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Cantonese Sociolinguistic Patterns: Correlating Social Characteristics of Speakers with Phonological Variables in Hong Kong Cantonese

By

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A.B. (Southwest Missouri State College) 1969
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C.Phil. (University of California) 1979

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

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in

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Chairman Date
May 19, 1982
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My first year of research in Hong Kong during which time I retooled my Cantonese, planned the design of this research project, and prepared the interview questions was supported by a U.S. Department of State Teaching Fellowship at the Chinese University of Hong Kong. In my second year in Hong Kong, a U.S. Department of Education Fulbright-Hays Doctoral Dissertation Research Abroad Fellowship eliminated financial anxiety and made it possible to concentrate exclusively on conducting the linguistic interviews and other phases of the research. It was in this second year that I lived on Lamma Island, a welcome refuge from the hustle and crush of Hong Kong and the closest thing to a pastoral paradise one could hope for in a place like Hong Kong. I now look back on that year as the happiest time in my life.

I acknowledge a special intellectual debt to the work of Prof. William Labov, the pioneer who developed the methodology of sociolinguistics. He turned me on to the field in 1973 when I participated in the workshop-seminar on sociolinguistics he taught at the 1973 Linguistics Institute in Ann Arbor, Michigan. Back then I had the idea of combining Chinese and sociolinguistics, and I travelled two winding roads for some time before the two finally joined together.

Among the individuals whose contribution to this dissertation I gratefully acknowledge are the following:

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Finally, to the men and women of Hong Kong who sat down with me and talked into this kwailou's tape recorder and gave this dissertation its linguistic foundation, I express my most heartfelt gratitude-- 好多謝嚟！

To the Memory of

Mayeda McCullough,

1903-1982

I'll always miss her

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1.0 Introduction

1.1 Origin of the Problem

My interest in sound change in Hong Kong Cantonese was initially aroused when I encountered the phenomenon of alternative pronunciations for saying the same thing the first time I went to Hong Kong to study Cantonese in 1975. A university student with whom I had become acquainted dropped the velar nasal initial and delabialized the labialized velar initial: he said /ǒi kōk jàn/ for 外國人 "foreigner" instead of SC /ŋǒi kwōk jàn/, the standard, textbook pronunciation I had learned.[1] As I was to discover later, these variant forms were just two of several sound changes now in progress in contemporary Hong Kong Cantonese. In January 1976 I began studying Cantonese in Hong Kong with a student who was renting a room in the same house I was. The first thing I noticed about his speech was that he too delabialized the labialized velar. I gave him a few minimal pair sets to confirm what I thought I was hearing. He said that the two members of each of the following pairs were homophones: 過 SC /kwō/ "to cross over", 個 SC /kō/ "classifier"; 光 SC /kwôŋ/ "bright", 江 /kôŋ/ "river"; 廣 SC /kwóŋ/ "broad", 講 SC /kóŋ/ "to speak." I asked him if he ever said the SC /kw-/ words with /kw-/ initial and contrasted them for him, but he didn't hear any difference and could not make the contrast either.

In fall 1976 I returned to UC-Berkeley and began exchanging English lessons for Cantonese lessons with a young woman from Hong Kong who was studying at a business school in Berkeley. In our first meeting my ear immediately caught three forms of phonological variation from Standard Cantonese. In addition to the delabialization of the labialized velar initial, there were two new variants which I had not noticed in Cantonese when I was in Hong Kong: for this speaker the Standard Cantonese syllabic nasal /ŋ̩/ was pronounced as a bilabial, i.e., SC /ŋ̩/ → /m̩/. For example, she said 五 SC /ŋ̩̍/ as /m̩̍/. Some words belonging to rhymes with the velar nasal ending in Standard Cantonese were pronounced with alveolar nasal ending, SC /-ŋ/ → /-n/. Becoming particularly intrigued with this problem of change in the finals with nasal endings, I spent several months with this subject eliciting words to find the underlying pattern of the change. In January 1979 the results of this work appeared in my article "Alveolarization in Cantonese: A case of lexical diffusion" which was published in the Journal of Chinese Linguistics, Volume 7, Number 1. What I found was that for such finals as SC /-aaŋ/ and /-aŋ/ my subject said /-aan/ and /-an/; for example, 生 SC /saa̍ŋ/ "to give birth" and 山 SC /saa̍n/ "mountain" were both /saa̍n/, and 肯 SC /háŋ/ "to be willing" and 很 SC /hán/ "very" were both /hán/. Furthermore, this change of alveolarization which had affected finals with low vowels was also spreading upwards to affect

the mid-front and mid-back vowels; for example, 香 SC /hœ̂ŋ/ "fragrant" was sometimes pronounced /hœ̂n/, 平 SC /p'èŋ/ "cheap" was most often /p'èn/, and 放 SC /fœ̄ŋ/ "to put or place" was sometimes /fœ̄n/. Because this variation appeared to be a sound change in progress, I proposed an analysis based on the theory of lexical diffusion which pinpointed the particular words of the various final categories which were undergoing change. It appeared that the change SC /-eŋ/ to /-en/ was more advanced than the change of SC /-oeŋ/ to /-oen/ since many more words of the first final had undergone a complete change to /-en/ or showed variation with /-en/ while only words of the SC /-oeŋ/ final with the guttural initials /k-/ and /h-/ had developed /-oen/ variants.

In fall 1979 I returned to Hong Kong to continue my study of Cantonese and to take up the problem of phonological variation and change in Hong Kong Cantonese as the topic of my Ph.D. dissertation research. Now, following two years of fieldwork in Hong Kong, I present the results of my sociolinguistic study which reveal the patterns of regularity underlying the sound changes of SC /ŋ/ → /m̩/ and SC kw- → k-/__o(C). This study joins two others which have also correlated social characteristics of speakers with their patterns of phonological variation. Still very much in its early stages of development, the field of Chinese sociolinguistics is being tilled by linguists working on Hong Kong Cantonese. Ground was first broken by two M.A. dissertations at the University of Hong

Kong. These were Helen Yeung's Some Aspects of Phonological Variations in the Cantonese Spoken in Hong Kong (1980) and Peter G. Pan's Prestige Forms and Phonological Variation in Hong Kong Cantonese (1981).

My work is offered with the hope that it will dispel the myth believed in by some scholars in Hong Kong that Cantonese pronunciation is in a "state of confusion." Sound change is a natural, ineluctable process in the development of human language. Cantonese can be no exception. Such statements as the following come from a scholar of Chinese who seems to be unaware of this fundamental fact about language: "The confused state of Cantonese pronunciation is in can hardly be looked upon as a stage in the process of evolution. The changes depend on the whim of the speakers and are not of a systematic nature" (Chinese University Bulletin 1979:5). On the contrary, with the application of the sociolinguist's tools of linguistic sampling and interviewing to the analysis of the Hong Kong speech community, what appears to be random variation from one speaker to the next has been found to be as regular and systematic as the rings in a cross-sectional slice of a tree. On the basis of my observation of the two sound changes of /ŋ̩/ → /m̩/ and kw- → k-/__o(C) in Hong Kong Cantonese, I believe I have identified the phonetic origins of the changes, in the case of /ŋ̩/ → /m̩/ the particular morpheme with which this change began, the relative schedules of change of several morphemes

of the relevant word classes, the different stages of development of various subgroups of the speech community which have been affected by these sound changes, and the particular subgroups of speakers with whom the /m̥/ and /k-/ variants originated.

1.2 Theory and Methodology for the Sociolinguistic Study of Sound Change

In my study of sound change in Hong Kong Cantonese, I join together a theory of sound change with a methodology for investigating it. The model of sound change within which I will explain the sound changes which I have observed to be in progress in Hong Kong Cantonese is based on the theory of lexical diffusion first proposed by Wang (1969). The techniques I have used to collect data on sound change were developed by the pioneer sociolinguist, William Labov, and described in detail in his The Design of a Sociolinguistic Research Project (1972) and his other numerous publications.

1.3 Theory of Lexical Diffusion

The theory of lexical diffusion recognizes that sound change proceeds through time and that this process can best be understood by viewing sound change along three dimensions: The phonetic dimension describes the phonetic conditions that give rise to the abrupt change from sound X to sound Y in a particular morpheme, a change which is both perceptible and potentially phonemic. The lexical dimension

links the change to the lexicon by tracing the change to the morpheme or morphemes of the lexical class initially affected by it. Finally, the social dimension follows the spread of the sound change from one subgroup of speakers to another in the speech community.

Over the last decade or so, there have been several diachronic investigations of sound change that span a time frame from Middle Chinese (ca. 700 AD) to modern Chinese dialects which have been based on the theory of lexical diffusion (Chen and Hsieh 1971; Cheng and Wang 1972, 1970; Hsieh 1973; and Wang and Cheng 1970). My study, however, departs from this historical trend by applying the theory of lexical diffusion to the synchronic investigation of sound changes in progress. While recognizing the remarkable results achieved in historical studies, I found in my own work in Chinese historical phonology that the historical linguist works with one strike against him: since historical changes are separated from the present by long time spans, they are therefore impossible to observe directly. Nothing less than a time machine would give the historical linguist access to the genuinely reliable source of the information he needs--the speakers themselves. Sound changes taking place right under our noses, however, are far more amenable to scientific investigation since they can be directly observed: Speakers are all around us and many are willing to work with linguists.

1.4 Sociolinguistic Methodology

In its original presentation the theory of lexical diffusion did not devote much attention to the actual means for the investigation of sound change. It was left to the sociolinguists to develop the tools for the microstudy of synchronic sound change. The sociolinguist's practical tools of sampling and interviewing for gathering sociolinguistic data on the speech community have permitted him to observe sound change as if under a microscope by bringing into sharp focus the social dimension of a sound change, i.e., its distribution across subgroups of speakers of a speech community. In this section I describe the principles and methods of sociolinguistics I have followed in carrying out my Cantonese research project.

The sociolinguist's investigation of variation and change begins first with the study of the vernacular. Labov has defined the vernacular as ". . . the mother tongue as it is spoken by ordinary people--rich and poor, educated and uneducated . . . the form that is used in everyday communication" (Labov 1972a:8-9). It is " . . . that form of speech which requires the least amount of monitoring by the speaker, learned and overlearned in pre-adolescent years, and used for the most intimate and casual kind of communication" (Labov 1972a:9).

Five principles or "sociolinguistic axioms" have emerged from Labov's sociolinguistic research:

1. The speaker shifts his style of speaking as the social situation and topic of discussion change. Correlated with the change in style is a change in the linguistic variables the speaker uses.
2. Styles of speaking form a continuum from the least amount of attention the speaker pays to his speech characteristic of casual or emotional speech to the greatest amount of attention the speaker gives to his speech when reading a list of words or talking about the pronunciation of words.
3. The speaker pays the least attention to his speech when speaking the vernacular, and consequently, the vernacular provides the most structured data for linguistic analysis.
4. Talking to speakers about the way they speak creates a formal situation which causes them to self-consciously attend to their speech. The soiolinguist must observe the speaker's vernacular style without seeming to do so.
5. Only face-to-face interviews recorded with an excellent quality tape-recorder and microphone can produce the kind of data on which accurate solutions to linguistic problems can be based (Labov 1972a:9-10).

The sociolinguist's primary object of study is the "linguistic variable." There are five stages in its identification: First, there is the discovery of variation in which different members of the same speech community are observed to use different linguistic forms to express the same meaning (Labov 1972a:32). Second, the linguist

attempts to determine the meaning of the variant form and set up "invariant rules" which predict the occurrence of the two forms. If this cannot be done, then the linguist recognizes "inherent variation" or two ways to say the same thing (Labov 1972a:33). Third, the linguist looks for the highest level of language structure at which the variation occurs. In the case of phonological variation, this is at the phonological level (Labov 1972a:33). Fourth, the linguist designs his research instruments with these environments in mind in order to obtain as full a picture as possible on the distribution of the variant forms; he develops formal word lists, texts, minimal pair word lists, questions to elicit connected speech (as opposed to one-word yes-no type responses) (Labov 1972a:33).

Following the selection of the linguistic variable to be investigated, the two most important components of a sociolinguistic study are the interview and the sample. The interview provides the means for collecting the linguistic data for analysis and on which observations about the speech community will be made. As stated in Labov's first sociolinguistic axiom, the same person does not speak the same way under different conditions but adjusts his style of speaking to suit the formality of the speech situation. The speaker does this by using those linguistic forms he feels are appropriate to the speech context. Consequently, the linguistic interview has as its purpose the gathering of both casual and formal varieties of speech. Since the

object of the sociolinguist's study is the observation of the vernacular (axiom 3), i.e., how people talk under natural conditions when not being observed, the sociolinguist creates for himself the "observer's paradox." Consequently, he must find ways to minimize the observer effect. The sociolinguist does this by asking questions which will maximally develop his subject's interest and involvement in a topic of conversation and by conducting the interview so that it is more like a casual conversation than an interview seeking information (Labov 1972a:47). The sociolinguistic sample comprises a group of subjects to be interviewed who have been chosen on the basis of certain of their social characteristics which make this group a composite representative of the larger speech community. The assumption is that studying this group is like studying the community itself--the findings produced on the basis of the sample can be extended to the community, but since the sample is smaller, the study of the sample will take less time and be less expensive than if the entire community had been interviewed (which would be an impossible task for a large community). The composition of the sample will depend on the type and number of independent variables--that is, social characteristics, to be correlated with the dependent linguistic variable. Typically, independent variables are drawn from a pool of such characteristics as sex, age, and social class; these last two can be graded into as many age groups and social classes as the sociolinguist cares to make correlations with.

1.5 The Sociolinguistic Interview

There are two main parts to the sociolinguistic interview: the spontaneous section and the controlled section. The spontaneous section of the interview obtains speech representative of the speaker's vernacular or casual style as well as his careful or "consultative" style which he uses in a question and answer exchange. The forms of speech the speaker uses in this section of the interview are under his control and not the sociolinguist's (Labov 1972a:45). To secure spontaneous speech in which the speaker projects his genuine interest and involvement, the linguist asks questions on such topics as death and the danger of death, experiences involving the element of danger, the supernatural, sex, marriage, and courtship, and moral indignation (Labov 1972a: 49-51). The interviewer's ideal question ". . . stimulates speech, interests the subject profoundly, obtains phonological and grammatical information, reveals cultural attitudes, and yields demographic information as well" (Labov 1972a:54).

The second part of the interview is the controlled section in which the sociolinguist utilizes texts, word lists, minimal pairs, etc., to elicit forms of the linguistic variable from the subject. The subject's conscious attitudes about language are also solicited in this section (Labov 1972a: 46). Asking the subject to pronounce a list of words is tantamount to giving him a formal test. This situation heightens the observer effect and calls forth from the

subject "normative attitudes" about language; his responses depart radically from the way he actually speaks, however (Labov 1972a:56).

On the basis of his explortory observations, the sociolinguist begins his study of phonological variables with the following assumption: the variants he is looking for will occur with some regularity in casual speech and this will be the case for some subjects but not necessarily for others; that some subjects may use the variant forms in their casual speech but not in their careful speech during the controlled section of the interview when they are asked to read a list of words; some informants may only use the variant forms in both their casual speech and careful speech since the change from the standard forms to the variant forms is a complete one; some informants may use both the variant and standard forms in both their casual and careful speech.

1.6 The Sociolinguistic Sample

The sociolinguist attemtps to select a sample of subjects who will accurately represent the speech community from which they are drawn, i.e., ideally the sample is a microcosm of the larger speech community. An accurately representative sample gives the study its external validity: the sociolinguist can confidently make claims about the speech community on the basis of what he has found to be true of the sample. That is, he can extrapolate his findings from the sample to the speech community. In selecting a sample, the sociolinguist simplifies his task if he can work with a

sample that has been previously selected in the course of a sociological survey. If this is not possible, then the sociolinguist must select his own sample. The research design of my Hong Kong study which will be described in the next chapter called for a stratified random sample, but I was unable to carry this plan through to my complete satisfaction. As I have discovered, sampling is probably the most difficult part of a sociolinguistic project and the most crucial to the reliability of the conclusions. By sampling I mean the successful selection of a subject which involves several stages, i.e., the subject is willing to be chosen to be interviewed, agrees to be interviewed, and gets interviewed.

A stratified random sample presupposes that all the members of the speech community have been enumerated, identified by name and social characteristics, and their names enrolled in a list. The sociolinguist can randomly select subjects from this list by picking a number from a table of random numbers and then selecting the subject with that number from the list. Since the sociolinguist knows the independent variables he is investigating, he can insure that the various independent variable categories are represented by subjects by "stratifying" the sample: that is, he continues drawing subjects from the pool of potential subjects until a category is sufficiently represented.

The number of subjects in the sample will depend on the number of independent variables to be included in the

study. For example, if the study investigates three independent variables of sex, age, and social class and each of these categories has been subdivided into two sexes, four age groups (e.g., subjects aged 15 to 22, 23 to 30, 31 to 44, and 45 and over which was done for this study), and three social classes (upper, middle, and lower), then the sociolinguist has an independent variable matrix of 2 X 4 X 3 or 24 cells to be filled by subjects who reflect these social characteristics. Labov suggests that four or five subjects per cell provide reliable sociolinguistic data (Labov 1972a: 38). The abov matrix would therefore require a sample of 96 to 120 subjects. The independent variable matrix would take the form shown in Table 1 below.

Categorizing subjects by their sex and age is easier than categorizing them by their social class. Labov (1966) and Shuy et al. (1968) each developed a set of criteria for assigning social class which included determining the subject's educational level, occupation, and income (among other things) and then numerically weighting these items. The Hong Kong study categorized subjects by their educational level only, and the rationale and method for doing this will be described in the next chapter.

Social Class	Males	Females
I (upper)	A (15-22 years of age)	
	B (23-30)	
	C (31-44)	
	D (45+)	
II (middle)	A (15-22)	
	B (23-30)	
	C (31-44)	
	D (45+)	
III (lower)	A (15-22)	
	B (23-30)	
	C (31-44)	
	D (45+)	

Table 1. A matrix with three independent variables of sex (male and female), age (four groups), and social class (three groups).

2.0 Research Design of the Hong Kong Study

In this chapter I will describe the research design of my Hong Kong research project--the phonological variables which were investigated, questions asked in the interview, research instruments used in the interview, the pilot study for testing the instruments, sampling methods used to obtain subjects, the composition of the sample, the independent variables which have been correlated with the phonological variables, and problems encountered in the field selecting and interviewing subjects. Before doing this, however, I will first provide a backdrop to the study with a sketch of Hong Kong and its speech community.

2.1 Hong Kong and the Hong Kong Speech Community

The territory of Hong Kong is situated on the southern coast of China just below Guangdong Province and a short plane ride away from Guangzhou, the provincial capital (see Figure 1, Map of Hong Kong); it comprises more than 200 islands, the largest of which are Lantau and Hong Kong, and a piece of the China Mainland referred to as the Kowloon Peninsula and the New Territories. Hong Kong Island itself has been a British Colony since 1841 when the Chinese Government awarded the island to Britain in perpetuity as compensation for losing the First Opium War (1840-42). In 1860 Britain acquired in perpetuity the Kowloon Peninsula extending as far north as Boundary Street. The New Territories, comprising the area north of Boundary Street and extending up to the Shenzhen River (深圳河) along with

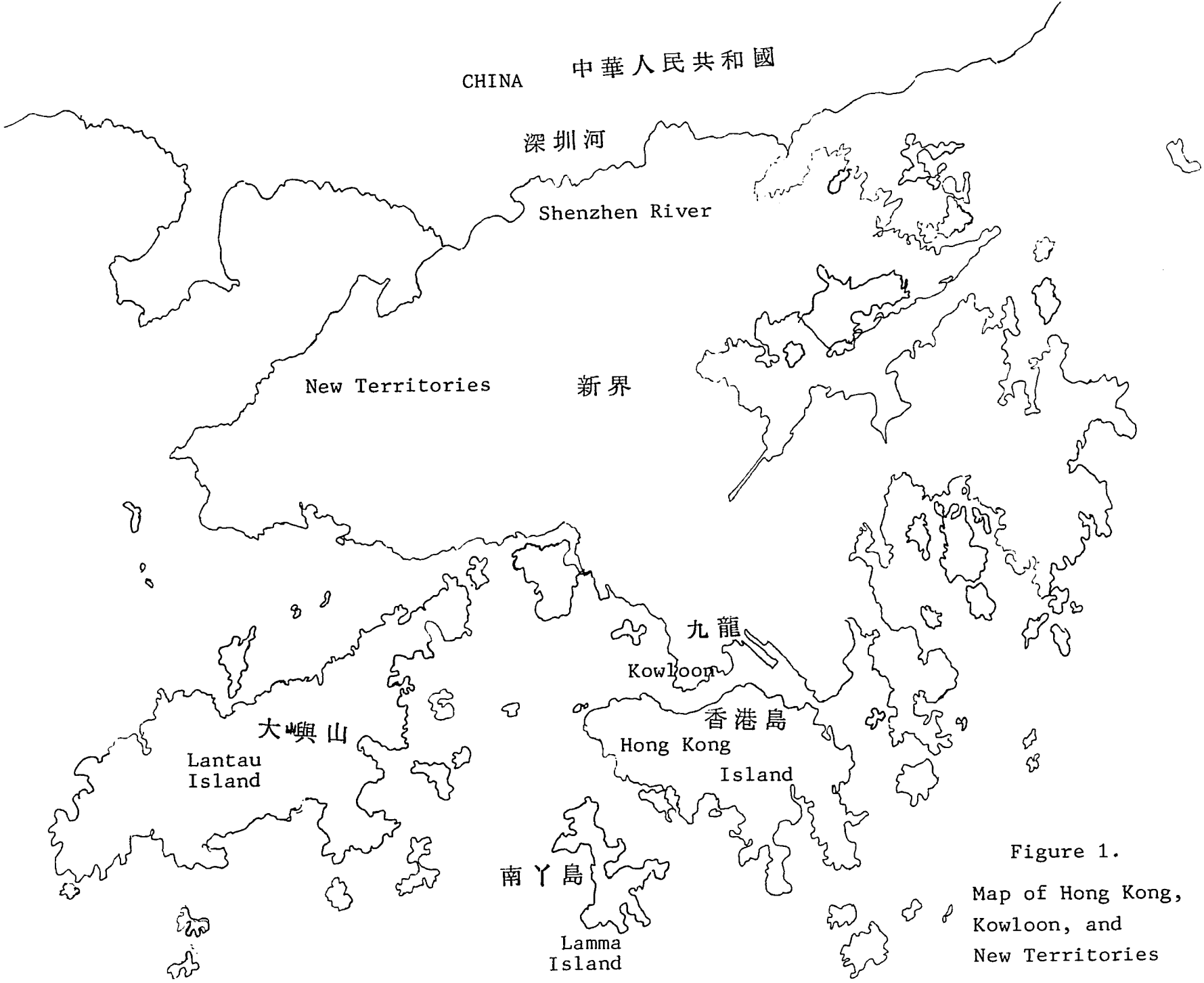


Figure 1.

