able to point out that a parent's being a junior high school teacher might also contribute to perfect pronunciation in another subject.

Although these native Mandarin speakers' dominant language at home and in school is all Mandarin, their parents' native language varied considerably. In the fifteen

subjects using Mandarin as the native language, the two mentioned in the preceding paragraph had both parents as native Mandarin speakers; four had one parent speaking Mandarin natively, while the other parent of theirs spoke either Taiwanese or other Chinese languages. Using the composite scores in passage-reading and story-telling for native Mandarin speakers, we may be able to find the norm of these speakers. The mean composite scores in this regard were 638.13. But the composite scores for the subject having a native Mandarin-speaking parent were only 621.00. One of these subjects however, made perfect scores, getting 800 in all. This high scorer was from Taipei, the capital of Taiwan. Her father was college-educated and her mother completed senior high school education. The lowest scorer in this group lived in Kaohsiung before the age of 6 and in Keelung before 14. Both of her parents completed only elementary school.

The rest in this group were nine subjects who made 633.22 in average composite scores. The average in this group stands higher than that for the other group just discussed. One subject in this group deserves our mention. Again she is from Taipei, has a parent graduated from university and another one from junior college. She made 795 in her scores, coming close to the perfect score.

The other six all were born and grew up in Taipei and another two in this group were respectively from northern and northeastern Taiwan. Their parents all had about a college education or lower with an exceptional subject whose parents were only elementary school graduates.

When they were asked if they thought they spoke standard Mandarin, all the fifteen subjects in this group answered yes. All of them thought that pronunciation of Mandarin was very important. It seems that their self-evaluation of their pronunciation in Mandarin was not objective and in some cases it was misleading. But this applies to those who made poor scores. All of them except two said that they had tried to speak standard Mandarin.

The female native speakers of Taiwanese in this study all used Taiwanese in their home and used Mandarin as the dominant language in school and dormitory. Their parents were all native speakers of Taiwanese many of whom spoke Japanese as a second language and then Mandarin as a third language. The average of this group's composite scores for passage-reading and story-telling were 536, of which ten scored above and another ten scored below. The top scorer in this group made perfect scores on every count, surpassing all other speakers and on the same par with two other top scorers in the native Mandarin-speaking group. This achievement is really outstanding in that she had mastered the phonological system of Mandarin better than other subjects. She learned Mandarin at the age of six from her teachers and classmates. She was born in Taipei and also grew up there. But Taipei for this group is not a landmark of correct pronunciation. Many other subjects who scored very low were also residents of Taipei. As they mostly learned Mandarin from their teachers in kindergarten and elmentary school, teachers serving as a model of pronunciation might be more important than their parents. The top scorer in this group said in the questionnaire that her parents did not speak standard Mandarin; however, her teachers in kindergarten and elementary school did. Family background in this group did not seem to be important, although this top scorer had well-educated parents, her father being a college graduate and her mother a high school graduate.

The subjects in this group evaluated their own pronunciation in two different ways. The top four scorers considered their Mandarin standard and this was correct as their scores ranged from 800 to 712. It is really interesting to note that the lowest scorer in this group who made only 296 out of 800 in composite scores checked her Mandarin "standard". Only the subjects who ranked 17th, 18th, and 19th out of 20 in the lower half of this group checked "not standard" for their Mandarin. All others in the lower half checked "standard", mistakenly. Their self-evaluation was incorrect although they said that they tried to speak standard Mandarin and all subjects in this group except one ranked 11th said that they thought pronunciation was very important.

Now we come to the last group of boys who were native speakers of Taiwanese. None of their parents were native speakers of Mandarin and six of them out of ten in this group were born and grew up in Taipei. The mean of the composite scores for this group was 324.60. But the top score in this group was only 467 while the lowest 193. By whatever yardstick we may choose, these scores in the group were very low by comparison. Yet there were still three subjects who said their Mandarin was standard and the other seven said theirs was not standard. The last seven subjects in this group were objective enough to discern their own lack of correct pronunciation in Mandarin while the other three were totally blind to their own shortcoming in language.

Seven boys attended kindergarten while three did not. Those who were in kindergarten learned Mandarin first from teachers in kindergarten and then from other teachers in elementary school. Those who did not study in kindergarten learned Mandarin from their elementary school teachers. But most of them said that their kindergarten and elementary school teachers did not speak standard Mandarin. This might be a detrimental blow to language learning in their childhood.

As far as the subject's parents' education is concerned, we have to point out that the mother's education was much lower than the father's. With only very few exceptions, a mother usually completed an elementary education. But the father's education varied considerably, from college, senior high and junior high, to elementary school. As each group in this study had big differences in their scores, the mean score by the parent's education, the father's education, will also be based on the subject's native language. The following table shows that higher the subject's parent's education, the higher his or her scores were.

Table 1. The mean score by the subject's native language and parent's education.