Map of Hong Kong, Kowloon, and New Territories

235 islands, were leased to Britain by China in 1898 for 99 years. Under the terms of this lease, the New Territories are to revert back to China on July 1, 1997. Whether this is actually going to happen is a matter of much speculation among residents--especially the investors. As this date draws nearer, the anxiety of many people grows more intense.

Hong Kong covers a land area of 1,060 square kilometers and has a population which was tentatively placed at just under six million by the 1981 Hong Kong Census' preliminary count. This figure represents an increase of almost 50% since 1970. Population growth has not been from natural increase which actually dropped during the 1970's from 14.9 per thousand to 12.0 per thousand because of a decline in the birthrate from 20 per thousand in 1970 to 16.9 per thousand in 1980. Rather, Hong Kong's population boom has been the result of a huge influx of legal and illegal immigrants from China and of Vietnamese "Boat People" who have been granted refuge. Because Hong Kong is a very small place, it has one of the highest population densities in the world. The majority of the territory's residents is concentrated on Hong Kong Island and Kowloon where population density is 25,400 people per square kilometer (Rao 1981: 223). In the last few years the Hong Kong Government has undertaken a massive housing program in the New Territories which has been relocating hundreds of thousands of people into what were formerly rural areas of the Colony.

In 1971 when the Kong Kong Census was being conducted, census-takers asked Hong Kong residents several questions

about their mother tongue or language spoken at home and their place of origin. As shown in Table 2, "Place of Origin and Usual Language," the Census distinguished five categories of Chinese language: Cantonese, Hakka, Hoklo (which includes all languages of the Min group, viz., Hoklo, Chaozhou, and all related dialects of Fujian, Taiwan, Hainan, and coastal Guangdong), Seiyap, and any other languages of China (which includes the Mandarin and Wu families of Chinese dialects, and Mongolian, Manchu, Tibetan, and other non-Chinese minority tribal languages). A total of 3,469,235 people claimed Cantonese as their mother tongue or 88% of Hong Kong's total 1971 population of 3,936,630. The other four categories of Chinese language were spoken by 11% of the population. If we look at just that portion of the population which claimed a Chinese language (or language of China) as its mother tongue which numbered 3,874,382 people, then the percentage reporting Cantonese is 90% of the total; Hoklo with 164,295 is 4%; Hakka with 104,284 is 3%; other languages of China with 89,515 is 2%; and Seiyap with 47,053 is 1%. The 1981 Census did not ask questions about language, but if we assume that the 1971 pattern has been more or less maintained today, then Hong Kong is clearly a predominantly Cantonese-speaking community. English and other languages were reported as the usual language by 1% of Hong Kong's population (Hong Kong Population and Housing Census 1971:7)

T'sou's (1976) analysis of the 1971 Census data on

Table 2. Place of Origin and Usual Language (adapted from Table 3, 1971 Hong Kong Population and Housing Census, p. 7)

Place of Origin	Language Used in Home (by Numbers of Speakers)								
	Cantonese	Hakka	Hoklo	Seiyap	Other Lg of China	English	Other Language	Mute	Total
HK, Kln, NT	158,790	23,790	1,506	153	586	392	40	442	185,699
Canton, Macao	1,983,372	62,664	11,539	2,571	7,951	1,200	293	2,493	2,072,083
Seiyap	632,174	1,813	3,120	42,346	4,242	244	67	768	684,774
Chaozhou	262,683	5,169	107,979	1,006	13,800	143	74	600	391,454
Guangdong nec	232,215	9,260	4,810	461	2,916	192	74	287	250,215
China nec	187,184	1,242	35,006	471	59,433	655	406	396	284,793
South Asia	1,259	9	30	1	127	2,438	4,854	9	8,727
Malaysia, Singapore	2,006	119	100	3	95	504	269	3	3,099
Asian count. nec	1,595	25	137	8	199	956	7,587	4	10,511
Pacific, Oceania	318	5	6	-	15	2,090	367	3	2,804
Britain	3,557	122	36	2	75	24,964	225	23	29,004
Europe nec	927	5	2	-	29	2,773	1,536	6	5,278
USA, Canada	335	9	-	27	32	4,191	84	2	4,680
Cent. & So. America,WI	233	8	-	1	2	218	116	-	578
Africa	47	3	-	-	-	109	43	-	202
Unknown	2,540	41	24	3	13	50	15	43	2,729
Total	3,469,235	104,284	164,295	47,053	89,515	41,119	16,050	5,079	3,936,630

the five main Chinese language categories classifies Hong Kong's Chinese-speaking population into five ethnolinguistic groups: Basic Cantonese, Seiyap, Chaozhou, Hakka, and Out-of-Staters.

Basic Cantonese refers to people who claimed as their place of origin Hong Kong, Canton, Macao, and neighboring areas, and other places in Guangdong and Guangxi Provinces and reported Cantonese as their home language. The Basic Cantonese ethnolinguistic group numbers 3,456,418 people which constitutes 89% of Hong Kong's total Chinese-speaking population (this figure does not include figures on Cantonese whose place of origins were outside of China and Hong Kong).

The Seiyap (四邑) group indicates people from the four counties of Taishan (台山), Enping (恩平), Kaiping (開平), and Xinhui (新會), an area situated southwest of the Pearl River Delta region towards the coast, and who speak the Seiyap group of Cantonese dialects which are mutually unintelligible with Standard Cantonese (see Figure 2, Map of Guangdong and Guangxi). The number of people reporting Seiyap as the home language is 47,053 which makes this group the smallest of the five Chinese ethnolinguistic groups of Hong Kong.

T'sou's third ethnolinguistic group is Chaozhou (or Chiuchow or Teochiu), that is, people from Chaozhoufu (潮州府) in eastern Guangdong Province. Chaozhou dialect belongs to the Southern Min family of Chinese dialects and is mutually unintelligible with Cantonese. The Census table

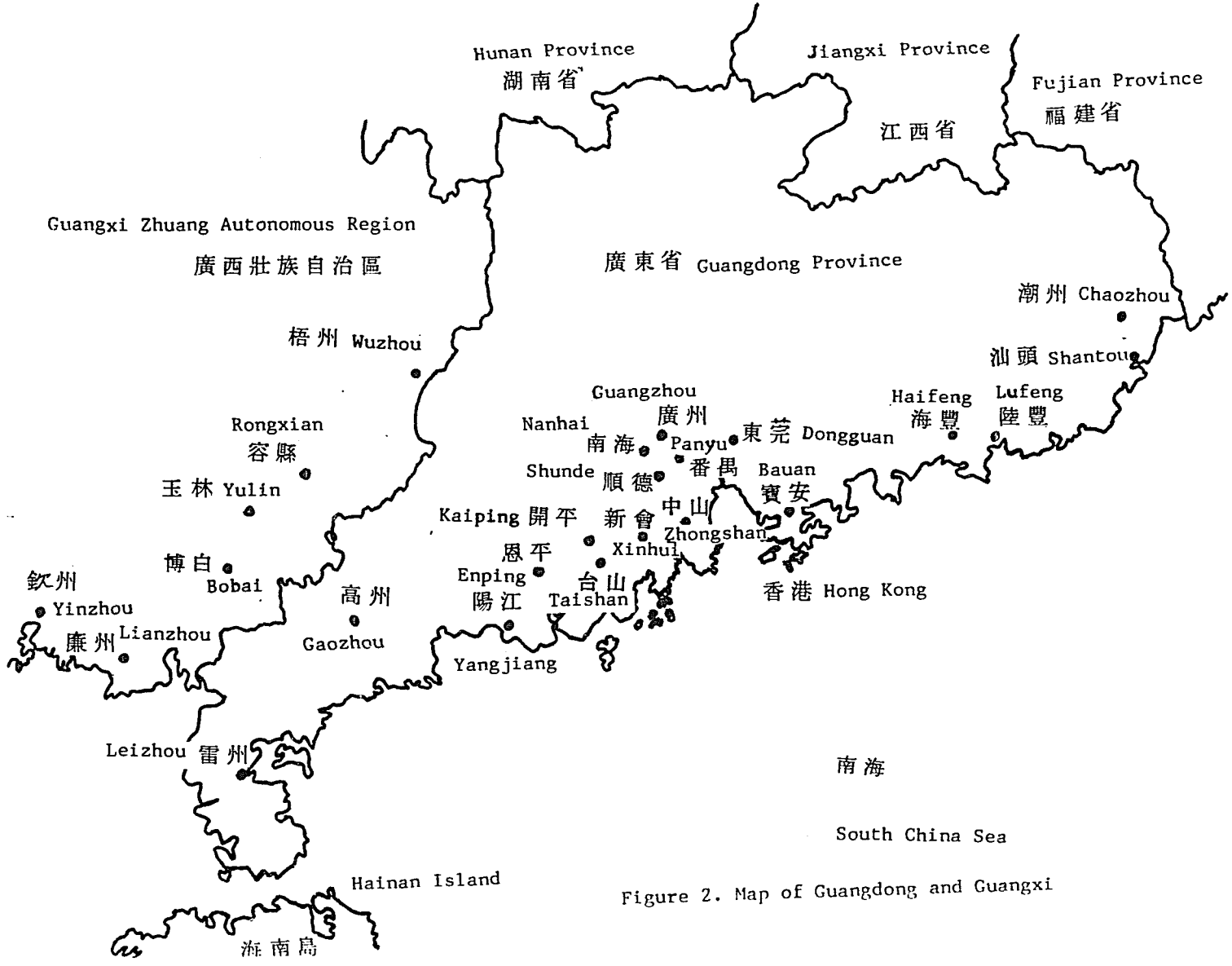


Figure 2. Map of Guangdong and Guangxi

used the term "Hoklo" which encompasses Chaozhou speakers, and Hoklo and Chaozhou dialects are mutually intelligible. The term "Hoklo" (福佬) SC /hǒk lóu/ means "the Hok men" and the word "hok" is the Cantonese approximation of the Hoklo dialect pronunciation of 福 SC /fûk/ in 福建省 "Fujian Province," the province of origin of many Hoklo people. According to subjects I interviewed in Hong Kong, however, there are many Hoklos in Hong Kong who are from Guangdong Province. In my second year in Hong Kong I lived in the village of Yungshuewan (榕樹灣) on Lamma Island (南丫島) which lies southwest of Hong Kong Island (see Figure 1, Map of Hong Kong) and is forty minutes by ferry boat from Central. I became acquainted with several young men and a young woman who identify their ethnicity as Hoklo. They had been born and raised on Lamma, attended school in Hong Kong, and have grown up speaking Cantonese although several claim some knowledge of Hoklo dialect. Five of these young people were interviewed and have been used as subjects. They told me that their parents had been part of a large migration in the early 1950's to Hong Kong from the Hoi Lukfung (which is the abbreviated form used in speech to refer to the two cities of 海豐 SC /hói fûŋ/ and 陸豐 SC /lǔk fûŋ/) area of Guangdong Province which is in the eastern part of the province near the coast and about midway between Hong Kong and Swatow (汕頭). These people had originally been fishermen but took up farming when they came to Lamma. According to the Census, there are 107,979

people who report Hoklo as the language of the home and also claim Chaozhou as their place of origin; there are 262,683 people who claim Chaozhou as their place of origin but report Cantonese as their home language. This number is more than double the earlier figure of Hoklo dialect speakers and, as my Lamma subjects bear witness to, indicates a trend of language assimilation taking place among the younger Hong Kong-born generation.

According to T'sou, many of the Hakkas in Hong Kong have come from Baoan (寶安) in Guangdong Province which is just over the border from the New Territories. The Hakkas regard themselves as a distinct ethnolinguistic group, and Hakka clans in the New Territories can trace their genealogies back several hundred years when their ancestors first arrived and settled the area. Hakkas in Hong Kong are the second largest group to maintain their language in the home and number 104,284. Hakka dialect constitutes a separate major family of Chinese dialects.

T'sou coined the term "Out-of-Staters" to refer primarily to people who speak either Mandarin or Shanghainese, two broadly encompassing families of Chinese dialects which are mutually unintelligible. The Out-of-Staters are the third largest group to preserve their home language and number 89,515 on the basis of the 1971 Census.

The Basic Cantonese group from Hong Kong, Canton, Macao, and other areas of Guangdong and Guangxi is the majority ethnolinguistic group of Hong Kong, while the Seiyap,

Chaozhou/Hoklo, Hakka, and Out-of-Staters are the minority ethnolinguistic groups. T'sou has observed that among the minority groups, the Seiyap people rank lowest in numbers of people who claim a particular place of origin and speak the language of that place in the home. While there were 42,346 people who reported Seiyap as the home language and claimed Seiyap as their place of origin, 632,174 people claimed Seiyap as their place of origin but reported Cantonese as their home language. This figure represents 18% of the total Cantonese-speaking population (632,174 ÷ 3,456,418) which indicates the Seiyap group in Hong Kong has undergone the greatest degree of "language shift" of any of the minority groups (T'sou 1976:6).

2.1.1 Classification of Cantonese Dialects

On the basis of the wide divergence of their phonological systems resulting in mutual unintelligibility, two main groups of Cantonese dialects were recognized by the 1971 Hong Kong Census: Standard Cantonese based on the Guangzhou dialect and Seiyap. Each of these main groups, however, is by no means homogeneous; for example, explanatory notes accompanying the Census table indicate that the Cantonese category includes the Tanka (蛋家, pejorative) of the Hong Kong Boat People (水面人, the name used by the people themselves) which shows many phonological differences with Standard Cantonese and of which there is more than one variety (McCoy 1965:46-64).

I assume that all non-Seiyap Cantonese dialects were categorized under the Cantonese group; this would include such dialects of Cantonese as Dongguan (東莞), Bauan (寶安), and Zhongshan (中山), to name a few in the region which differ from Standard Cantonese but are regarded as similar enough to be classified with it.

Yuan Jiahua's 漢語方言概要 has identified five main categories of Yue (粵) or Cantonese dialects:

1. Coastal Yue (粵海系): spoken in a large area of the Pearl River Delta which includes Guangzhou, Panyu (番禺), Nanhai (南海), Shunde (順德), the so-called Saamyap or three counties (三邑) region to which Standard Cantonese is tied, and an area along the West River (西河).
2. Yin-Lian Group (欽廉系): spoken in the area between Yinzhou (欽州) and Lianzhou (廉州) in the southeastern coastal region of Guangxi Province.
3. Gao-Lei Group (高雷系): spoken in the area between Gaozhou (高州) and Leizhou (雷州) in the extreme southwestern part of Guangdong Province.
4. Seiyap Group (四邑): spoken in the area which covers Taishan (台山), Xinhui (新會), Kaiping (開平), and Enping (恩平) in an area southwest of Guangzhou and near the coast of the South China Sea.
5. Southern Gui Group (桂南): spoken in the area which includes Wuzhou (梧州), Rongxian (容縣), Yulin (玉林 or 郁林), Bobai (博白), and other areas in the southeastern

part of Guangxi Province (Yuan 1960:179). In this classification system, the Coastal Yue Group to which the Standard Cantonese of Guangzhou belongs represents the eastern branch of the Yue family.

2.1.2 Hong Kong Standard Cantonese

Since the beginning of contact between Europeans and Chinese on the South China Coast, Guangzhou has been the political, economic, and cultural center of this area. Consequently, the Guangzhou dialect has been regarded as the prestige language of learning. The high status of Guangzhou dialect extended to Hong Kong as soon as Chinese people began to settle in Hong Kong. Today Hong Kong people look upon it as the standard form of their speech. The one publication transcribing Cantonese pronunciation and classifying Chinese characters by their pronunciation which has held sway among Cantonese-speaking educated people in Hong Kong ever since it first appeared a little over 40 years ago has been S. L. Wong's (黃錫凌) A Chinese Syllabary Pronounced According to the Dialect of Canton (粵音韵彙 廣州標準音之研究) first published in 1941. It has been used by the Hong Kong Curriculum Development Committee to establish the standard form of Cantonese pronunciation taught in Hong Kong schools. Most recently, the Chinese Language Research Centre of the Chinese University of Hong Kong in an effort to help people correctly pronounce unfamiliar words has produced a

cassette tape recording of the pronunciation of Standard Cantonese and a handbook based on S. L. Wong's syllabary and has packaged them along with a new 1980 edition of Wong's syllabary for commercial marketing in Hong Kong (Wu 1980).

In view of the geographical, political, economic, and cultural distances separating Hong Kong from Canton, we may reasonably question to what extent the Cantonese of Hong Kong is the same as that of Canton or Guangzhou. We recognize close personal ties exist between the two cities. Every year tens of thousands of Hong Kong's residents take advantage of two daily, nonstop direct trains, frequent hover ferries, and airline flights to go back to Guangzhou and their native villages to spend the traditional Chinese holidays. However, the linguistic consequences of this interaction on the speech of the two communities are unknown. My belief is that Hong Kong and Guangzhou are two unique speech communities. While there is no question that the people of both places speak Cantonese, there must be remarkable differences between the two varieties. I have been told by people in Hong Kong who have paid attention to the matter that Cantonese spoken by Hong Kong people contains much more slang and transliterated words borrowed from English than the Cantonese of Guangzhou. Guangzhou residents, on the other hand, use more swear words in their speech than Hong Kong people. It also includes more expressions borrowed from Mandarin (but pronounced in Cantonese) than Hong Kong Cantonese.

Another important influence on Hong Kong has been population movement from China into Hong Kong. As stated earlier, Hong Kong has absorbed a tremendous number of legal and illegal immigrants from China in the past ten years. It has been estimated that between 1977 and the fall of 1980 almost 400,000 illegal immigrants from China slipped across the border into Hong Kong. A little over half or 212,000 evaded capture by the police and melded into the community while the remainder were caught and repatriated to China (Rao 1981:145). Some Hong Kong residents with whom I have spoken about this problem believe the Hong Kong Government's estimate has understated the actual numbers of illegals. At any rate, they come from all parts of China, but the majority are from the rural areas of Guangdong Province. This influx of people speaking varieties of Cantonese different from Standard Cantonese of Hong Kong must influence its development, but what the contribution is to this process remains a mystery.

2.2 Phonological Variables

As described in the introduction to this study, my interest in Hong Kong Cantonese sound change began originally with four phonological variables I had observed in the speech of acquaintances, viz., kw-/k- before /o/; ŋ-/Ø-; ŋ/m̩; and -ŋ/-n. After my return to Hong Kong in 1979, I discovered three more phonological variables and included them with the others for investigation. These additional variables are

described as follows: First, for some speakers words with /w-/ initial have a fricative initial variant which ranges from a voiceless bilabial fricative /ɸ-/ to a voiced labiodental fricative /v-/. For example, 活 SC /wǔt/ "living" was heard as /vǔt/, 互 SC /wǔ/ "mutual" as /vǔ/, and 弧瓜 SC /wù/"parenthesis" as /vù/ for those speakers who had the most heavily fricativized labial initial. Second, although in Standard Cantonese there is a distinction between /n-/ and /l-/ initials, however, for many speakers, particularly younger people, /n-/ has merged with /l-/, that is, speakers use /l-/ instead of /n-/ but not the reverse. For example, many people can be heard on the streets of Hong Kong saying /lëi/ for 你 SC /nëi/ "you" (rhymes with 李 SC /lëi/ "a surname"); /àu läai/ for 牛奶 SC /ŋàu näai/ "milk." While many people have no distinction between /n-/ and /l-/, their speech may show variation between the two with a tendency to pronounce /n-/ words with /l-/ even though they hear no difference between them and cannot make one either. I included the n-/l- variable to attempt to determine what patterns characterized its use. Third, I found that the word 佢 SC /k'öey/ "he" had a variant form /höey/ for some speakers. The word 佢 is the Cantonese colloquial expression for the third-person singular pronoun. I have not been able to determine the ancient Chinese initial for 佢 since the word does not appear in 廣韵 . However, if it had the same initial as 拒 and 距 which are also pronounced /k'öey/ in Standard Cantonese, then the reconstructed initial for 佢 is *g-

(群母) which has become a devoiced, aspirated velar stop /k'-/ in modern Standard Cantonese. If this is the case, then the acquisition of the /h-/ variant by 佢 represents a deviant development in relation to other words belonging to the Ancient Chinese *g- initial category. On the other hand, there is a group of words belonging to the Ancient Chinese *k'- (溪母) initial category which has developed /h-/ initial in modern Standard Cantonese, e.g., 可 SC /hó/ "can," 肯 SC /háŋ/ "willing," 口 SC /háu/ "mouth," 客 SC /hāak/ "guest," 空 SC /hûŋ/ "empty," and 看 SC /hōn/ "to look at." The /hœ̈y/ variant may have arisen as a result of being associated with this group of words indicating that /k'-/ → /h-/ is an ongoing change. I will not be able to say any more than this on the origin of the /hœ̈y/ variant for 佢 but hope to be able to say something about the speakers who use the variant in a future article.

Because of limitations of time and space, findings on only two variables, kw-/k- and ŋ/m̩, are described in detail in this dissertation. However, I plan to discuss them all in future work.

2.3 The Interview Questions

Following the format of previous sociolinguistic studies, I developed an interview schedule that consisted of two parts: a spontaneous speech section whose purpose was to produce spontaneous, casual speech, and a controlled section whose purpose was to elicit from the subject his reading

pronunciation of a selected set of words representing the phonological variables under investigation and the subject's attitudes about his own speech and Standard Cantonese of Hong Kong. With the help of my Cantonese tutor, Mr. Lui Man-hou (雷文浩), a first-year Chinese University student, I prepared over the summer of 1980 the following research instruments: a set of questions to be asked of the subject in both the spontaneous and controlled sections of the interview; an original short story written in colloquial Cantonese of about 820 Chinese characters to be read by the subject; and a subject data sheet (or questionnaire) on which the subject recorded personal, social, educational, and linguistic information. Many of the questions asked in the interview were based on questions used by previous sociolinguists and listed in Labov's The Social Stratification of English in New York City (1966), Shuy et al.'s Field Techniques in an Urban Language Study (1968) which was particularly helpful in the preparation of the subject data sheet; and Trudgill's The Social Differentiation of English in Norwich (1974). The questions selected from these earlier studies were translated into colloquial Cantonese and adapted to the Hong Kong setting. A complete list of the Cantonese questions which were used in the study is found in the appendix. Some of the questions included the following: Is Hong Kong a good place to live? What do you like about Hong Kong? What do you dislike about Hong Kong? Where did you grow up? Do you ever go back to your old neighborhood? How

has it changed since you moved away? Where do you live now? Do you like to live there? Is there anything you would like to change about your neighborhood? Would you rather live some place else in Hong Kong? Have you ever lived or traveled abroad? Have you ever thought about moving to another country to live? Do you follow the affairs of the Hong Kong Urban Council? Are there enough parks and playgrounds in the neighborhood? What part of Hong Kong is the liveliest? What kind of work do you do? Do you like your work? Does your family have any unusual customs they follow in celebrating the Chinese New Year which other families might not have? Have you taught your daughter how to make Chinese glutinous rice dumplings for the Dragon Boat Festival (asked of mothers who say they make their own rice dumplings)? Do you have a group of special friends you like to do things with? Do you like to bet on the horses at Happy Valley or Shatin? Have you ever won any money betting on the races?

Questions asked students included these: Do you ever play tricks on the teacher? Who is the smartest kid in your class? Is there anybody in your class who is really dumb? What time do you go to school? What time does school let out? Do you want to go abroad to study at a university? Do the kids in your school ever get in fights? What are the things they fight about? Have you ever had a teacher who was really mean to students? Have you ever had a teacher you really liked? What was he or she like? Why did you like him

or her?

Some questions taken from previous sociolinguistic studies and translated into colloquial Cantonese were found not to elicit positive responses from a few subjects but actually encountered the subject's resistance; e.g., Have you ever been in danger of death? Have you ever been accused of something you didn't do? Have you ever been in a fight? This is not to say these questions were of no use in getting answers from subjects; in fact, the danger of death question produced several good, animated narratives. Apparently, these questions, particularly the danger of death question and have you ever been accused of something you didn't do, touch on culturally sensitive matters that many people prefer not discussing with a stranger.

Some of the interview questions were original ones to this study and arose from knowledge about life in Hong Kong. For example, Hong Kong's construction industry has been enjoying boom times and construction work continues around the clock. An unfortunate consequence of this frenetic activity has been an astounding number of fatal accidents on construction sites. During the two years I was there it seemed to me that newspapers carried daily reports of construction workers falling off catwalks, being electrocuted, crushed by steel beams, or buried alive. A series of questions were developed to ask construction workers about the causes of construction-site accidents and personal experience with such accidents. (This question revealed that

on many construction sites workers who believe in traditional Chinese religion maintain shrines where they pray for their safety). Gambling, particularly betting on horse races and playing majong, is one if not the most popular pastime of young and old people in Hong Kong. Several questions about gambling were prepared to ask those subjects who like to gamble and were quite successful. In addition, campling and hiking are probably the two most popular outdoor activities enjoyed by young people and constituted useful topics of conversation.

Questions asked about language included these: Do you think your pronunciation of Cantonese is standard? Have you ever tried to change your pronunciation of particular words? For instance, have you ever had the experience of hearing someone else's pronunciation, and because you thought he was right, you changed your pronunciation to be like his? Do you like the way you speak Cantonese? Do you like the way Hong Kong people speak Cantonese? Do you think they use too much slang or expressions from the underworld? Do you think there is any difference between the way Hong Kong people speak Cantonese and people in Canton speak Cantonese. Do you think there is such a thing as "Standard Cantonese"? Who speaks Standard Cantonese in Hong Kong? Do you know anybody who speaks Chaozhou, Taishan, Shanghai, or Hakka dialects? Do you ever have trouble understanding what they say? If you come upon a word you don't know how to pronounce, what do you do?

In addition to be being asked questions, subjects were presented with several research instruments and asked to name items--in the case of the Hong Kong money card, and read written instruments--a Cantonese nursery rhyme, story, a multi-morphosyllabic word list (each item consisted of two or more Chinese characters), a mono-morphosyllabic word list (each item was one Chinese character), and a minimal pair word list (each item comprised a pair of single Chinese characters). All these elicitation instruments are reproduced in the Appendix.

2.4 Research Instruments

1. Hong Kong Money Card

The first instrument presented to the subject following the question-and-answer (spontaneous speech) section of the interview was the Hong Kong money card and his task was to name each of ten pieces of Hong Kong money attached to the card. Three pieces of paper currency and seven coins were affixed to a piece of heavy paper and covered with plastic. The $50, $10, $100 bills were attached to the upper half of the card and the 5¢, 10¢, 20¢, 50¢, $1.00, $2.00, and $5.00 coins were glued to the lower half of the card. Three of these ten items could be expected to elicit the subject's pronunciation for "five"--/ŋ̈/ or /m̈/, i.e., the $50 bill and the $5.00 and 50¢ coins. The word for "five" might occur a fourth time depending on whether or not the subject said /ŋ̈ sîn/, /táu líŋ/ or both for the 5¢ coin. The second

name is the common colloquial Cantonese expression most often used by speakers and speakers typically gave one or the other and sometimes both. If the speaker said /táu líŋ/ sometimes he could be prompted to give the alternative name with five when asked if the coin had another name. This task of naming the pieces of money provided an additional opportunity for the subject to use the n/m variable which was quite helpful in the case of subjects who did not use it or used it with low frequency in the first half of the interview.

2. Cantonese Nursery Rhyme

The second instrument given the subject was a Cantonese nursery rhyme of about 100 words which was taken from Gao Huanian's (高華年) Kwong Tsau Fong Yin Yin Kau (廣州方言研究) (Gao 1980:378-380). Most subjects recognized this nursery rhyme as one they sang as children, but many claimed that the version from their childhood was quite different from the one they were asked to read. When this type of situation arose, I suggested that the subject read it as he remembered it by reading the version before him and making changes wherever appropriate if he so desired. The purpose of the nursery rhyme was to determine the subject's pronunciation of 牛 SC /ŋàu/, 屋 SC /ûk/, and 光 SC /kwôŋ/ which represented two of the phonological variable categories of kw-/k- and ŋ-/Ø- which were being investigated.

3. Cantonese Story

After reading the nursery rhyme, the subject was asked

to read an original short story written in colloquial Cantonese and containing about 820 Chinese characters. In this story the storyteller reminisces about family customs and his childhood experiences of the Chinese New Year in Taishan. Distributed throughout the story are a number of lexical items which belong to the phonological variable categories of the study.

4. Multi-character Word List

The fourth instrument was a word list of 30 lexical items in which each item comprised two or more characters. This instrument focuses for the first time the informant's attention on the pronunciation of individual words which itensifies the formality of the interview. Some subjects, however, have shifted to their formal pronunciation at some point in the reading of the story so they are ready for the first word list. All 30 items in the first word list elicit the phonological variables.

5. Single Character Word List

The fifth instrument is a mono-morphosyllabic word list of 42 items. Included among the Chinese characters are a few Cantonese characters recognized by most subjects.

6. Minimal Pair Word List

The interview concluded with a minimal pair word list of 33 pairs of single Chinese characters. The subject is asked to pronounce each item of the pair and say if they are the same or different. Each of the phonological variables under study was represented by at least one item in this minimal

pair test.

2.5 Pilot-test of the Interview Questions and Instruments

Before the formal interviewing process was begun, the interview questions and elicitation instruments were pilot-tested with 16 subjects. Following this pilot-test, the money instrument which had not been included in the pilot-test was added to the interview schedule in order to increase the number of times that the syllabic nasal variable would occur in the interview. The pilot-test revealed that in the spontaneous speech section its incidence was relatively low or did not occur at all for some subjects. In addition, the number of lexical items in the single-character and minimal pair word lists was increased slightly. The interview questions, story, and nursery rhyme were well-received by the pilot-test study subjects and no changes were required in them.

2.6 Subject Data Sheet

Taking Shuy's Informant Data Sheet reproduced at the end of Chapter Five in his Field Techniques for an Urban Language Study as a starting point, I adopted some of his items for my own subject questionnaire, translated them into written Chinese, and added some of my own items to produce a Subject Data Sheet whose purpose was to record various kinds of information about the subject. Three different Subject Data Sheets were prepared: one for students, one for the

parents of students, and one for other subjects. The subject was asked to record on the form the following information: name; sex; age; address; telephone number; place of birth; age at time of arrival in Hong Kong if born outside of Hong Kong; highest level of education completed; father's and mother's places of birth; father's and mother's highest levels of education completed; father's and mother's occupations; type of dwelling in which the subject and his family live (i.e., privately owned or rented unit, low-rent unit, unit in a company-provided dormitory, unit in a Hong Kong Government low-rent estate, unit in a squatter area, unit in a Hong Kong Government-provided dormitory); knowledge of other Chinese dialects (e.g., Mandarin, Shanghai, Taishan, Xinhui, Dongguan, Chaozhou, Hakka, Sanshui, Shunde, Zhongshan, Shiqi, Heshan); the language commonly spoken in the subject's home; and the time when the subject would be available for an interview with the researcher (requested on the student and parent questionnaires only).

2.7 Selecting the Sample

The most difficult part of the research project was recruiting subjects for the sample. The problem was to find a means to select subjects who were representative of the Hong Kong speech community and who would produce a stratified random sample. Labov's New York City study was based on a portion of a preselected sample which had been randomly chosen in an earlier sociological study and therefore

met the rigid criteria of scientific sample selection. In my case there naturally was no preselected sample and I had to produce my own. As stated earlier, the only way a research design has external validity is if the sample being studied is genuinely representative of the population from which it is drawn (Isaac and Michael 1971:34-35). One criterion of sample selection is that the members of the sample be randomly chosen. Obviously, if only the researcher's neighbors are chosen as subjects in the sample, it cannot be representative of a large, diverse community. One problem in selecting a random sample is that it presupposes the researcher has access to all the names of individuals in the community and can select at random as many subjects as he needs. A telephone directory constitutes such a list of names but it has its drawbacks, e.g., not everyone has a telephone and not all numbers are listed. At the time I was recruiting subjects for my sample, limitations of time, manpower (I selected and interviewed the sample by myself), and resources required some compromise, and the sample which was selected can best be termed a judgmental sample.

Since social class is one of the independent variables of the study, it was necessary to develop a measure for determining a subject's social class. Shuy et al. developed a procedure of social classification based on a method described in August Hollingshead's Social Class and Mental Illness (1958). Social class is assigned to a subject on the basis of occupation, educational level, and location of

residence. Each of these categories is numerically weighted to produce a social class scale of seven ranks. Originally, I had planned to adopt a similar procedure and designed the Subject Data Sheet to collect the required information. I had hoped to collate this data with studies on social class in Hong Kong. Unfortunately, social class has not been a concern of sociologists in Hong Kong. Recognizing that the construction of a social class index for Hong Kong which would take into account an occupational scale, educational level, and ranking of neighborhoods would be a time-consuming and complex task, I therefore chose the simplest measurement of social class--the highest level of formal schooling completed by the subject. I have assumed that a person's educational level strongly correlates with his occupation which in turn correlates with his social class. On the basis of their schooling, subjects in the study have been categorized into three main educational levels which will be described fully in a following section, "Composition of the Hong Kong Sample."

To select subjects for the sample I adopted the method used by Shuy et al. in their Detroit study--gaining entrance to the community via the schools. With the help of two friends, I was able to visit three schools and distribute 381 student questionnaires to middle school students along with an equal number of parental questionnaires which the students were asked to give to their parents to fill out. Accompanying the parent's questionnaire was a cover

letter explaining the purpose of the project and requesting the parent to provide assistance to the project by agreeing to be interviewed, filling out the questionnaire, indicating a convenient time at which the interview could be scheduled and the researcher come to the parent's home or some other place to conduct the interview, and having his or her son or daughter return the questionnaire to the school principal. In early spring of 1981 a friend who teaches at a school near the University of Hong Kong introduced me to his principal who allowed me to come to her school and distribute questionnaires to 136 form-four students. Out of the 136 questionnaires given out, 21 parental questionnaires were completed and returned to the researcher; seven students and three parents were successfully interviewed and used as subjects in the study. Four teachers at this school were also interviewed and used as subjects. In addition, through the assistance of Prof. Tony Marsh in the School of Education at the University of Hong Kong (who was also my neighbor on Lamma Island), I was able to visit two other schools and distribute about 250 questionnaires. I had discussed my research project with this professor, and he suggested I visit two schools whose principals he knew as his former students. He first described to the principals the purpose of my project and secured their permission for me to come and request the assistance of students and their parents for the project. In April I visited a school in Stanley which is attended by students

who are mostly from middle to upper middle class families and distributed 146 questionnaires to students. There were 42 returned parental questionnaires and 9 parents were successfully interviewed and used as subjects. In May I visited a school in Kowloon and distributed 99 questionnaires to form-three students. According to the principal, the families of students at her school were largely working class. There were 65 parental questionnaires returned, but 26 of these indicated no willingness or time for an interview. Four parents were successfully interviewed and used as subjects. In addition to interviewing the parents of students of this school, I also interviewed the school principal and three teachers who have all been used as subjects.

In selecting parents for interviews, I used the following procedure: after the completed parental questionnaires had been returned to me, I looked through them and pulled out all those of parents who had been born in Hong Kong or had come at age 10 or before. I then sent a letter to this parent informing him or her that he or she had been selected to be interviewed and that I would call on the telephone within a few days to set up an interview appointment. (A copy of this letter appears in the Appendix). When I made the phone call, I identified myself, explained my purpose, and requested the person's assistance for the project. This method proved successful in obtaining 23 subjects, but it was not particularly cost-effective in

terms of time expended in recruiting subjects and the physical and psychological price paid by the researcher. Even though a parent might have indicated on the questionnaire a willingness to be interviewed, I found that often upon calling this potential subject that he or she had changed his or her mind or was so suspicious about the purpose of the interview as to decline to be interviewed. In fact, for many of the parents who were interviewed, I had to make an extremely convincing case why he or she should consent to be interviewed. I also had to assure several people that I was not selling something. Meeting with refusal, resistance, and suspicion made this part of sample selection to be the most stressful stage of the process. After the interview had been scheduled, there was still the problem of carrying it through. Sometimes the person was not at home at the appointed time or was still suspicious to the point of not being cooperative and only replied with short or one-word answers to the questions. The resistance encountered along the way in recruiting parents for interviews had a self-selecting influence on the final outcome: those subjects who were selected to be interviewed on the basis of information supplied on the Subject Data Sheet (or questionnaire) and then were successfully interviewed and ultimately used as subjects tended to be the ones who were the most cooperative with the interviewer during the interview by replying to the questions and reading the research instruments (this was not entirely true for two parents who had to be coaxed into

reading the story and word lists).

In addition to going through the three schools to find subjects, I also made use of another method,i.e., the judgmental selection of friends, people referred to me by friends, people with whom I came in contact on a daily basis at the University of Hong Kong where I was a visiting scholar, and people I met on the streets of Hong Kong who were so curious about me that they were willing to come up and talk to me. My main concern was to choose subjects who would produce sufficient diversity in the ages and social class backgrounds of the population sample. However, since none of these subjects were randomly selected, some cells in the independent variable matrix have been filled with more than the minimum four or five subjects suggested by Labov as providing sufficiently reliable data for a sociolinguistic study. Even though some cells are overfilled, particularly those filled by people between the ages of 15 and 30, this actually has the positive effect of assuring the reliability of the data based on these subjects. Conducting interviews with the subjects who had more or less volunteered because they knew me and were willing to assist me in the research project was not only a pleasant experience, but it was also linguistically quite productive in that these subjects replied to my questions at length and with enthusiasm. My experience confirms a statement of Labov: "Our best informants will eventually be people we have come to know very well . . ." (Labov 1972a:13).

All 75 interviews were conducted by this researcher and were tape recorded on a portable Aiwa Mimorec TP-12 cassette recorder (which was operated on six-volt batteries) using a Piezo lavaliere microphone (which operates on a 1.4 volt microbattery).

2.8 Composition of the Hong Kong Sample

Table 3, "Social Characteristics of Subjects: Sex, Age, Occupation, and Years of Formal Schooling" which follows below indicates the distribution of the sample population with respect to the two independent variables of sex and educational level. The ages and occupations of subjects are also given. Numbers in parentheses are the identification numbers assigned to subjects. The table classifies subjects into seven categories by educational level: I, 16 years (i.e., a university degree); II, 13 to 15 years (which indicates advanced or technical training); III, 12 years (high school, form six); IV, 11 years (high school, form five); V, 10 years (high school form four); VI, 9 years (middle school, form three); and VII, six years or less (elementary shcool or below).

As Table 1 shows, the majority of subjects with university degrees in category I with 16 years of schooling are employed as school teachers: seven (eight, if the school principal is included) out of 11 subjects teach school. This category also includes a 24-year-old male

Table 3. Social Characteristics of Subjects: Sex, Age, Occupation, Years of Formal Schooling (Subjects identified by Subject Identification Number)

I 16 years (university degree)	II 13-15 years (technical/ adv. training)	III 12 years (high school, form 6)	IV 11 years (high school, form 5)	V 10 years (high school, form 4)	VI 9 years (middle school, form 3)	VII 6 years or less (elementary school)
FEMALES						
23-teacher (51) 25-teacher(57) 26-teacher(58) 28-teacher(60) 35-school prncpl(66) 68-retired bsnswmn(75)	22-sectry(49) 24-teacher(53) 26-accounting asst (59) 28-librrn(61)	23-typist(50) 29-univ. dept. sectry(62) 40-housewfe(68)	16-student(44) 18-student(47) 24-typist(52) 24-typist(54) 25-typist(56) 25-office custdn(55) 35-housewfe(65)	16-student(45) 37-housewfe(67)	18-sprmkt stocker(48) 30-ofc machn oprtr(63) 73-retired bsnswmn(76) 75-retired nurse(77)	35-housewfe(64) 42-housewfe(69) 42-housewfe(70) 44-housewfe(71) 47-housewfe(72) 47-housewfe(73) 52-housewfe(74)
MALES						
24-grad std(23) 27-teacher(28) 28-teacher(30) 34-teacher(32) 40-laboratory techn(35)	24-univ dorm maintenance worker(24) 26-enginr(25) 27-advertisng artist(29)	18-student(11) 20-student(17) 20-student(18)	16-student(4) 18-student(10) 21-ofc clk(20) 36-ofc clk(33) 37-ofc clk(34) 44-housing est mgr(37) 49-self-empld bsnsmn(39) 51-bank clk(40)	16-student(2) 16-student(3) 16-student(5) 17-student(6) 17-student(7) 18-student(9) 20-film devlpr(16) 27-air condng mtnc wkr(27)	15-construction worker(1) 19-construction worker(14) 19-construction worker(15) 19-ofc boy(13) 21-barber(19) 23-furniture painter(22) 30-ofc clk(31) 55-salesclk(42) 60-apt bldg watchman (43)	18-construction worker(8) 18-construction worker(12) 26-welder(26) 44-porter(36) 45-dock wrkr(38) 52-bank manual worker(41)

graduate student at the University of Hong Kong, a 40-year-old laboratory technician who graduated from a university in Taiwan and works in a hospital, and a 68 year-old retired businesswoman who was a graduate of the University of Hong Kong.