Group/Parent's Education		Mean Scores
Male NT	College	325
	Junior & High School	383
	Elementary School	311.67
Female NT	College	644
	Junior & High School	566.90
	Elementary School	527.00
Feamale NM	College	687.13
	Junior & High School	632
	Elementary School	419

Male NT: Male native speakers of Taiwanese. Female NT: Female native speakers of Taiwanese. Female NM: Female native speakers of Mandarin.

The only exception to our conclusion concerning the parent's education is in the group of native speakers of Taiwanese. One of the subject's parents had a college education but the subject's score was lower than those whose parent's education was only at the junior or senior high school level. But this exception is easy to understand if we know that there was only one subject in this category and so this case can very well be ignored.

The monthly income of the family will only be divided into the category of 25,000 (New Taiwan Dollars equivalent to US$625) and above and that of less than 25,000. For the first category, most incomes stood at 30,000 and for the second category at 20,000. The very few cases with incomes less than 15,000 were excluded.

Table 2. The mean score by the subject's parents' monthly incomes.

Group/Monthly Incomes		Mean Scores
Male NT	NT$25,000 & above	285.5
	15,000-24,900	336.33
Female NT	NT$25,000 & above	506.82
	15,000-24,900	470.50
Female NM	NT$25,000 & above	561.25
	15,000-24,900	724.33

Male NT: Male native speakers of Taiwanese. Female NT: Female native speakers of Taiwanese. Female NM: Female native speakers of Mandarin.

For female native speakers of Taiwanese, the higher the income, the higher the scores. But for the male native speakers of Taiwanese and female native speakers of Mandarin, the lower the income, the higher the mean score. The fact that the professionals are not best paid and incomes from personal property and business by far surpass that of professional people may speak for the fact that we failed to find a sociolinguistic pattern out of family income.

Politically and culturally, Taiwan is divided into Taipei and what is outside Taipei since Taipei is the seat of the national government of the Republic of China and highly urbanized. Therefore, the residency before the age of 14 is categorized into Taipei and Taiwan. Taipei refers to the Taipei proper and its suburbs while Taiwan refers to all other areas outside the Taipei proper and its suburbs.

Table 3. The mean score by the subject's residency.

Group/Residency		Mean Scores
Male NT	Taipei	332
	Taiwan	309
Female NT	Taipei	599.24
	Taiwan	558.42
Female NM	Taipei	713.38
	Taiwan	647.50

Male NT: Male native speakers of Taiwanese. Female NT: Female native speakers of Taiwanese. Female NM: Female native speakers of Mandarin.

Residency in the subject's childhood and before 14 years of age is apparently a sociolinguistic factor in determining social stratification of language use. In our case, it is the use of correct pronunciation in Mandarin and it may also be applied to other areas of language use.

Conclusion and Pedagogical Implications

We have isolated sociolinguistic factors working to shape up the subjects' performance in various tasks for the collection of our data. First and foremost is the sex difference between the subjects and their native language. Other factors concerning the subject's residency in childhood and before the age of 14, parents' native language, dominant language at home, parents' education and occupation are also indices of the use of correct pronunciation. Our conclusion is based on the analysis of the data collected from 59 sophomore and freshman students at the English Department of National Central University. They are the cream of the crop as they were all top scorers on their entrance examinations for all universities in Taiwan. As they came from every part of the island and their parents were in every walk of life, they could be representative of their peers in Taiwan. As such, they are good samples of the population for a study like this one.

Unfortunately, our findings must be surprising to language teachers, educators, and government agencies. We can find from our results that Taiwanese may die out in the long run. This may be seen from the fact that some subjects had Mandarin as a native language although both of their parents were native speakers of Taiwanese. In some cases, on the other hand, when one of the parents was originally a native Taiwanese speaker, the native language of the child in the home would be Mandarin. But this does not mean Mandarin has become more elaborated in these subjects. The selection of Mandarin as the official language of the country and the language of instruction in school does not guarantee that standard pronunciation will be accepted by its speaker. Our general impression is that older speakers of Mandarin pronounce more accurately than these 19 or 20 years old subjects. If this is proved to be true, Mandarin may be creolized in the future when these subjects' generation becomes parents themselves. Linguistically speaking, codification of Mandarin has not been successful as far as its phonological elaboration is concerned. In Haugen's idea, Mandarin's phonological codification has not been accepted by the community as a language (Haugen, 1966).

If we accept Labov's concept of the stratification of status and prestige, substandard variations in the use of Mandarin will result in social deprivation for these substandard speakers (Labov, 1972). The propagation of Mandarin has been the goal of the government in Taiwan for the last three decades. Judging by the performance of these subjects, we may conclude that much room is left for improvement. Many of our subjects learned Mandarin from their teachers in kindergarten and elementary school. This clearly indicates that language training especially in Mandarin phonology should never be underestimated at the preschool and elementary school levels. Generally speaking, language arts in education at all levels especially at the college level should be more emphasized so that college-educated young people can be worthy of their training.

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