Educational category II includes subjects with 13 to 15 years of schooling, i.e., two or three years of technical or advanced training beyond form five. In this group are found an advertising artist, engineer, and secretary who are all graduates of three-year programs at the Hong Kong Polytechnic. The 24-year-old female teacher attended a teacher-training school (師範) but is not at the university level. The 26-year-old female accounting assistant attended forms 6 and 7 and passed the Institute of Chartered Secretaries and Administrators examination after four years of part-time study. The 28-year-old female librarian received a Certificate of Librarianship from the Hong Kong Extramural Studies Program and completed a course in computer programming at the University of Hong Kong Computre Centre. The 24-year-old university maintenance worker attended a technical school for skilled mechanical training.

Category III, 12 years of formal schooling, includes three women who have completed form 6 of high shcool; one is a 23-year-old typist; one is a 29-year-old university department secretary; and the other is a 40-year-old housewife. The three male students in this group are currently enrolled in form 6.

Category IV, 11 years of formal schooling, includes 11 working subjects who have finished form 5 and four students currently enrolled in form 5. Two occupations predominate in this group: there are three female typists and three male office clerks. The oldest female subject is a 35-year-old housewife, and the oldest male subject is a 51-year-old bank clerk. This group also includes a 44 year-old male who is the manager of a housing estate and a 49-year-old self-employed businessman.

The majority of subjects, seven out of ten, in category V, 10 years of formal schooling, are students currently enrolled in form 4. This group also includes a 37-year-old housewife and two working males, aged 20 and 27, who are employed as a film developer and an air-conditioner maintenance worker, respectively.

Category VI comprises subjects who have all finished form 3 of middle school. Two of the four females are retired and over age 70; an 18-year-old female is employed as a supermarket shelf-stocker, and a 30-year-old female is an office machine operator at a university. Three male subjects, one 15 and two 19, are employed as construction workers; the group also includes a 21-year-old barber, a 23-year-old furniture painter, a 30-year-old office clerk, a 55-year-old salesclerk, and a 60-year-old building watchman.

All female subjects in category VII, six years or less of schooling, are engaged as housewives. Four of the subjects indicated on the questionnaires that they had completed

elementary school. One subject aged 44 had not attended school and could not read the instruments used in this study. Subject #72 aged 47 said she had attended some elementary school but was unable to read so she too did not attempt to read the story and word lists. The 52-year-old subject completed three years of elementary school and was able to read all the instruments. Among the males of this group, there are two 18-year-old construction workers, one completed elementary school and the other the fifth grade. The 26-year-old welder finished the fourth grade. The 44-year-old porter and the 52-year-old manual worker employed in a bank both finished elementary school. The 45-year-old dock worker completed four years of elementary school.

For the purposes of this study, these seven educational categories have been conflated into three main educational levels as follows: I, 14 to 16 years of schooling (combination of categories I and II); II, 11 to 12 years of schooling (combination of categories III and IV); and III, 0 to 10 years of schooling (combination of categories V, VI, and VII).

The 75 subjects range in age from 15 to 75 years old with 49 subjects or 65% of the total between the ages of 15 and 30. Table 4, "Subjects Categorized by Sex and Age into Four Age Groups," follows below and gives the ages and identification numbers of subjects who have been classified by sex and age into the four following age groups:

Table 4. Subjects Categorized by Sex and Age into Four Age Groups

Age Group A (15-22)				Age Group B (23-30)				Age Group C (31-44)				Age Group D (45+)			
Male		Female		Male		Female		Male		Female		Male		Female	
ID No.	Age	ID No.	Age	ID No.	Age	ID No.	Age	ID No.	Age	ID No.	Age	ID No.	Age	ID No.	Age
1	15	44	16	22	23	50	23	32	34	64	35	38	45	72	47
2	16	45	16	23	24	51	23	33	36	65	35	39	49	73	47
3	16	47	18	24	24	52	24	34	37	66	35	40	51	74	52
4	16	48	18	25	26	53	24	35	40	67	37	41	52	75	68
5	16	49	22	26	26	54	24	36	44	68	40	42	55	76	73
6	17			27	27	55	25	37	44	69	42	43	60	77	75
7	18			28	27	56	25			70	42				
8	18			29	27	57	25			71	44				
9	18			30	28	58	26								
10	18			31	30	59	26								
11	18					60	28								
12	18					61	28								
13	19					62	29								
14	19					63	30								
15	19														
16	20														
17	20														
18	20														
19	21														
20	21														

(Subjects 21 and 46 have been excluded because of incomplete interviews)

Age Group A, 15-22 years of age: 20 males, 5 females (25)
Age Group B, 23-30 years of age: 10 males, 14 females (24)
Age Group C, 31-44 years of age: 6 males, 8 females (14)
Age Group D, 45 years and over: 6 males, 6 females (12)

As mentioned previously, I restricted the sample population to subjects who were born in Hong Kong or came at age 10 or before. This criterion was imposed on subjects because I assume that those people born in Hong Kong have grown up speaking Hong Kong Cantonese unless they come from a family in which the language spoken in the home was not Cantonese, while those people born elsewhere, for example, Panyu or Taishan, grew up speaking the local dialects, such as that of Panyu or Taishan. By excluding those people born outside of Hong Kong from the study, I hoped to eliminate the bias of phonological characteristics inherent in other dialects which would be introduced by people who learned Cantonese after they came to Hong Kong as adults and retained dialectal features in their speech. This concern may have been unfounded, however, since Yeung (1980) who investigated the correlation between the use of the kw-/k- and n-/l- variables with the age and ethnicity of speakers concluded that a subject's ethnicity had no influence on which form of the variables the subject used. Yeung's study included T'sou's five categories of ethnolinguistic background which were described earlier in section 2.1, Hong Kong and the Hong Kong Speech Community. She was not concerned with the subject's place of birth but chose

subjects who were ". . . without any apparent accents when they spoke Cantonese . . ." (Yeung 1980:19). Nevertheless, it was my feeling that the social characteristic of birthplace had to be uniform for all subjects in order to make a valid comparison of their linguistic behavior; otherwise, if their birthplace were to vary from one subject to another, this would introduce birthplace as an independent variable which would have to be controlled in the study like the other independent variables of sex, age, and educational background. As a check on the influence of birthplace outside Hong Kong and arrival in Hong Kong as an adult on speech, I interviewed three middle-aged parents who have not been used as subjects. What I found was that their speech contained unusual nonstandard phonological features which I assume were characteristic of their native dialects. It was for this reason that I retained the criterion of birthplace in selecting subjects.

There were seven subjects out of the 75 who were not born in Hong Kong: four subjects were born in Guangzhou but came to Hong Kong at an early age: the 35-year-old school principal came at age 4; the 27-year-old male teacher came at age 6; and two 35-year-old housewives came at ages 9 and 10. A 30-year-old male clerk was born in Xinhui and came to Hong Kong at one-year of age. The 52-year-old bank manual worker was born in Panyu and moved to Hong Kong when he was 10. The 34-year-old male teacher was born in Bauan and also came at age 10. The 37-year-old housewife was born in Hong Kong, but she went back to Taishan (her family's

native village) at an early age, grew up there, and returned to Hong Kong at age 18. I found this out after I interviewed her and discovered that she has some interference from Taishan dialect in her Cantonese speech.

These three educational levels, four age groups, and two sexes produce an independent variable matrix of 24 cells. As mentioned previously, Labov's experience indicates that four or five subjects filling each cell can provide adequately representative linguistic data to be correlated with the independent variables of social characteristics of subjects. Following this criterion, the Hong Kong study with 24 cells would require a minimum of 96 subjects. However, as we will see later, not every cell needs to be filled and in some cases could not be filled or completely filled for various reasons. Table 5, "Distribution of the Sample Population (by identification numbers) in Independent Variable Matrix (by sex, age, and educational level) indicates how the subjects fill the three-independent variable matrix. As can be seen, some cells are overfilled (because subjects were not randomly chosen), some underfilled, and some unfilled. That cells 1 and 2 are unfilled is probably to be expected since it is unlikely there are any 15 to 20-year-old males and females with 14 to 16 years of schooling. The underfilled and unfilled cells reflect problems encountered in the field during the course of selecting subjects for the sample. These problems were both demographic and technical in nature. One problem in finding enough subjects who met the various

	MALES	FEMALES
I 14-16 yrs schooling	A (15-22 years of age) 1	A (15-22) 2 49
	B (23-30 years of age) 3 23 24 25 28 29 30	B (23-30) 4 51 53 57 58 59 60 61
	C (31-44 years of age) 5 32 35	C (31-44) 6 66
	D (45 + years of age) 7	D (45 +) 8 75
II 11-13 yrs schooling	A (15-22 years of age) 9 4 10 11 17 18 20	A (15-22) 10 44 47
	B (23-30 years of age) 11	B (23-30) 12 50 52 54 55 56 62
	C (31-44 years of age) 13 33 34 37	C (31-44) 14 65 68
	D (45 + years of age) 15 39 40	D (45 +) 16
III 0-10 yrs schooling	A (15-22 years of age) 17 1 2 3 5 6 7 8 9 12 13 14 15 16 19	A (15-22) 18 45 48
	B (23-30 years of age) 19 22 26 27 31	B (23-30) 20 63
	C (31-44 years of age) 21 36	C (31-44) 22 64 67 69 70 71
	D (45 + years of age) 23 38 41 42 43	D (45 +) 24 72 73 74 76 77

Table 5. Distribution of Members of Sample Population (by identification number) in Independent Variable Matrix (by sex, age, and educational level)

requirements of the sample matrix was created by the criterion that the subject be born in Hong Kong or came to Hong Kong by age 10. The effect of the Hong Kong birthplace criterion was to shrink the available pool of potential subjects over the age of 35 because the number of people born in Hong Kong and over the age of 35 is substantially less than those born outside of Hong Kong. Figures supplied to me by the Census and Statistics Department of the Hong Kong Government and based on the 1976 By-Census indicate that beginning at age 27 and as age decreases, the number of people born in Hong Kong exceeds the number born outside of Hong Kong. However, beginning at age 28, and as age increases, the number of people born outside Hong Kong exceeds, and increases as age increases, the number born in Hong Kong. So, for example, people aged 26 and born in Hong Kong (and who turned 31 in 1981) number 44,230, while the number born outside Hong Kong is 33,420. At age 35 (aged 40 in 1981) the number of people born in Hong Kong was 11,770, while the number born outside Hong Kong was 29,230. At age 40 (aged 45 in 1981) the Hong Kong-born population is smaller still at 11,070, while the number born outside Hong Kong was 38,600 (Census Main Tabulation 103, Whole population X place of birth X single year of age (under 1, 1-74, 75+) X sex, Hong Kong By-Census 1976, Main Report, Volume II: Tables).[2]

2.9 Linguistic Background of the Sample Population

With the facts presented in section 2.1 about the Hong Kong speech community in mind, let us look at the linguistic background of the study's sample. The Subject Data Sheet included two questions about language use which were answered by all 75 subjects in this study: First, in addition to Cantonese, can you speak any other dialect? If so, please identify it. Second, what language do you speak at home? When subjects answered the first question, many of them interpreted it in its broadest sense to mean "knowledge of another dialect" which could range from the ability to say a few words to the ability to carry on a conversation in that dialect. If the subject indicated that he or she speaks the dialect at home, then I take this as an indication that the subject has more than passive knowledge of that dialect. Subjects can be divided into six main categories according to their responses to the questions:

1. Speaks Cantonese at home and has no knowledge of any other dialect: 37 subjects
2. Speaks Cantonese at home and has some knowledge of Mandarin dialect: 14 subjects
3. Speaks Cantonese at home and, in addition to knowledge of Mandarin, also has knowledge of some other dialect: 9 subjects

   Mandarin and Dongguan: 3 subjects

   Mandarin and Taishan: 2 subjects

   Mandarin and Xinhui: 1 subject

   Mandarin and Shanghai: 1 subject

Mandarin and Shanghai: 1

Mandarin and Zhongshan: 1

Mandarin and Zhongshan, Hakka, Shiqi: 1

4. Speaks Cantonese at home and has knowledge of some other dialect: 11 subjects

Hoklo: 3 subjects

Hakka: 2 subjects

Taishan and Xinhui: 2 subjects

Zhongshan: 1 subject

Guangxi: 1 subject

Shunde: 1 subject

Dongguan: 1 subject

5. Speaks both Cantonese and some other dialect at home: 3 subjects

Cantonese and Hakka: 1 subject

Cantonese and Bauan: 1 subject (also has some knowledge of Mandarin, Hoklo, Shanghai, Xinhui, Chaozhou)

Cantonese and Mandarin: 1 subject

6. Speaks a dialect other than Cantonese at home: 1 subject

Hoklo: 1 subject

These dialects are listed below in the order of the frequency in which they were reported on the Subject Data Sheets:

Dialect	Number of Subjects
Mandarin	25
Hoklo	5
Taishan	4
Hakka	4
Dongguan	4
Xinhui	4
Zhongshan	3
Shanghai	2
Shunde	1
Shiqi	1
Bauan	1
Guangxi	1
Chaozhou	1

This survey of langauge use among the subjects in the sample reveals that half the sample speaks only Cantonese. The other half of the sample reports knowledge of 13 Chinese dialects. Only one subject does not speak Cantonese in the home but speaks Hoklo dialect; this was reported by one of the young men living on Lamma Island. The subject who says he speaks both Cantonese and Hakka at home came to Hong Kong at age 9 from Bauan in Guangdong, a Hakka-speaking area as noted earlier. The young woman who speaks both Cantonese and Mandarin as home languages was born in Hong Kong to parents who emigrated from Shandong Province in North China during China's Civil War. She said she grew up speaking

both Cantonese and Mandarin because her parents used both dialects when speaking to their children--if they thought the children did not understand the Mandarin, they would repeat in Cantonese. She now speaks both Mandarin and Cantonese with her Hong Kong-born husband whose family originally came from Guangdong Province. One subject reports speaking Cantonese and Bauan dialects with his family and the ability to speak Mandarin, Hoklo, Shanghai, Xinhui, and Chaozhou dialects. What he means by Bauan dialect is not clear to me; the subject also apparently distinguishes between Hoklo and Chaozhou dialects by marking both on the questionnaire. The subject who mentioned knowledge of Guangxi dialect probably means a Cantonese dialect spoken in Guangxi; he stated that he learned it as a child when he went back to Guangxi Province to wait out World War II.

The high number of subjects who report being able to speak Mandarin can possibly be attributed to their contact with this dialect primarily through the school and at the movies (movies from Taiwan and China are usually not dubbed into Cantonese but left in the original Mandarin). Some subjects said the way they learned Mandarin was from hearing it spoken in the movies.

The list of dialects listed above presents a linguistic picture similar to the one observed in Table 2 and discussed in Section 2.1 with Hoklo, Seiyap (Taishan and Xinhui), and Hakka dialects at the top of the list. Zhongshan and Shunde are more similar to Standard Cantonese than Dongguan dialect.

3.0 SC /ŋ/ → /m̩/

3.1 Introduction

In contemporary Hong Kong Cantonese the syllabic velar nasal occurs with three possible tone contours in the low tone register, i.e., 陽 tone associated with the Ancient Chinese voiced initial category, as follows (Hashimoto 1972:92):

1. ˩ 21 low falling tone
2. ˧˩ 24 low rising tone
3. ˨ 22 low level tone

A fairly large number of logographs belong to each of these tone categories according to Li Choming's (李卓敏) Mr. Li's Chinese Dictionary (李士中文字典) (Li 1980:115):

Table 1. Logographs belonging to SC /ŋ/ lexical category

ŋ̀ (low falling)	ŋ̋ (low rising)	ŋ̌ (low level)
吳 surname	五 five	誤 misunderstand
吾 I, me	午 noon	悞 allograph of 誤
蜈 centipede	伍 file of five men	悟 to understand
梧 name of tree	仵 an opponent	焐 keep smthg warm
鋙 name of a sword	忤 obstinate	晤 to meet
浯 body of water in Shandong	旿 midday	梧 well-built man
琅 beautiful jade	牾 to oppose	痦 mole, birthmark
鋙 allograph of 鋙	犂 allograph of 牾	寤 awake from sleep
唔 I	訐 allograph of 牾	迕 obstinante, to meet
鼯 flying squirrel	𠆢 ancient form of 'five'	旿 allograph of 晤
嵍 mountain in Shandong		痦 allograph of 痦
鄅 anc. city in Shandong		遻 allograph of 迕
峿 mountain in Shandong		
琊 allograph of 峿		

There is only one morpheme in Cantonese pronounced /m̩/ which means "no, not" and is usually written 唔. As a result of the change of SC /ŋ̩/ → /m̩/, the SC /ŋ̩/-category which has a high phonological load in terms of the number of morphemes belonging to it has lost members to the SC /m̩/-category which has a very small phonological load of only one member, but that one member in turn has a very high word frequency. What role--if any--does the negative morpheme play in this particular drama of phonological change? I believe SC /m̩/ has made the change of /ŋ̩/ → /m̩/ "acceptable" or "compatible" to Cantonese because /m/ already exists in the language and acts as an anchor for the change of /ŋ̩/ → /m̩/. The change introduces no new or heretofore nonexistent sound into the language but merely shifts lexical items from one phonological category to another. Consequently, I do not think it is only a coincidence that the SC /m/-category has only one member and can therefore conveniently accept new morphemes--despite the minor collision of homophony here and there which has resulted. This characteristic of the SC /m̩/-category may be particularly important to the change itself in that SC /m̩/ has provided the fertile soil in which the change of /ŋ̩/ to /m̩/ has been able to take root. The resulting homophony between the negative morpheme and a surname produced by the change of SC /ŋ̩/ → /m̩/ is discussed below.

Although the change of /ŋ̩/ → /m̩/ now underway in Hong Kong Cantonese has received no attention in the linguistic

literature, it has been noticed in the popular press of Hong Kong. Attracting the attention of newspaper writers has been the homophony between the surname 吳 SC /ŋ̀/ and the negative morpheme 唔 SC /m̀/ which has resulted from this sound change. In an article entitled "Picking Names for Children" (給孩子取名子) in the Ming Bao newspaper (明報), a writer mentions a young woman named 吳美麗 SC /ŋ̀ mëi lǎi/ who said that every time the teacher read out her name at school her classmates all broke into laughter. Her first name 美麗 is the word "pretty," so when the teacher pronounced her surname 吳 as /m̀/, what she said was the phrase SC /m̀ mëi lǎi/ "not pretty" (Ming Bao 1980)! Another writer described a similar story of misinterpretation that resulted from the homophony of 吳 and 唔 : a man addressed his boss 吳董事 SC /ŋ̀ túŋ sǐ/ "Manager Ng" as /m̀ túŋ sǐ/ but the boss interpreted this phrase as 唔懂事 SC /m̀ tún sǐ/ "doesn't understand anything" (Jin Ye Bao 今夜報 1981)!

3.2 Historical Origin of SC /ŋ̀/ and SC /m̀/

The modern velar nasal syllabic has developed from an earlier syllable that consisted of a velar nasal initial (疑母 , *ŋ-) and a final with a back vowel (i.e., the hekou rhyme 模) (Hashimoto 1972:173). In his Cantonese Primer Chao adapted his Cantonese romanization system with this historical origin in mind by writing /ŋ̀/ as "ŋu" but with the instruction that only the consonant was to be pronounced (Chao 1947:22). In the case of the morpheme

of negation /m̩/ 唔 , it is derived from the 微 *m-/ŋ- initial and a hekou 虞 Third Division rhyme (Yuan 1960:202). In Chao's romanization system he followed the same pattern as with "nu", writing 唔 as "mu" with the instruction that m- be pronounced as one syllable, that is, as /m̩/.

According to Yuan Jiahua, the majority of Cantonese dialects all have the syllabic velar nasal. Only the dialects of 高州 (in southwestern Guangdong Province near the border with Guangxi) and its vicinity do not have /ŋ̩/. In the 陽江 dialect the words 吳 and 五, etc., are all pronounced as /uŋ̩/ (Yuan 1960:205).

In a study of Taishan dialect it was found that the informant, a university student in her early 20's, had only the syllabic bilabial nasal. The study noted that while other Taishan speakers have both the syllabic bilabial and velar nasals, the two had merged into /m̩/ for the younger generation (Cheng 1973:268). The historical development of this merger in Taishan was graphically represented in the diagram shown in Figure 1 below (Cheng 1973:269). This diagram applies equally to the merger found in Hong Kong Cantonese:

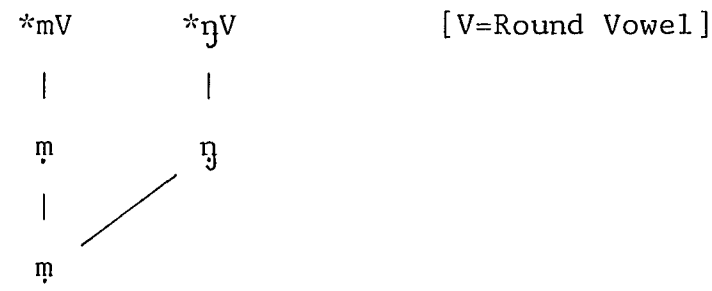


Figure 1. Developmental Stages of Syllabic Nasals in Cantonese

This historical development in which the vowel has become lost and the nasal initial has become a syllabic occurs synchronically in a language of the Tibeto-Burman family, Lahu: the syllable /mɯ̃/ has the variant form [m̩^{V}] in which the back unrounded vowel /ɯ/ is lost and the syllabic nasal affricate is articulated with "extreme lip-spreading" (Matisoff 1973:3-4). Closer to home--that is, Hong Kong, an interesting merger of syllabic nasals occurs in Shanghainese dialects. Old Shanghainese spoken by some members of the older generation in Shanghai has a series of three syllabic nasals: in addition to the syllabic velar and bilabial nasals, Old Shanghainese (老派上海話) has a syllabic alveolar nasal /n̩/ (Shen 1981:131). In New Shanghainese spoken by the younger generation, the syllabic velar nasal has merged with the alveolar nasal so that such words as 五 and 魚 which were /ŋ̩/ in Old Shanghainese are now pronounced /n̩/ in the speech of middle-aged and younger speakers (Xu et al. 1981:145). Figure 2 below represents this merger development:[3]

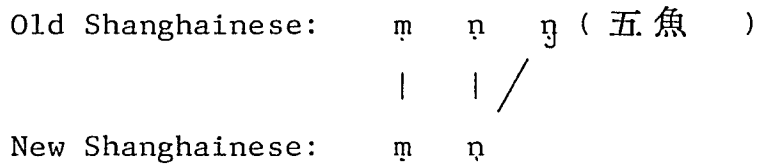


Figure 2. Merger of Syllabic Alveolar and Velar Nasals in New Shanghainese

3.3 The Three Dimensions of /ŋ̍/ → /m̩/ in Standard Cantonese

On the basis of my observation of the sound change /ŋ̍/ to /m̩/ in Hong Kong Standard Cantonese, I believe I have identified the phonetic origin of the change, the particular morpheme with which the change began, the relative schedules of change of several morphemes of the word class, the different stages of development of various subgroups of the speech community which have been affected by the sound change, and the particular subgroup of speakers with whom the /m̩/ variant originated. The remainder of this chapter will analyze the following three dimensions of this change: the phonetic origin of the change, the development of the change within the lexicon, and the spread of the change across subgroups of speakers within the speech community.

3.4 The Phonetic Origin of /m̩/

Prior to the interview stage of the investigation of the change /ŋ̍/ → /m̩/, it was hypothesized that the cause of this change could plausibly be labial assimilation. Since this change was a case of labialization, and since many sound changes arise from phonetic environments that cause assimilation, these two factors might fit together in the explanation of the change. It seemed to me that the word "five" 五 occurred in several environments where it could conceivably assimilate to a neighboring labial segment: 五文 SC /ŋ̍ mân/ "five dollars"; 十五 SC /săp ŋ̍/ "fifteen"; 五百 SC /ŋ̍ pāak/. On the basis of the evidence to follow, I believe that the

change first began with the word "five" which acquired an alternative bilabial phonetic variant pronunciation; and this phonetic variant arose as the result of labial assimilation. Specifically, for some speakers /ŋ/ is sometimes pronounced /m̩/ because the nasal assimilates to neighboring labial segments. For other speakers, this is a complete change, and for still others it is a case of free variation.

In order to discover the phonetic origin of the change and verify the hypothesis of labial assimilation, we must look at the natural, casual speech of everyday life in which such a phonetic process as labial assimilation can occur since assimilation is typically characteristic of rapid, spontaneous speech. The first part of the interview, the section which consisted of the subject's Spontaneous Speech, provides the linguistic material for observation. It was in this section that the subject was engaged in casual conversation on a variety of topics from everyday life. Labov has pointed out that "[o]bservation of the vernacular [i.e., casual speech] gives us the most systematic data for our analysis of linguistic structure" (Labov 1972a:208). That is to say, in our investigation of the phonetic origin of /m̩/, any consistent, regular pattern associated with its occurrence in particular phonetic environments should emerge in the subject's casual speech to which he directs the least amount of attention.

The syllabic nasal variable ŋ/m̩ occurred at least once in the Spontaneous Speech sections of 70 of the 75 interviews.

In these 70 interviews there were 411 instances of the variable or an average of 5.5 tokens per interview for all 75 interviews or 5.9 tokens per interview for the 70 interviews in which it occurred. The number of tokens of the variable per interview ranged from a low of one for eight interviews to a high of 33 tokens for one interview. Table 2, The Range in the Number of Instances for which the n/m Variable Occurred in the Spontaneous Speech Sections of 70 interviews by Number of Tokens per Interview and by Number of Interviews with that Number of Tokens, follows below and indicates the range in number of tokens per interview and the number of interviews for which that particular number of tokens occurred. Interviews are identified by the subject identification number. There were 229 instances of /m̩/ out of the 411 occurrences of the variable, or 56% of the total; /ŋ̩/ occurred 182 times or 44% of the total. Of the 411 tokens 385 or 93.7% of the total were the word 五 SC /ŋ̩̈/ "five." For all instances of /m̩/ 221 out of 229 or 96.5% were "five"; for all instances of /ŋ̩/ 164 out of 182 or 90% were "five." In addition to "five," three other /n/-class words occurred in the interviews: 午 SC /ŋ̩̈/ "noon"; 伍 SC /ŋ̩̈/ "backward" or "surname"; and 誤 SC /ŋ̩̌/ "mistake." Of these 26 instances of these words in the interviews 21 occurred as "noon"; two occurred as "backward"; one as "surname"; and two as "mistake." "Noon" occurred as /ŋ̩̈/ 14 times and represented 8% of all /ŋ̩/; there were seven instances of "noon" as /m̩̈/ or

Table 2. The range in the number of instances for which the ŋ/m̩ variable occurred in the Spontaneous Speech of 70 interviews by number of tokens per interview and by number of interviews in which the number of tokens occurred

Number of tokens of ŋ/m̩ variable	Number of interviews in which the number of tokens occurred (interviews identified by subject identification number)
1	8 (22 37 38 50 54 59 63 67)
2	11 (2 5 19 23 27 39 61 64 69 75 77)
3	9 (3 6 29 30 31 55 65 70 71)
4	8 (8 24 26 34 44 47 66 72)
5	7 (14 35 45 51 56 58 60)
6	6 (1 11 15 16 17 53)
7	4 (7 18 43 48)
8	2 (42 52)
9	3 (4 13 32)
10	2 (40 62)
11	2 (28 57)
12	3 (10 25 73)
14	2 (9 41)
16	1 (36)
25	1 (12)
33	1 (33)
411 tokens	70 interviews

3.1% of all /m̩/. All three occurrences of "surname" and "backward" were as /ŋ̈/ or 1.5% of all /ŋ/. There was one instance of "mistake" as /ŋ̆/ or 0.5% of all /ŋ/ and one instance of it as /m̩̆/ or 0.4% of all /m̩/. Fourteen instances of "noon" occurred in the phrase 端午節 SC /tŷn ŋ̈ tsīt/ "Festival of the Fifth Day of the Fifth Month, i.e., the Dragon Boat Festival" and were elicited from subjects in their responses to the question of how they celebrated the "Dragon Boat Festival." In most cases the subject repeated the phrase immediately after I had asked the question and thus uttered the phrase--it did not occur spontaneously on the subject's part. Nine tokens of "noon" occurred in this phrase as /ŋ̈/ and five as /m̩̈/. There were six instances of "noon" in the phrase 下午 SC /hă ŋ̈/ "afternoon," five as /ŋ̈/ and one as /m̩̈/; and "noon" occurred once in the phrase 晝午 SC /tsāu ŋ̈/ "afternoon" as /m̩̈/. There were three instances of 伍 as /ŋ̈/: twice as "backward" in the word 落伍 SC /lŏk ŋ̈/ and once as the surname which occurred as 伍字 "the character Ng" when the subject was talking about the pronunciation of this morpheme. The two instances of 誤 "mistake" occurred in the word 錯誤 SC /ts'ō ŋ̆/ once as /m̩̆/ and once as /ŋ̆/. Since the word "five" occurs with the greatest frequency in the Spontaneous Speech sections of the interview, this is good reason to believe that the change to the syllabic bilabial nasal variant began with this word. The discussion to follow will provide the evidence that this was indeed

the case.

When we look at the distribution of the n/m variable in the speech of members of the Hong Kong speech community, what we find is that the speech community comprises three subgroups of speakers with respect to the variable. The first group consists of speakers who do not have the change in their speech, i.e., the speakers in this group all use /ŋ/ in both the spontaneous and controlled sections of the interview. The second group consists of speakers who have variation between /ŋ/ and /m̩/ in either the spontaneous or controlled sections of the interview or both sections. Some speakers show variation in their Spontaneous Speech while some use only /ŋ/ or only /m̩/ in this part of their interviews. But those who use only /ŋ/ or only /m̩/ in their Spontaneous Speech switch to /m̩/ or /ŋ/, respectively, in some later part of the interview, for instance, when they name the pieces of money or read the Story or Word Lists. The third group of speakers shows a complete change to /m/ for all members of the Standard Cantonese /ŋ/-lexical class in all sections of the linguistic interview.

Since the first and third groups use either /ŋ/ or /m̩/ exclusively and independently of phonetic environments, i.e., in the first group no change has taken place and in the second group the change is a completed one, these groups can shed no light on the origin of the change. Therefore, we must focus our attention on the second group who have

variation between /ŋ/ and /m̩/ and observe the phonetic environments in which the two forms of the variable occur. In order to be able to compare phonetic environments in which /ŋ/ and /m̩/ occur, we select for observation a subset of subjects from group two, those who use both /ŋ/ and /m̩/ in their casual speech. For those subjects who only used /ŋ/ in their Spontaneous Speech but /m̩/ when naming the pieces of money, we will regard these subjects as belonging to this group who have ŋ/m̩ variation in their Spontaneous Speech. The reason for this is twofold: First, it may have been the case that the subject simply used the /ŋ/-form of the variable too few times to reveal whether or not he or she has variation between them in Spontaneous Speech. If /m̩/ occurred in the Hong Kong Money section, however, this clearly indicates that the subject does in fact use both forms of the variable. The second reason for regarding this section as being closer to the informal nature of the Spontaneous Speech section of the interview rather than to the controlled section is that the subject gave almost automatic responses when requested to name the pieces of money. The pieces of money pass through the subject's hands every day so he or she is exceptionally familiar with them. This task of naming the money also elicited a number of very colorful slang expressions for the various pieces of money which were unknown to me until I began this study. I assume that under these conditions subjects use the most familiar forms of speech when naming the money.

Those subjects who have both /ŋ̍/ and /m̩/ for "five" in their Spontaneous Speech section of the interview can be classified into three groups on the basis of the types of phonetic environments in which the variable occurs: Group One, speakers for whom /m̩/ is a conditioned variant; Group Two, speakers for whom /m̩/ is an unconditioned variant; and Group Three, speakers for whom /m̩/ occurs mainly as a conditioned variant although /ŋ̍/ sometimes occurs in spite of the conditioning being present.

For Group One speakers the occurrence of /m̩/ is conditioned by a neighboring labial segment, i.e., /m̩/ occurs only as the result of labial assimilation. Table 3, Subjects for whom /m̩/ occurs only through Labial Assimilation in Spontaneous Speech which follows below, indicates the subjects whose Spontaneous Speech included /m̩/ occurring as the result of labial assimilation and gives the phonetic environments in which /m̩/ occurred. In all but two of these cases /m̩/ occurred in the word 十五 SC /săp m̩̈/ "fifteen" in which the syllabic nasal is preceded by the unreleased voiceless bilabial stop. Subject 57 had two other occurrences of /m̩/ which may be considered instances of labial assimilation caused by a following noncontiguous labial segment: e.g., 五頁 SC /ŋ̍̈ jĭp/ "five pages" was said as /m̩̈ jĭp/. In this case the labial segment comes at the end of the following word. The second instance was for the phrase 五年班 SC /ŋ̍̈ nín pa̍an/ "fifth year (in school)" which was said as /m̩̈ nìn pa̍an/; in this phrase the labial segment occurs as the consonant initial of the second word in the

Table 3. Subjects for whom /m̩/ occurs only through labial assimilation in Spontaneous Speech (SS)

Subject Number	Number of /n̩/ in SS	Number of /m̩/ in SS	Phonetic environment for /m̩/
30	2	1	/săp m̩ fân tsûn/ fifteen minutes
31	0	3	/săp m̩ sōey/ fifteen years old /săp m̩ nìn/ fifteen years /săp m̩ nìn/ fifteen years
57	8	3	/săp m̩ tsī săp pāat sōey/ fifteen to eighteen years old /său tōu m̩ jĭp tsí/ can handle five pages /sēi nìn pâan m̩ nìn pâan/ fourth year (in school), fifth year (in school)
58	4	1	/pāat jўt săp m̩ ā/ August 15th
71	0	2	/pāat jўt săp m̩/ Eighth month and 15th day of Lunar Calendar (Mid-Autumn Festival)
73	10	1	/pāat jўt săp m̩ ā/ Eighth month and 15th day of Lunar Calendar (Mid-Autumn Festival)

phrase. This subject had eight instances of /ŋ/ and only three instances of /m̩/ in her Spontaneous Speech. In addition to the two instances of noncontiguous labial segments just described, there were four other instances in which the phonetic environments contained noncontiguous labial segments but did not produce labial assimilation: 星期五晚SC /sìŋ k'èi ṅ mäan/ "Friday night";成五六百名既教師 SC /sèŋ ŋ̈ lǔk pāak mì̀ŋ kē kāau sî/ "at least five or six hundred teachers"; 二百五十字 SC /jǐ pāak ŋ̈ sǎp tsǐ/ "two hundred and fifty characters"; 五頁 SC /ŋ̈ jǐp/ "five pages." This subject apparently only sometimes assimilates /ŋ/ to /m̩/ as the result of a noncontiguous labial segment but it occurs with rather low frequency in her speech. At least in the two instances in which there is a noncontiguous labial segment and the subject uses /m̩/, I am assuming that this was a type of labial assimilation environment which can sometimes trigger labial assimilation. Whether or not the contiguous labial segment has a stronger tendency to produce labial assimilation than the noncontiguous labial segment cannot be determinded on the basis of the available data. For the moment, I regard the noncontiguous labial segment as simply being capable of causing regressive labial assimilation as a result of the speaker's anticipation of the segment.

When Group One speakers (except 31 who participated in the pilot study and did not name the pieces of money) named the pieces of money, they all used /ŋ̈/ in all instances, including the one environment of potential labial assimilation

where /m̥/ might have occurred, 五文 SC /ŋ̊ mân/ "five dollars." In addition, when these subjects read the Story and Word Lists they only used /ŋ̊/.

Group Two speakers used /m̥/ as an unconditioned variant of /ŋ̊/ since /m̥/ occurs independently of phonetic environments that favor labial assimilation. Table 4, Subjects with /m̥/ as an Unconditioned Variant for Subjects who have both /ŋ̊/ and /m̥/, gives examples of the variable occurring in casual speech to illustrate this category of speakers with the unconditioned variant. The starred items have been taken from the Hong Kong Money section which was done in order to show the speaker using both forms of the variable independently of phonetic environments conducive to labial assimilation. As Table 4 shows, subjects may use /ŋ̊/ and /m̥/ in identical phonetic environments: e.g., Subject #53, 五十 "fifty" /ŋ̊ săp/ and /m̥ săp/; #34, 五年 "five years" /ŋ̊ nìn/ and /m̥ nìn/; #12, 五隻 "five cards" /ŋ̊ tsēk/ and /m̥ tsēk/, 五千文 "five thousand dollars" /ŋ̊ ts'în mân/ and /m̥ ts'în mân/. When we compare this group's use of the variable in all four interview contexts--Spontaneous Speech, Naming Hong Kong Money, Story, and Word Lists, we find that while speakers may use /ŋ̊/ and /m̥/ with equal frequency or favor one or the other in the first three sections, they typically switch to the exclusive use of either /ŋ̊/ or /m̥/ in the Word Lists section. This pattern suggests that by the time they reach the Word Lists section, they recognize that one pronunciation is the correct one while the other is an

Table 4. Subjects with /m̩/ as an unconditioned variant for subjects who have both /ŋ̩/ and /m̩/

Subject Number	Phonetic Environment of /ŋ̩/	Phonetic Environment of /m̩/
12	/p'àai ŋ̩ tsēk/ give out five cards /tǎi ŋ̩ tsēk p'àai/ the fifth card /sēi ŋ̩ ts'în mân/ four or five thousand dollars	/wǎ m̩ săp/ say fifty /jäu m̩ tsēk p'àai/ there are five cards /jèn tsó m̩ ts'în mân/ won five thousand dollars
13	/hǎ ŋ̩ ŋ̩ tím/ five o'clock in the afternoon /pāak ŋ̩/ a hundred and fifty /ŋ̩ tím káu/ five-forty five /ŋ̩ pāak mân/ five hundred dollars /ŋ̩ lăp sân/ fifty cents	/p'àai tǎi m̩/ the fifth one in the family /m̩ ts'ȳn/ five inches /m̩ săp mân/ fifty dollars /m̩ mân kâi/ five dollars /m̩ lăp sân/ fifty cents
25	*/ŋ̩ săp mân/ fifty dollars */ŋ̩ mân/ five dollars	/m̩ lŭk nìn ts'ìn/ five or six years ago /ŋö m̩ tím pūn ts'ôet lèi/ I left at 5:30
26	/ŋ̩ kō pūn/ five and a half	/jă ă m̩ jăt/ twenty-five days */m̩ săp mân/ fifty dollars */m̩ mân/ five dollars */m̩ hòu tsí/ fifty cents
34	/sēi ă ŋ̩ fân tsûŋ/ forty-five minutes	/m̩ nìn/ five years /m̩ nìn/ five years
44	/hăi ŋ̩ kō kéi tsûŋ t'àu/ more than five hours	/m̩ jўk tsûŋ hŏk/ Five Educations Middle School
45	/jât lìŋ ŋ̩/ 105	/m̩ hŏu êi/ No. 5A /m̩ hŏu pî/ No. 5B /m̩ săp/ fifty /m̩ jўt/ May
52	/ŋ̩ kō/ five /m̩ ă ŋ̩ ă lŭk lā/ fifty-five or six	/m̩ ă m̩ tóu lā/ fifty-five or so
53	/tsûŋ ŋ̩/ form five (year in school) /ŋ̩ săp kéi/ more than fifty	/m̩ săp/ fifty /m̩ săp jĭ tĭŋhăi m̩ săp pāat/ fifty-two or fifty eight
64	/tsûŋ ŋ̩/ "form five (year in school)	/sàam săp m̩ sōey/ thirty five years old

inappropriate variant and suppress its use. Table 5, Speakers' Variation between /n̈g̈/ and /m̈/ for "five" in Four Speech Contexts, illustrates this pattern of shifting.

Some speakers become aware that they have two pronunciations for "five" in the course of the controlled section of the interview: at some point in the reading of the Story or the Word Lists, the subject switches to either /n̈g̈/ or /m̈/ and consistently uses only that particular form of the variable for the rest of the interview. For example, Subject #25 had used /m̈/ consistently for "five" nine times in his Spontaneous Speech but when naming the money used /n̈g̈/ twice and /m̈/ twice. When reading the Story, he used /m̈/ once but /n̈g̈/ three times; and when reading the Word Lists, he used only /n̈g̈/. Subject #26 followed a similar pattern althugh he retained the /m̈/ a bit longer: in his Spontaneous Speech he used two instances of /n̈g̈/ and two of /m̈/; in the Hong Kong Money section he used only /m̈/ four times; in the Story "five" as /m̈/ occurred three times, while in the Word Lists "five" was only /n̈g̈/. These two informants show an increase in the use of /ŋ̈g̈/ as the speech situation becomes more formal.

Group Three speakers fall between the preceding two groups in tht the majority of occurrences of /m̈/ seems to be the result of labial assimilation but occasionally the variable occurs as /ŋ̈g̈/ even though /ŋ̈g̈/ occurs in a phonetic environment with a neighboring labial segment where labial assimilation might be expected to occur. There are two

Table 5. Speakers' variation between /n̈ŋ/ and /m̈/ in four speech contexts for 五.

Subject Number	Spontaneous Speech		Hong Kong Money		Story		Word Lists	
	/n̈ŋ/	/m̈/	/n̈ŋ/	/m̈/	/n̈ŋ/	/m̈/	/n̈ŋ/	/m̈/
12	9	15	0	18	0	4	0	3
13	5	3	5	7	1	3	0	3
25	0	9	2	2	3	1	3	0
26	2	2	0	4	1	3	3	0
34	2	2	8	0	4	0	3	0
44	1	3	3	0	1	3	3	2
45	1	4	0	3	0	4	0	4
52	2	6	1	2	0	4	1	3
53	3	3	2	2	1	3	4	1
60	5	0	5	3	1	3	2	0
64	1	1	0	3	2	2	0	3
70	3	0	4	4	1	3	1	3

subjects who belong to this category, #33 and #48. For Subject #48 the syllabic nasal variable occurred seven times in Spontaneous Speech: four times as /ŋ̩/ and three times as /m̩/. In two of the three instances the variable was surrounded by labial segments, 十五文 "fifteen dollars" /săp m̩ mân/, but in the third case no neighboring labial segment occurred, 一五幾 /jât m̩ kéi/ "more than one (thousand) five (hundred dollars)." When Subject #48 named the money /m̩̈/ occurred three times but only one of those instances was in an environment that might possibly cause labial assimilation and even then the labial segment was not contiguous with the variable: 五十文 /m̩̈ săp mân/ "fifty dollars." The other instances of /m̩̈/ were 五仙 /m̩̈ sîn/ "five cents" and 五毫子 /m̩̈ hòu tsí/ "fifty cents." In the only environment where labial assimilation is predicted, the subject used /ŋ̩̈/ in 五文 /ŋ̩̈ mân/ "five dollars."

Subject #33 also belongs to this third category. Let us take a close look at his use of the two forms of the variable since in his Spontaneous Speech and in the Hong Kong Money section instances of /ŋ̩/ and /m̩/ were more numerous for this speaker than for any other. The pattern that underlies his use of the variable provides the best evidence in support of this third category of speaker. For Subject #33, a 36-year-old office clerk with 11 years of schooling, "five" occurred a total of 33 times in the Spontaneous Speech section and 15 times in the Hong Kong Money section. The reason "five" occurred with such a high frequency in the Spontaneous

Speech section was because the subject talked at great length about his favorite pastime, gambling. Two gambling activities he enjoys the most are horse racing and playing majong. When this subject named the money he discussed some of the colloquial expressions for various pieces of money and the superstition associated with the $50 bill. The incidence of /m̩/ in both Spontaneous Speech and in the Hong Kong Money section is almost the same, i.e., 67% in the first context and 73% in the second. However, when the subject read the Story and the Word lists, he only used /ŋ̩/ which clearly shows that he perceives a stylistic difference between /m̩/ and /ŋ̩/ and that the latter is considered more appropriate for his careful, correct speech. When we look at the phonetic environments in which the syllabic nasal occurred, we find that there is a strong tendency for /m̩/ to occur under conditions for labial assimilation: of the 22 instances of /m̩/ in Spontaneous Speech, 18 or 82% occur with a contiguous labial segment, e.g., 五文 /m̩̈ mân/ "five dollars" with eight occurrences; 二十五文 /jă ă m̩̈ mân/ "twenty-five dollars" with one occurrence; 五百文 /m̩̈ pāak mân/ "five hundred dollars" with one occurrence; 十五六歲 /săp m̩̈ lŭk sōey/ "15 to 16 years old " with one occurrence; 十五文 /săp m̩̈ mân/ "fifteen dollars" with six occurrences; and 有五窠 /jäu m̩̈ fô/ "there are five units (of housing)" with one occurrence.

There were four instances of /m̩/ in non-labial assimilation environments: 五月 /m̩̈ jўt/ "May" with one occurrence;

五毫子 /m̈ hòu tsí/ "fifty cents" with one occurrence; 五個鐘頭 /m̈ kō tsûŋ t'àu/ "five hours" with one occurrence; and七五六個人 /ts'ât m̈ lŭk kō jàn/ "seven--five--or six people." In the ten instances of /ŋ̈/ three occurred with a contiguous labial segment which we might have expected to condition the variable to occur as /m̈/: 中五萬 /tsūŋ ŋ̈ mǎan/ "win fifty thousand (dollars)" with one occurrence; 五文 /ŋ̈ mân/ "five dollars" with one occurrence; and 二十五文 /jǎ ǎ ŋ̈ mân/ "twenty-five dollars" with one occurrence. Three instances of /ŋ̈/ occurred in non-labial assimilation conditions, and five occurrences of /ŋ̈/ were in environments with a contiguous labial segment, 五十文 /ŋ̈ sǎp mân/ "fifty dollars" (when the subject named the money he used /m̈ sǎp mân/ twice and /ŋ̈ sǎp mân/ twice which suggests that a noncontiguous labial segment may sometimes trigger labial assimilation for this subject just as in the case of Subject #57 described above).

When Subject #33 named the money /m̈/ occurred 11 out of 15 times or 73%. However, in only <u>one</u> instance of /m̈/ did it co-occur with a labial segment following it, 五文 /m̈ mân/ "five dollars." There were eight instances of /m̈/ in environments in which no phonetic conditions for labial assimilation existed: 五張嘢 /m̈ tsôeŋ jë/ "fifty dollars" with four occurrences; 五張十文子 /m̈ tsôeŋ sǎp mân tsí/ "five ten-dollar bills" with one occurrence; 五仙 /m̈ sîn/ "five cents" with two occurrences; and 五毫 /m̈ hòu/ "fifty cents" with one occurrence.

Assuming that the pattern of use of /ŋ̈/ and /m̈/ in his Spontaneous Speech is the more representative of the subject's linguistic behavior in the use of the variable than the pattern associated with naming the money, then we can conclude that the subject has a marked tendency to use /m̈/ as a conditioned variant, but its occurrence is not entirely restricted to phonetic environments that produce labial assimilation which is seen when the subject names and discusses pieces of money.

Subject #11 may also belong to this category although the data are too insufficient to make a convincing case. In his Spontaneous Speech he used only /m̈/ four times in phonetic environments that favor assimilation and two times in phonetic environments which do not. The following instances of /m/ were found to occur in phonetic environments favoring labial assimilation: 星期五晚上 /sîŋ k'èi m̈ maän soěn/ "Friday evening"; 二十五文 /jǐ săp m̈ mân/ "twenty-five dollars"; 二十五文 /jă ă m̈ mân/ "twenty-five dollars"; and 五百文 /m̈ paāk mân/ "five hundred dollars." The two occurrences of /m̈/ in non-labial assimilation environments were 五個 /m̈ kō/ "five" and 教五日 /kaāu m̈ jăt/ "teach five days." When this subject named the money he used /m̈/ once in an environment conducive to labial assimilation, /m̈ mân/ "five dollars." He used /ŋ̈/ twice in non-labial assimilation environments: /ŋ̈ săp mân/ "fifty dollars" and /ŋ̈ hòu/ "fifty cents." In the Story and first two Word Lists he used only /ŋ̈/, but in the Minimal Pair

Word List, he indicated that he had two pronunciations for "five," /ŋ̈/ and /m̈/, and thought that /ŋ̈/ was correct.

In looking through the phonetic environments in which the word "five" occurs, I have noticed that there are a number of environments which have the potential to cause labial assimilation of the variable. Some of these phonetic environments may enhance the tendency for labial assimilation more than other potential environments. I tentatively suggest that the following ten types of phonetic environments have the potential to cause labial assimilation. Since I am making the claim that the change from /ŋ̈/ to /m̈/ began as a phonetic variant as the result of labial assimilation, it is relevant to this discussion to recognize the frequency with which these phonetic environments occur in natural speech. The ten types of phonetic environments for potential labial assimilation are listed in Table 6 below. The X refers to any non-labial phonetic segment and the L to any labial segment which in Standard Cantonese includes /f-/, /p-/, /-p/, /m-/, /-m/, /m̈/, and /w-/. For the purposes of this discussion I am regarding all labial segments as having an equal influence in the labial assimilation process although this may not actually be the case. For instance, /m-/, /-m/, /m̈/, /-p/, and /-p/ which occur with complete labial closure may contribute more to labial assimilation than /f-/ and /w-/ for which there is not complete labial closure. An experimental investigation of labial assimilation with Cantonese speakers could help

Table 6. Ten types of potential labial assimilation environments for 五. (L=labial segment, X=nonlabial segment, [ ]=Morpheme)

Types of labial assimilation environments	Number of times occurs as /ŋ̍/ or /m̩/ in environment	
	as /ŋ̍/	as /m̩/
1. [XXX] 五. [LXX]	22	23
2. [XXL] 五. [XXX]	3	22
3. [XXL] 五. [LXX]	1	13
4. [LXX] 五. [XXX]	9	4
5. [LXX] 五. [LXX]	0	6
6. [XXX] 五. [XXL]	22	20
7. [LXX] 五. [XXL]	1	7
8. [XXX] [XXX] 五. [XXX] [LXX]	21	15
9. [LXX] [XXX] 五. [XXX] [XXX]	3	5
10. [XXL] [XXX] 五. [XXX] [XXX]	5	4

clarify this problem.

When all /ŋ̩/ and /m̩/ tokens are combined there are 385 phonetic environments in which the variable for "five" occurred. In categorizing these 385 phonetic environments in terms of their potential for labial assimilation and no potential for labial assimilation, I found 206 instances or 54% of the first type (i.e., contiguous and noncontiguous labial segments in the neighboring environment with "five") and 179 or 46% of the second type (i.e., no labial segments in the neighboring environment). If the interviews are fairly representative of natural speech--and I am assuming this to be the case, then in natural speech there is abundant opportunity for labial assimilation of the syllabic velar nasal to occur. In Table 6 the number to the right of environments indicates the number of instances in which that environment occurred. The first number indicates how many times the variable occurred as /ŋ̩/ and the second number how many times it occurred as /m̩/. From the table we note that for environments of Type 2 ([XXL] ⫫ [XXX]), Type 3 ([XXL] ⫫ [LXX]), Type 5 ([LXX] ⫫ [LXX]), and Type 7 ([LXX] ⫫ [XXL]) in which the number of /m̩/'s exceeds the number of /ŋ̩/'s the tendency appears to be for the variable to occur as /m̩/. We must remember, however, these numbers are based on all subjects who include those who have a complete change to /m̩/ (for all lexical items or at least "five"), those with ŋ̩/m̩ variation, and those who do not have /m̩/ unless it occurs as the result of labial assimilation. Those subjects who

have a complete change to /m̩/ will use /m̩/ regardless of the phonetic environment in which it occurs, so they cannot be very helpful to us in analyzing a phonetic environment's potential for labial assimilation. However, those subjects who have ŋ̩/m̩ variation can be helpful because the phonetic environment may be a significant factor in determining which form of the variable occurs. The third group of subjects for whom /m̩/ only occurs as the result of the labial assimilation of /ŋ̩/ is obviosuly even more helpful to our analysis. In order to determine just how conducive to labial assimilation these four environments are, we must look at both the number of occurrences of /m̩/ in the four environments and the three categories of subjects distributed in these environments. The following sentence is one example of the Type 5 environment: 俾五百文我爸爸拉 /péi m̩̈ pāak mân ŋ̩ö pà pâ lā/ "give five hundred dollars to my father." There were four subjects with six instances of /m̩/ in this environment, but three of the subjects have a complete change to /m̩/ and one has ŋ̩/m̩ variaiton. An example of the Type 7 environment is 三百五十文 /sa̍am pāak m̩̈ săp mân/ "three hundred and fifty dollars." Six subjects had seven occurrences of /m̩/ in this type of phonetic environment; five of the subjects had a complete change to /m̩/ and one had ŋ̩/m̩ variation. On the basis of these subjects, Types 5 and 7 do not seem to be particularly significant for labial assimilation.

As an example of a Type 2 phonetic environment, we can

give the following sentence: 有十五個人 /jäu săp m̈ kō jàn/ "there were fifteen people." In Type 2 environment there were 22 instances of /m̩/ in the speech of 14 subjects: seven subjects have ŋ/m̩ variation, four used /m̩/ only as the result of the labial assimilation of /ŋ/, and three have a complete change to /m̩/. All of the 22 instances of /m̈/ in this environment were preceded by the word 十 /săp/ "ten" in the phrase 十五 /săp m̈/ "fifteen."

In the case of Type 3 there were 13 occurrences of /m̩/ in the speech of six subjects: three subjects have ŋ/m̩ variation, two have a complete change to /m̩/, and one has /m̩/ as the result of labial assimilation. The following is an example of the Type 3 environment: 譬如十五文呀 /p'ēi jỳ săp m̈ mân ā/ "for example fifteen dollars." Just as with Type 2 all the instances of /m̩/ occurred in the phrase /săp m̈/ "fifteen." On the basis of the distribution of the three categories of subjects in Types 2 and 3, the evidence strongly supports the claim for Types 2 and 3 as phonetic environments conducive to labial assimilation. Type 2 produces progressive assimilation, and Type 3 produces both progressive and regressive assimilation simultaneously because the variable is both preceded and followed by labial segments. Although we might be inclined to think that Type 3 environment in which the variable is surrounded by labial segments would be a stronger assimilation environment than Type 2, the data do not necessarily support such a conclusion: that is, there are more subjects who

have /m̩/ as the result of labial assimilation in Type 2 than in Type 3.

The first seven of these environments focus on the immediate phonetic environment of one word preceding and following the variable. Types 8, 9, and 10 environments consider the effect of the second word before and after the variable. In Type 8 the variable occurs more often as /ŋ̩/ than /m̩/ which suggests that this environment may not be as important to labial assimilation as the ones previously discussed. I have included these environments only because of the one instance of labial assimilation which was noted in the speech of Subject #57 who generally only used /ŋ̩/ except under conditions of labial assimilation when it was realized as /m̩/. She used /m̩/ three times in assimilation environments of Types 2, 6, and 8 as follows: 十五至十八 /sǎp m̩̄ tsī sǎp pāat/ "15 to 18 (years old)"; 受到五頁子 /sǎu tōu m̩̄ jǐp tsí/ "(can) handle five pages"; and 五年班 /m̩̄ nìn pa̍an/"fifth year (in school)."

The three categories of speakers whose use of the variable ranges from a conditioned to a nonconditioned variant reflect stages in the development of the sound change; that is to say, the change to /m̩/ begins first as a conditioned variant through labial assimilation; later, the occurrence of /m̩/ is not restricted just to the particular phonetic conditions for labial assimilation but is extended to other nonconditioning environments; eventually, /m̩/ becomes a free variant of /ŋ̩/. Which one will occur

cannot be predicted except perhaps as a probability--a speaker appears to have a tendency to use one more than the other or to use both with about equal frequency. Some speakers may not have developed the /m̩/ variant through labial assimilation but acquired it directly as a free variant since they hear speakers around them using both forms. Since they do not assign different meanings to the different forms, speakers do not learn to restrict the use of one or the other to the particular phonetic environments. At the same time, however, some speakers recognize one as the correct, standard form. Some speakers appear to have never used /ŋ̩/ in their speech but have always said /m̩/. Others who have been found to only use /ŋ̩/ will probably never acquire the /m̩/ variant. However, it is possible that some speakers have progressed or will progress through these various stages. Some speakers who now only have /m̩/ as a conditioned variant may eventually use it as a free variant. Some speakers may remain at the first stage through their entire lives and only use /m̩/ as a conditioned variant. The only way to determine if speakers will change their speech habits with respect to the syllabic nasal variable is to conduct follow-up interviews a few years from now with these same subjects who now show variation. In the final stage of the change from /ŋ̩/ to /m̩/, we will find that /ŋ̩/ has been replaced by /m̩/ for all members of the speech community, but this development still lies somewhere in the future. How and why will /ŋ̩/ disappear?

First of all, those speakers who use only /ŋ̩/ are primarily the older speakers of the speech community as will be discussed in the next section on this sound change; they eventually will all die off thereby removing the nonvariant layer from the speech community and leaving the changed layer of speakers who use only /m̩/ and the variant layer who use both /ŋ̩/ and /m̩/ Then the variant group is the next to leave the scene so that only /m̩/-speakers are left.

3.5 The Lexical Dimension of /ŋ̩/ → /m̩/

The lexical dimension of this sound change to the syllabic bilabial nasal is concerned with how the change has affected the three common morphemes of the /ŋ̩/-word class--五 SC /ŋ̩̈/ "five," 午 SC /ŋ̩̈/ "noon," 吳 SC /ŋ̩̀/ "surname (with the low falling tone)." Are these three words developing with different or similar schedules of change? The evidence to follow indicates that their schedules are not the same. Obviously, those speakers who have no variation in their speech provide little help to us in determining how the sound change has been affecting these three morphemes--for subjects who are unaffected by the change to /m̩/, all morphemes are pronounced /ŋ̩/, and for subjects who have a complete change to /m̩/, all morphemes are pronounced /m/. Consequently, we concentrate our analysis on the group of speakers who have variation. Subjects pronounced the words in three word lists with each word occurring at least twice in the three lists. Thee were 11 patterns of variation with

respect to the three words as shown in Table 7 below. By computing the number of subjects who have the velar nasal, the bilabial nasal, or variation between the two for each of the three words, we can see how the trajectories of change for the three words vary with one another. How these three words have been affected by the change is vividly represented in Figure 3, % Change of Three /ŋ̩/-class Morphemes in Word List Style, which follows below. Out of the 39 subjects, 13 or 33% show a complete change to the bilabial nasal for "five"; 10 subjects or 26% show a complete change to the bilabial nasal for "noon"; but only five subjects or 13% have the bilabial nasal for the "surname." Seventeen subjects or 44% have variation between the two forms of the syllabic nasal for "five"; 11 or 28% show variation for "noon"; and 16 or 41% do the same for the "surname." At the same time, nine subjects or 23% show no variation for "five" having only the syllabic velar nasal; 18 subjects or 46% give the standard form for "noon"; and 18 subjects or 46% use it for the "surname." On the basis of this data and that presented earlier on the ponetic origin of /m̩/ arising from labial assimilation, I believe the evidence substantiates my conclusion that the change to /m̩/ began first with the word "five" which has led the way for the /n/-class of morphemes in the change to /m̩/ since more speakers have a complete change to /m̩/ for "five" than for "noon" or "surname." This situation of variation between /ŋ̩/ and /m̩/ both for speakers and for morphemes must have also existed in years

Table 7. Patterns of variation for /ŋ/ and /m̩/ for three /ŋ/-class morphemes in Word Lists

Number of Speakers with this pattern	Patterns of /ŋ/ and /m̩/ Variation		
	五 "five"	午 "noon"	吳 "surname"
9	ŋ	ŋ	ŋ
4	m̩	m̩	m̩
4	m̩	m̩	ŋ/m̩
2	m̩	ŋ/m̩	ŋ/m̩
3	m̩	ŋ/m̩	ŋ
4	ŋ/m̩	ŋ	ŋ
5	ŋ/m̩	ŋ	ŋ/m̩
2	ŋ/m̩	ŋ/m̩	ŋ
4	ŋ/m̩	ŋ/m̩	ŋ/m̩
1	ŋ/m̩	m̩	m̩
1	ŋ/m̩	m̩	ŋ/m̩

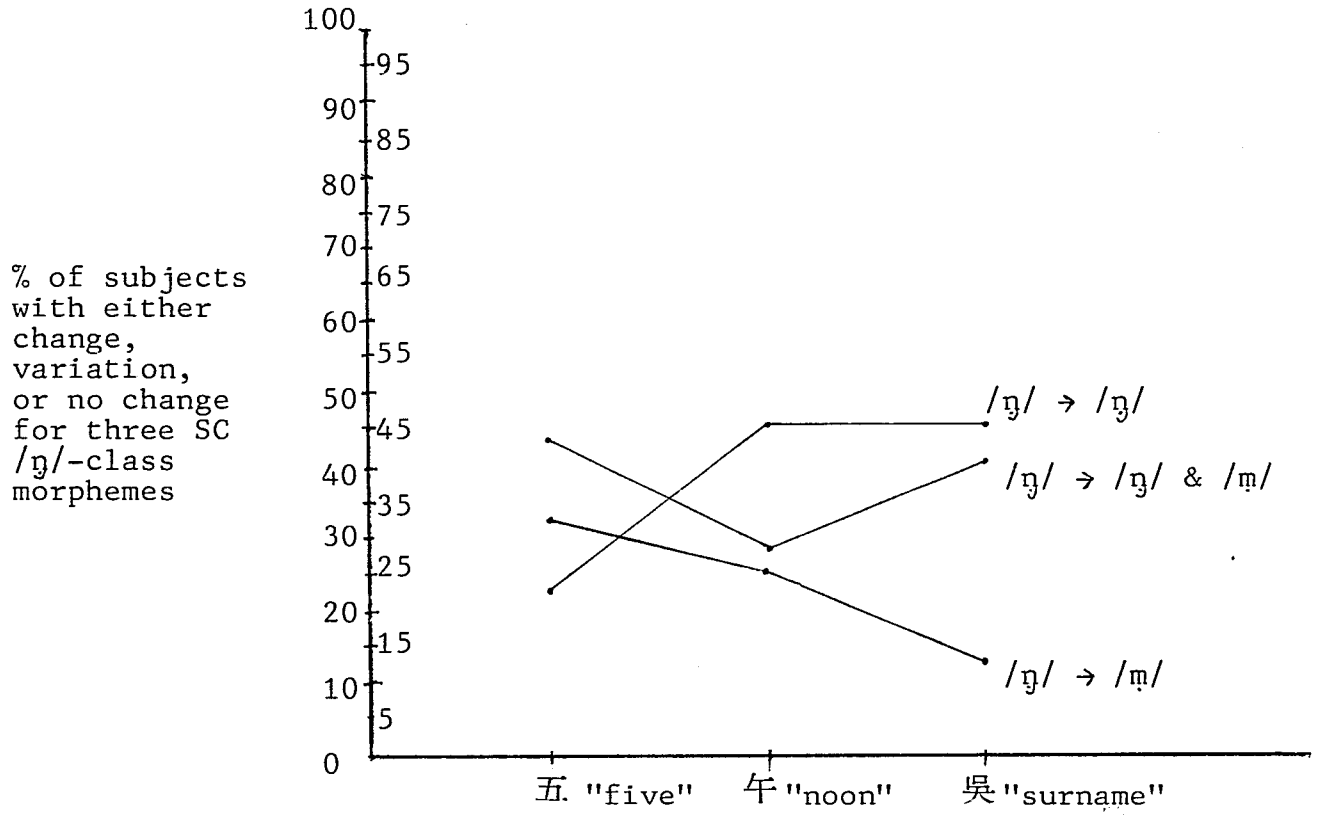


Figure 3. % change to /m/ of thee SC /ŋ/-class morphemes for Word Lists (Subjects with variation in Story and Word Lists)

past when the change first began its development in Hong Kong Cantonese. In the next and final section of this chapter, the particular social group of speakers with whom this change is believed to have originated will be discussed along with the patterns of the use of the variable among various subgroups of speakers.

3.6 The Social Dimension of /ŋ̩/ → /m̩/

The social dimension of the change to /m̩/ is concerned with its distribution across subgroups of the sample population. On the basis of their linguistic behavior with respect to the change, the sample of subjects can be subdivided into three groups as has been mentioned earlier: first, speakers who have not undergone any change and have only the syllabic velar nasal for all morphemes of the Standard Cantonese syllabic velar nasal word class in both casual speech and formal speech contexts. Second, speakers who show variation between the two forms of the nasal for one or more words of the word class in their Spontaneous Speech and in reading the Story and Word Lists. And third, speakers who have undergone a complete change to the syllabic bilabial nasal for all lexical items in the word class for both the casual and formal speech contexts.

In analyzing a speaker's use of a linguistic variable, the sociolinguist wants to compare a speaker's usage in one speech context with that of another and to compare one speaker's or one group of speakers' use of the variable with

that of another. To make comparative statements the sociolinguist expresses a speaker's use of a linguistic variable in quantitative terms. He does this by determining the proportion of instances in which the linguistic variable was used out of all possible instances in which it might have been used. This proportion or fraction is expressed as a percentage of actual occurrences out of all potential occurrences (Labov 1972a:32). So, for example, if a subject read a list of ten words which all belong to the SC /ŋ̩/ lexical category and pronounced three of the words as /m̩/ and seven as /ŋ̩/, then the subject's percent use of /m̩/ or /m̩/ index is 30%.

As stated earlier in Chapter 1, the original research design called for a study based on a sample population represented by three independent variables of sex, age, and educational background. With two sexes, four age groups, and three educational levels, we have an independent variable matrix of 24 cells. Table 8, Distribution of Members of Sample Population by Identification Number in Independent Variable Matrix by Sex, Age, and Educational Level, indicates how the subjects of this study are classified in this kind of matrix. Although not all cells of the matrix are filled with subjects, we can make interesting comparisons of various groups to determine how their use of the phonological variable varies as the sex, age, and educational level of subjects also vary. However, let us first look at the subjects' use of the syllabic nasal variable with respect to the sex and age of individual

Educational Level	Males	Females
I (14-16 years of schooling)	A (15-22)	A (15-22) 49
	B (23-30) 23 24 25 28 29 30	B (23-30) 51 53 57 58 59 60 61
	C (31-44) 32 35	C (31-44) 66
	D (45+)	D (45+) 75
II (11-13 years of schooling)	A (15-22) 4 10 11 17 18 20	A (15-22) 44 47
	B (23-30)	B (23-30) 50 52 54 55 56 62
	C (31-44) 33 34 37	C (31-44) 65 68
	D (45+) 39 40	D (45+)
III (0-10 years of schooling)	A (15-22) 1 2 3 5 6 7 8 9 12 13 14 15 16 19	A (15-22) 45 48
	B (23-30) 22 26 27 31	B (23-30) 63
	C (31-44) 36	C (31-44) 64 67 69 70 71
	D (45+) 38 41 42 43	D (45+) 73 74 76 77

Table 8. Distribution of members of the sample population by identification number in independent variable matrix by sex (male and female), age (A, 15--22 years; B, 23-30 years; C, 31-44 years; D, 45+), and educational level (I, 14-16 years of schooling; II, 11-13 years; III, 0-10 years)

subjects and not consider educational level for the time being. Figure 4 below indicates how the sample's subjects are distributed into three groups according to whether they have no change to /m̥/ and only use /ŋ̥/, a complete change to /m̥/, or variation between the two, and according to the subject's sex, age, and percent of /m̥/ in Spontaneous Speech and naming the money (or just Spontaneous Speech for those subjects in the pilot study; for four of these subjects the variable occurred only twice in their Spontaneous Speech and for two of the subjects only once: so few instances of the variable may or may not be an accurate reflection of these subjects' use of the variable). A % /m̥/-score of 100% means that the subject used only /m̥/ in his or her Spontaneous Speech and when naming the pieces of Hong Kong money. A % /m̥/-score of 1 means that the subject used only /ŋ̥/ in his speech. Scores ranging between 1 and 100% indicate that the subject used both /ŋ̥/ and /m̥/ but the percent-figure indicates how much /m̥/ occurred. The scattergram in Figure 4 vividly shows that the use of the variable /m̥/ in Spontaneous Speech is a phenomenon principally occurring among younger speakers. For Age Group A (15-22) there are 25 subjects distributed in two categories of use of the variable for Spontaneous Speech and naming the money. As indicated in the scattergram 17 subjects out of 25 or 68% used only /m̥/ in this speech context. Of the 17 subjects, 16 or 94% are males and one is female. Eight subjects or 32% of subjects in this age group showed variation between /ŋ̥/ and /m̥/; four of the eight are male

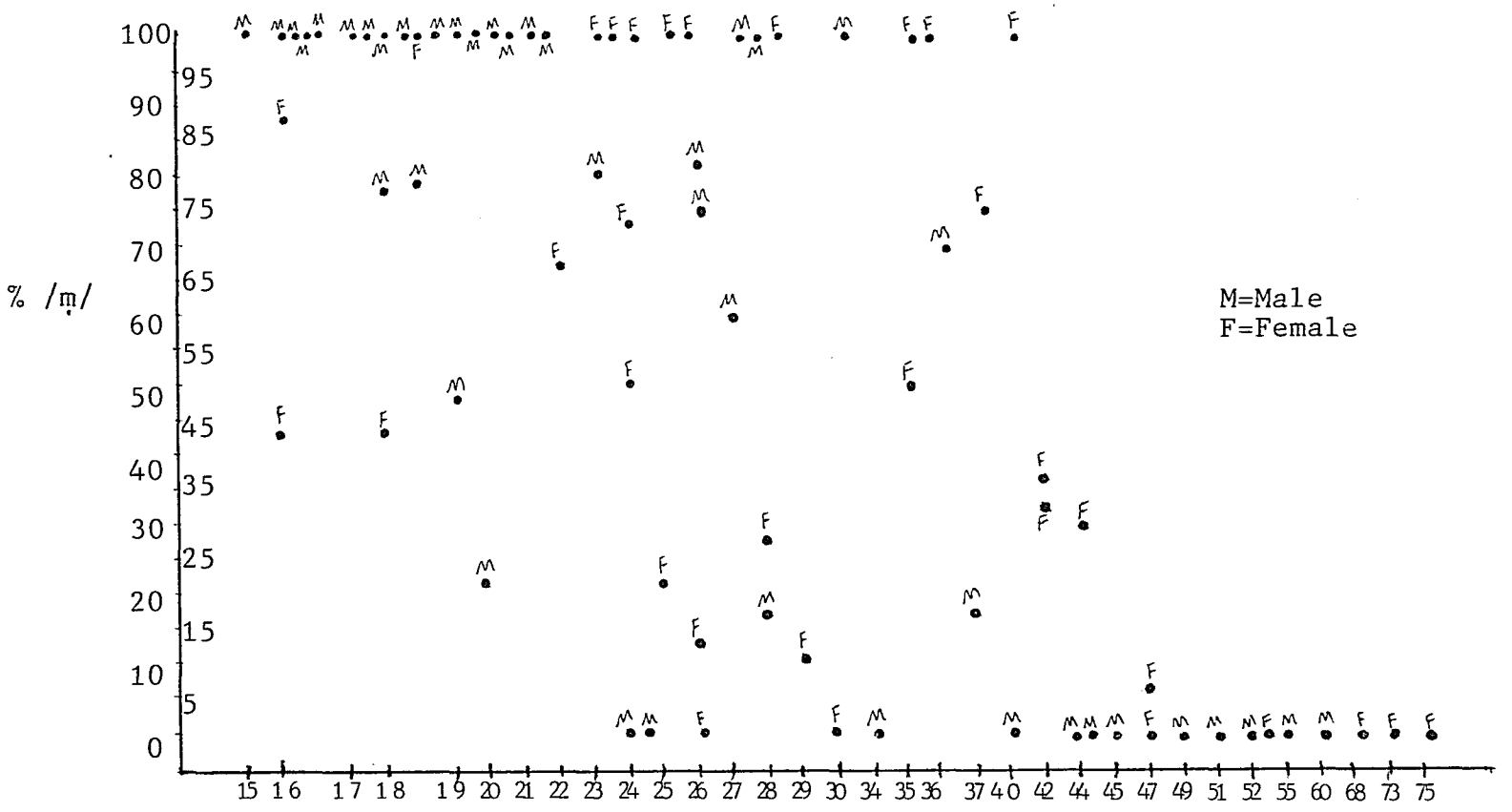


Figure 4. % /m̥/ for Spontaneous Speech and Naming Pieces of Hong Kong Money (two % /m̥/-scores averaged as one) for sample population by age and sex

or 20% of all males in this age group and four are females or 80% of all females in this age group.

There are 24 subjects in Age Group B (23-30), ten men and 14 women. Nine subjects or 37% of the group used only /m̥/ in their Spontaneous Speech and naming the money, and this group consisted of three men or 30% of the men in the group and six women or 43% of the women in the group. More subjects in this age group show variation between /m̥/ and /ŋ̥/ than use only one form of the variable or the other; 11 subjects, five men and six women, or 46% of this age group have variation. Four subjects, two men and two women, use only /ŋ̥/, or 17% of the total number of subjects.

Age Group C (31-44) shows a similar pattern as Age Group B in that more subjects in the group have variation than only use either /ŋ̥/ or /m̥/; in Age Group C seven out of 14 subjects or half the group used both /ŋ̥/ and /m̥/ in Spontaneous Speech. However, in Age Group C the proportion of women who have variation between /ŋ̥/ and /m̥/ is more than twice the number of men who have variation. Only one-third of the men use both /ŋ̥/ and /m̥/, while two-thirds of the men in this group use only /ŋ̥/. There are no women in this age group who use only /ŋ̥/, nor any men who use only /m̥/ in Spontaneous Speech.

There are 12 subjects aged 45 and over in Age Group D, six men and six women. Only one female subject shows ŋ̥/m̥ variation (at only 6%); all other subjects used only /ŋ̥/ in their Spontaneous Speech and when naming the money.

Figure 5 shows how subjects are distributed into three groups according to whether they have no change to /m̥/ and only use /ŋ̊/, a complete change to /m̥/, or variation between /ŋ̊/ and /m̥/, and according to the subject's sex, age, and total percent of the bilabial nasal used in two speech contexts of reading the Story and the Word Lists taken together. When subjects read the Story and Word Lists many switched to using more /ŋ̊/ as can be seen by comparing Figures 4 and 5.

Table 9, Distribution of Subjects in Three Categories According to Use of the Variable in Spontaneous Speech and Reading, compares the subjects' use of the variable as indicated in Figure 4 with that shown in Figure 5 for men and women in the four age groups. When subjects in Age Group A (15-22) read the Story and Word Lists, the number who used both /ŋ̊/ and /m̥/ in this context almost doubled from eight in Spontaneous Speech to 14. This increase came primarily from the male subjects who switched from using only /m̥/ in Spontaneous Speech to using /ŋ̊/ and /m̥/ in reading. One male subject switched to an exclusively /ŋ̊/-style for reading, while one female who had used only /m̥/ in her Spontaneous Speech joined the other females who have variation. In Age Group B (23-30) the number of subjects who have both /ŋ̊/ and /m̥/ in reading jumped to 19 out of 24 or 79% from 11 or 46% who had shown variation in their Spontaneous Speech. This increase came primarily from the six women who had used only /m̥/ in their Spontaneous Speech or 43% of the females in this group but then switched to using both /ŋ̊/ and /m̥/

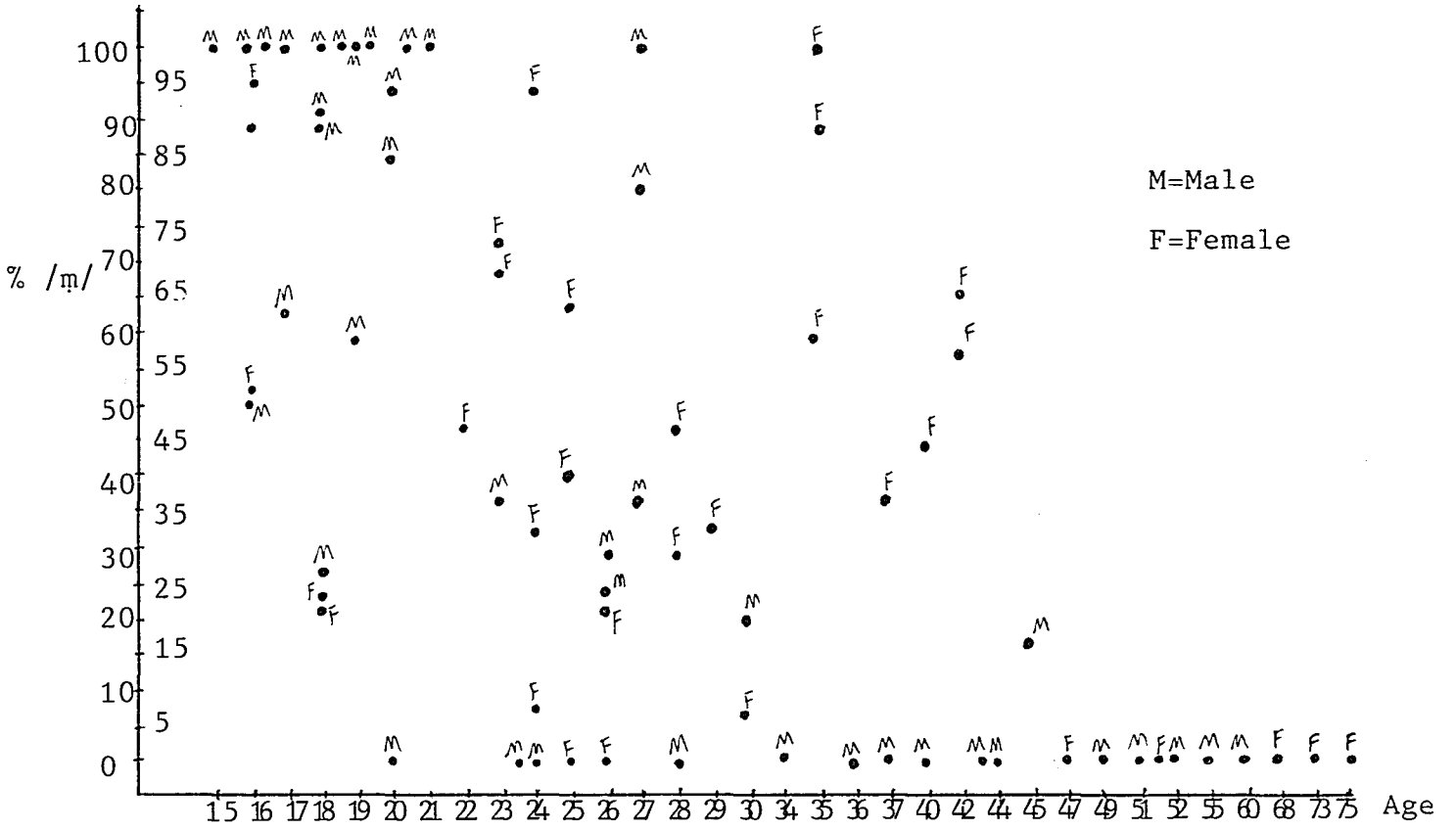


Figure 5. % /m/ in Story and Word Lists by age and sex of subjects (two % /m/-scores averaged as one)

Table 9. Distribution of subjects in three categories according to their use of the ŋ/m̩ variable in Spontaneous Speech and Reading the Story and Word Lists

Age Groups	Spontaneous Speech and Naming Pieces of Hong Kong Money		Reading the Story and Word Lists	
	Variagle Category	Number of Subjects in this Category (M=Male, F=Female)	Variable Category	Number of Subjects in this Category (M=Male, F=Female)
A(15-22)	m̩	17(68%)=16M(80%) 1F(20%)	m̩	10(40%)=10M(50%) 0F
	ŋ/m̩	8(32%)= 4M(20%) 4F(80%)	ŋ/m̩	14(56%)= 9M(45%) 5F(100%)
		25 Subjects	ŋ	1(4%)= 1M(5%) 0F
B(23-30)	m̩	9(37%)= 3M(30%) 6F(43%)	m̩	1(4%)= 1M(10%) 0F
	ŋ/m̩	11(46%)= 5M(50%) 6F(43%)	ŋ/m̩	19(79%)= 6M(60%) 13F(93%)
	ŋ	4(17%)= 2M(20%) 2F(14%)	ŋ	4(17%)= 3M(30%) 1F(7%)
		24 Subjects		
C(31-44)	m̩	3(21%)= 0M 3F(38%)	m̩	1(7%)= 0M 1F(12.5%)
	ŋ/m̩	7(50%)= 2M(33%) 5F(62%)	ŋ/m̩	6(43%)= 0M 6F(75.0%)
	ŋ	4(29%)= 4M(67%) 0F	ŋ	7(50%)= 6M(100%) 1F(12.5%)
		14 Subjects		
D(45+)	ŋ/m̩	1(8%)= 0M 1F(17%)	ŋ/m̩	1(8%)= 1M(17%) 0F
	ŋ	11(92%)= 6M 5F(83%)	ŋ	11(92%)= 5M(83%) 6F(100%)
		12 Subjects		

in reading the Story and Word Lists. The number of men who used only /m̥/ dropped from three in Spontaneous Speech to one in reading. The number of men using /ŋ̥/ increased from two in Spontaneous Speech to three in reading. For Age Group C (31-44) there was an increase in the number of men who used /ŋ̥/ from four in Spontaneous Speech to six in reading which represented all the men of this age group. The number of females who used only /m̥/ dropped from three in Spontaneous Speech to one in the reading; one joined the ŋ̥/m̥ variation category and the other moved to the /ŋ̥/ category. For Age Group D (45+) there was little change from the use of the variable in Spontaneous Speech to its use in reading. In Spontaneous Speech all males and five out of six females used /ŋ̥/. In reading the Story and Word Lists all females and five out of six males used /ŋ̥/. There was one 45 year-old male who used 16% /m̥/ by reading three words out of 19 words in the SC /ŋ̥/-category as /m̥/.

Figures 6.1 and 6.2, % /m̥/ for Male and Female Subjects in Four Age Groups and Three Speech Contexts, compresses the previous two scattergrams of Figures 4 and 5 into line curves in order to compare the % /m̥/ for both sexes, four age groups, and three speech contexts (Spontaneous Speech and Hong Kong Money section are averaged as one speech context). The % /m̥/-scores for each age group was obtained by averaging the scores for all the members of each age group. Table 10 below, % /m̥/-scores for Males and Females in Four Age Groups and for Three Speech Contexts, contains

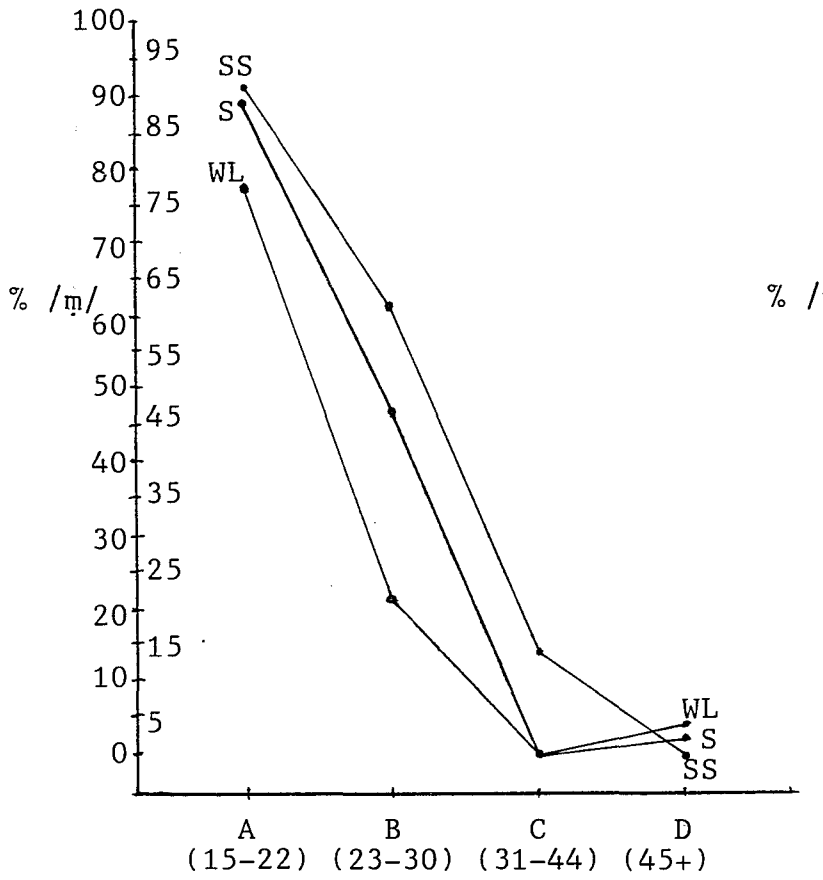


Figure 6.1. Males

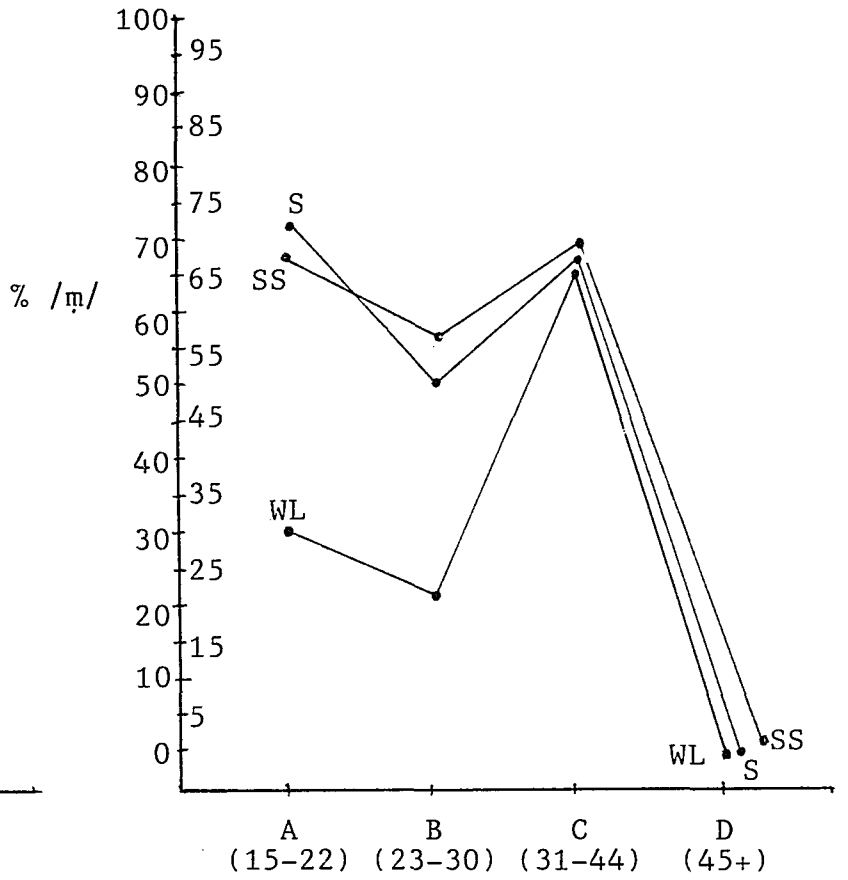


Figure 6.2. Females

Figures 6.1. and 6.2. % /ṃ/ for male and female subjects in four age groups and three speech contexts (Age Groups: A, 15-22 years of age; B, 23-30 years; C, 31-44 years; D, 45+ years; SS=Spontaneous Speech; S=Story; WL=Word Lists)

the % /m̥/-scores on which Figures 6.1 and 6.2 are based.

Speech Context	Age Groups A (15-22) M	F	B (23-30) M	F	C (31-44) M	F	D (45+) M	F
Spontaneous Speech	91	68	61	56	14	69	0	1
Story	89	72	47	50	0	67	2	0
Word Lists	77	30	21	21	0	66	3	0

Table 10. % /m̥/-scores for Males and Females in Four Age Groups and for Three Speech Contexts

In Figure 6.1 for males we observe that as age increases, there is a steep decline in the % /m̥/ used by subjects. Furthermore, as the formality of the speech context increases from Spontaneous Speech to reading the Word Lists, the % /m̥/ that occurs also shows a sharp drop. Age Group B (23-30) shows the sharpest decline from 61% /m̥/ in Spontaneous Speech to 21% /m̥/ for the Word List style. Age Group A (15-22), however, retains a high % /m̥/ for all three speech contexts: 91% /m̥/ for Spontaneous Speech; 89% /m/ for the Story; and 77% /m̥/ for the Word Lists. Age Group C (31-44) subjects had an average of 14% /m̥/ for Spontaneous Speech, while their use of /m̥/ dropped to 0% in both the Story and the Word Lists. Among Age Group D (45+) subjects there was only one who used any /m̥/ which gave this age group an average of 2% /m̥/ for the Story and 3% /m̥/ for the Word Lists.

Figure 6.2 for females contrasts markedly with the male graph. As age increases, the sharp drop in % /m̥/ does not occur until Age Group D (45+), whereas with the males it occurs with Age Group C (31-44). With the female age groups the % /m̥/-scores for Spontaneous Speech and the Story remain relatively high across Age Groups A, B, and C. The curve dips from 68% /m̥/ in Spontaneous Speech for A to 56% /m̥/ for B, but with C the curve rebounds to 69% /m̥/ to rival the level of A. Age Groups A and B show a steep drop in % /m̥/ from Spontaneous Speech style to Word List style: A shows the sharpest correction of any group by declining from 72% for Spontaneous Speech to 30% /m̥/ for Word List style; B falls lower still to 21% for Word List style from 50% /m̥/ in Spontaneous Speech although the drop was not as great as for A. Age Group C, on the other hand, returns the curve for the Word List style to the same high level of 66% /m̥/ so that this group maintains almost the same % /m̥/ for all three styles. Age Group D (45+) subjects do not use /m̥/ in either the Story or the Word Lists; only one subject used /m̥/ in Spontaneous Speech as the result of labial assimilation to give this group an average of 1% /m̥/ for this style.

A comparison of male and female age groups reveals a remarkable similarity in % /m̥/-scores for male and female subjects in Age Group B (23-30) across all three speech contexts: B-males have 61% /m̥/ for Spontaneous Speech and B-females have 56% /m/; B-males used 47% /m̥/ in the Story, while B-females used 50% /m̥/; for the Word Lists both groups

used 21% /m̩/. Scores for male and female subjects in Age Group A (15-22) seem to have little in common: A-males used higher % /m̩/ for all three contexts (91% /m̩/ in Spontaneous Speech, 89% /m̩/ in Story, 77% /m̩/ in Word Lists) than A-females (68% /m̩/ in Spontaneous Speech, 72% /m̩/ in Story, 30% /m̩/ in Word Lists); also, A-females correct more sharply to the standard form of the variable in the Word Lists (30% /m̩/) than males do (77% /m̩/). The one thing A-group males and females have in common is that the males' % /m̩/-scores are higher than any other age group of males, and the A-females' % /m̩/-scores are higher than any other age group of females. Males and females in Age Group C also differ in their use of /m̩/: C-males use very little /m̩/ in their Spontaneous Speech (14%) and no /m̩/ at all when reading the Story and Word Lists. C-females, however, use a high % /m̩/ for all three styles: 69% /m̩/ in Spontaneous Speech; 67% /m̩/ in the Story; and 66% /m̩/ in the Word Lists. Both males and females in Age Group D are alike in their use of only /ŋ̩/ for all three speech styles.

In extrapolating these findings to the Hong Kong speech community, we can predict that young men between the ages of 15 and 22 will use more /m̩/ than young women of this age group, and both groups will use more /m̩/ than other males and females in older age groups of the speech community. Further, men and women between the ages of 23 and 30 show relatively close similarity in their use of /m̩/. However, females between the ages of 31 and 44 are predicted to use much more /m̩/ on the average than males of the same age group.

The question naturally arises, why should this be? That this group of females is more advanced in the use of /m̥/ than men of the same age group falls in line with Labov's observation: "It seems likely that the rate of advance and direction of a linguistic change owes a great deal to the special sensitivity of women to the whole process" (Labov 1972b:303). My hypothesis is that the introduction of this sound change coincided with this particular female age group's critical language-learning period, approximately twenty-five to thirty-five years ago, when they were between the ages of four and eighteen.

Men and women over the age of 45 can be expected only rarely to use /m̥/ and then only as the consequence of labial assimilation. This is because at the time the sound change entered the language this group of speakers had already passed through the critical language-learning period.

Up till now we have only been concerned with how the speaker's age and sex correlate with his or her use of the variable. Let us now consider how the speaker's educational level, i.e., the number of years of formal schooling the subject has received, influences the use of /m̥/. Table 8 above included three educational levels: I, 14 to 16 years of formal schooling; II, 11 to 12 years of formal schooling; and III, 0 to 10 years of formal schooling. Tables 11.1 and 11.2, % /m/ for Males and Females in Three Speech Contexts by Subject Identification Number, Age Group, and Educational Level, list each of the matrix cells from Table 8 along with

Table 11.1. % /m/ for males in three speech contexts by subject idnetification number, age group, and educational level. (SN= Subject Identification Number; SSM=Spontaneous Speech and Hong Kong Money; S= Story; WL=Word Lists; EL=Educational Level, I=14-16 years of schooling, II=11-13 years, and III=0-10 years)

EL	AGE GROUPS															
	A (15-22)				B (23-30)				C (31-44)				D (45+)			
	SN	SSM	S	WL	SN	SSM	S	WL	SN	SSM	S	WL	SN	SSM	S	WL
I					23	0	0	0	32	0	0	0				
					24	0	0	0	35	0	0	0				
					25	81	50	0								
					28	100	100	100								
					29	60	63	18								
					30	17	0	0								
					6 S	258	213	118	2 S	0	0	0				
					% m	43%	36%	20%	% m	0%	0%	0%				
II	4	100	100	75					33	69	0	0	39	0	0	0
	10	100	100	100					34	17	0	0	40	0	0	0
	11	78	38	18					37	0	0	0				
	17	100	88	81												
	18	21	0	0												
	20	100	100	100												
	6 S	499	426	374					3 S	86	0	0	2 S	0	0	0
	% m	83%	71%	62%						29%	0%	0%	% m	0%	0%	0%
III	1	100	100	100	22	80	63	18	36	0	0	0	38	0	13	18
	2	100	100	100	26	75	63	0					41	0	0	0
	3	100	100	100	27	100	88	71					42	0	0	0
	5	100	100	17	31	100	38	0					43	0	0	0
	6	100	88	45												
	7	100	100	100												
	8	100	100	83												
	9	100	100	100												
	12	77	100	80												
	13	48	63	57												
	14	100	100	100												
	15	100	100	100												
	16	100	100	90												
	19	100	100	100												
	14 S	1325	1351	1172	4 S	355	252	89	1 S	0	0	0	4 S	0	13	18
	% m	95%	97%	84%	% m	89%	63%	22%	% m	0%	0%	0%	% m	0%	3%	5%

Table 11.2 % /m/ for females in three speech contexts by subject identification number, age group, and educational level. (SN=Subject Identification Number; SSM=Spontaneous Speech and Hong Kong Money; S=Story; WL=Word Lists; EL=Educational Level, I=14-16 years of schooling, II=11-13 years, and III=10 years)

EL	AGE GROUPS															
	A (15-22)				B (23-30)				C (31-44)				D (45+)			
	SN	SSM	S	WL	SN	SSM	S	WL	SN	SSM	S	WL	SN	SSM	S	WL
I	49	67	78	30	51	100	88	55	66	100	87	50	75	0	--	0
					53	50	50	23								
					57	21	0	0								
					58	13	0	0								
					59	0	33	10								
					60	23	75	0								
					61	100	38	17								
	1S	67	78	30	6S	307	284	105	1 S	100	87	50	1 S	0	--	0
	% m	67%	78%	30%		44%	41%	15%	% m	100%	87%	50%	% m	0%	--	0%
II	44	43	88	31	50	100	88	57	65	100	100	100				
	47	100	50	0	52	73	100	90	68	100	57	36				
					54	100	13	0								
					55	100	88	33								
					56	100	63	14								
					62	10	63	0								
	2 S	143	138	31	6 S	483	415	194	2 S	200	157	136				
	% m	72%	69%	16%	% m	81%	69%	32%	% m	100%	79%	68%				
III	45	88	100	91	63	0	11	0	64	80	71	100	72	0	--	—
	48	43	44	0					67	75	50	27	73	6	0	0
									69	33	38	89	74	0	0	0
									70	36	63	58	76	0	0	0
									71	30	--	--	77	0	0	0
	2 S	131	144	91	1 S	0	11	0	5 S	254	222	274	5 S	6	0	0
	% m	66%	72%	46%		0%	11%	0%	% m	51%	56%*	56%*		1%	0%	0%

*% /m/ based on 4 Subjects

the subjects who fill each cell and the % /m̩/ each subject used in the three speech contexts of Spontaneous Speech and Hong Kong Money section, reading the Story, and reading the Word Lists. In addition, %-scores for each context have been averaged to give a score for each group of subjects which corresponds to a matrix cell. Figure 7, % /m̩/ for Three Speech Contexts by Sex, Age Group, and Educational Level, plots on a graph these percent averages from Tables 11.1 and 11.2 for the three speech contexts and for each group of subjects who show variation in the use of the variable. From Figure 7 we can make the following observations: Men and women with the highest educational level of 14 to 16 years of formal schooling and between the ages of 23 and 30, i.e., groups I-B-M and I-B-F, behave remarkably similarly in their use of the variable. The same observation was made earlier but did not take education into consideration. Both groups use approximately the same percentage of /m̩/ in their casual speech, 44% /m̩/ for women and 43% /m̩/ for men. When reading the Story the women show little change in their use of /m̩/ which drops only one point to 43% /m̩/. However, the men's use declines a bit more from 43% to 36% /m/ for the Story. Both groups correct sharply to the standard velar nasal when reading the Word Lists with women in the lead using 15% /m̩/ and men 20% /m̩/. These two groups of speakers are also the second lowest in their use of the variable for all three speech contexts; only the men with 11 to 12 years of schooling and between the ages of 31 and 44--II-C-M--

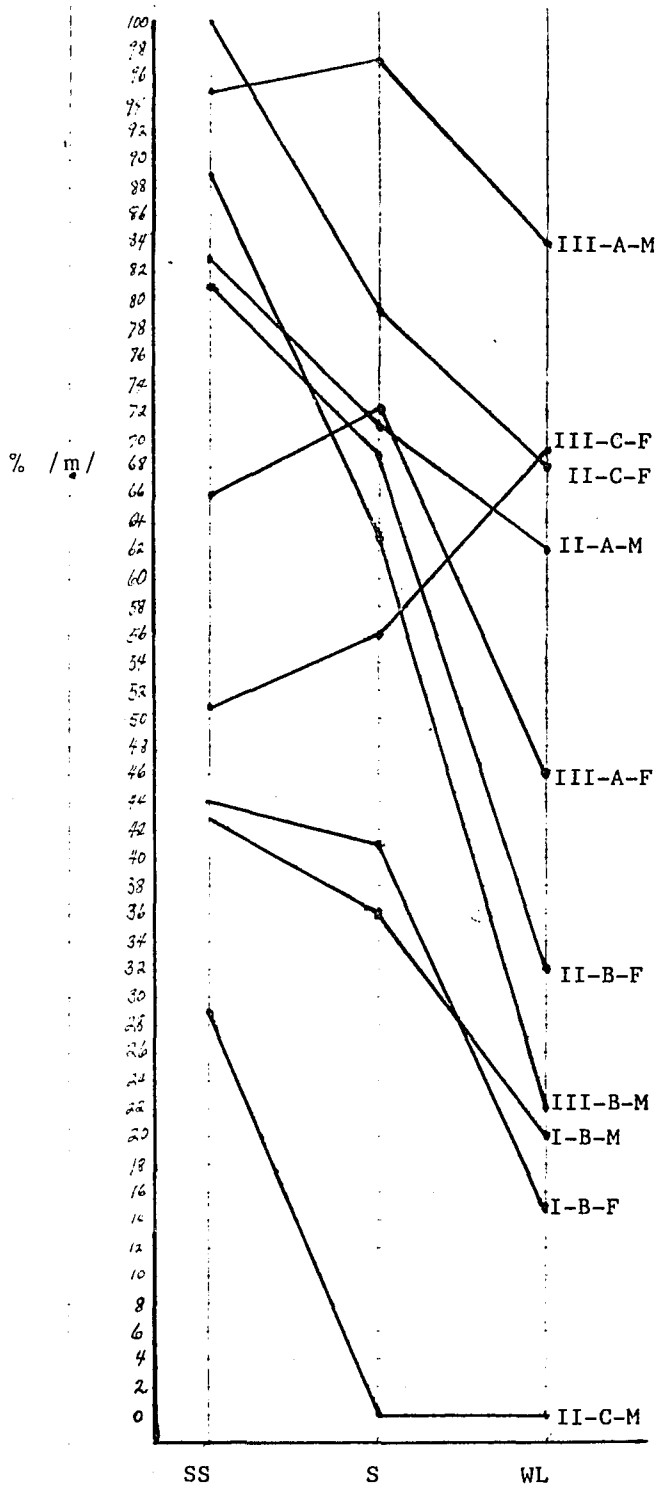


Figure 7. % /m/ for Three Speech Contexts by Sex, Age Group, and Educational Level

Educational Level (yrs of schooling)

I....14-16 years
II...11-13 years
III...0-10 years

Age Groups

A....15-22 years old
B....23-30 years old
C....31-44 years old
D....45+ years old

M = Male
F = Female

Speech Contexts:

SS = Spontaneous Speech
S = Story

WL = Word Lists

use less % /ṃ/ at 29% for Spontaneous Speech and 0% /ṃ/ for reading the Story and Word Lists. The majority of female subjects in group I-B-F are employed as high school teachers: five out of seven of the subjects are teachers. Two of the male subjects are teachers. Since teachers are conscious of acting as role models for their students, we might reasonably expect them to be relatively more sensitive to normative pronunciation than people in other occupations.

A second observation based on the graph is that the III-B-M group, young men with the lowest educational level of 0 to 10 years of schooling and between the ages of 23 and 30, use more than twice as much % /ṃ/ in their Spontaneous Speech at 89% /ṃ/ than the I-B-M subjects with 43% /ṃ/ who are in the same age group but have the highest educational level. When the men with the lowest educational level read the Story their use of /ṃ/ drops to 63%, but when they read the Word Lists their use is 22% /ṃ/ which is almost the same as the young men with the highest educational level who use 20%. This indicates that even the less educated males recognize the standard form and are able to switch to /ŋ/ in a formal speech context such as reading a list of words. The slope of the curve for the III-B-M subjects is fairly similar to the slope of the curve for the II-B-F subjects. The young women's use of /ṃ/ in their Spontaneous Speech at 81% /ṃ/ is slightly lower than the men whose use was 89% /ṃ/. However, when the young men read the Story, their lower use of /ṃ/ causes the curve to cross over the

young women's curve; the young men use 63% /ṃ/ and the young women use 69% /ṃ/. Both groups correct sharply to the velar nasal when reading the word lists with the young men using less /ṃ/ at 22% than the young women at 32% /ṃ/.

The group of subjects with the highest % /ṃ/ for all speech contexts are the III-A-M subjects, young men between the ages of 15 and 22 with the lowest educational level of 0 to 10 years of schooling: they use 95% /ṃ/ in their Spontaneous Speech, 98% /ṃ/ when they read the Story, and 84% /ṃ/ when they read the Word Lists. There were only two females in the III-A-F group so their use of the variable may or may not be indicative of other young women with this age range and educational level. They used an average of 66% /ṃ/ in Spontaneous Speech, 72% /ṃ/ in the Story, and 46% /ṃ/ in the Word Lists, about 30% less on the average than the comparable group of young men. Young men between the ages of 15 and 22 with 11 to 12 years of schooling, the II-A-M group, used a much lower rate of % /ṃ/ for all three contexts than the III-A-M subjects which indicates that more education correlates with a lower % /ṃ/-score. When the II-A-M subjects read the Story, their use of /ṃ/ declined to 71% from 83% in Spontaneous Speech; when they read the Word Lists, the decline continued to 62% /ṃ/. Their use of /ṃ/ averages 20% less than the III-A-M subjects for the three speech contexts.

The widest extreme in the use of /ṃ/ is to be found in the men and women between the ages of 31 and 44 with 11 to 12 years of schooling, II-C-M and II-C-F. There were only

two women in group II-C-F, so our conclusions can only be tentative. These two women used 100% /m̩/ in their Spontaneous Speech while men in the comparable group used an average of only 29% /m̩/. One woman in fact has a complete change to /m̩/ for all three speech contexts. The other woman used /m̩/ only in naming the money but used both /ŋ/ and /m̩/ when reading the Story and Word Lists. While the women's % /m̩/-scores are high in the reading contexts, the men's scores drop to 0%. In my follow-up research in the future, I will recruit more subjects to supplement those in these groups.

Figure 7 does not include any plots for groups of speakers over the age of 44 because these groups only used /ŋ/. Subject 38 aged 45 is an exception in that he used 13% /m̩/ when reading the Story and 18% when reading the Word Lists; his Spontaneous Speech, however, contained no instances of /m̩/. At this time I can offer no explanation to account for this subject's use of /m̩/.

The group of subjects with the most deviant pattern in their use of /m̩/ consists of women between the ages of 31 and 44 with 0 to 10 years of schooling, III-C-F. With this group we see an actual increase in the use of /m̩/ as the speech context becomes more formal: in their Spontaneous Speech these women used 51% /m̩/, in reading the Story 56% /m/, and in reading the Word Lists 69% /m̩/. This pattern suggests that some of the women were unsure about which form of the variable was the appropriate one since they are in the habit of using both forms and may have believed that /m̩/ was the

correct pronunciation.

Figures 8.1 and 8.2, % /ṃ/ in Spontaneous Speech Distributed through Four Age Groups and Three Educational Levels, reveals how the subjects' use of /ṃ/ varies as age varies but educational level remains constant. This kind of figure is referred to by Labov as a distribution of the variable in "apparent time"(Labov 1966:319). By comparing the differences in the use of the phonological variable by different age groups, we are able to see the direction of phonological change and can make generalizations about it and the groups of speakers. Figure 8.1 for the male subjects clearly shows that as the subject's age increases the use of /ṃ/ declines steeply to be nonexistent for speakers in Age Group C with educational levels I and III and Age Group D with educational levels II and III. Group II-C-M with two subjects has the lowest % /ṃ/ at 29% for any group of males in the figure. Variation by this group may hold significant implications for the development of the sound change. More will be said about this point at the end of this section.

Figure 8.2 for females shows a similar decline to 0% for the oldest female speakers in the D group. The interesting thing to note, however, is the 100% /ṃ/ for the the three women in Age Group C with educational levels I and II and the 51% /ṃ/ for five women of the same age group but with educational level III. Here we see the lowest educational level using a lower % /ṃ/ than the subjects with the highest and middle levels of education. This suggests that the change to

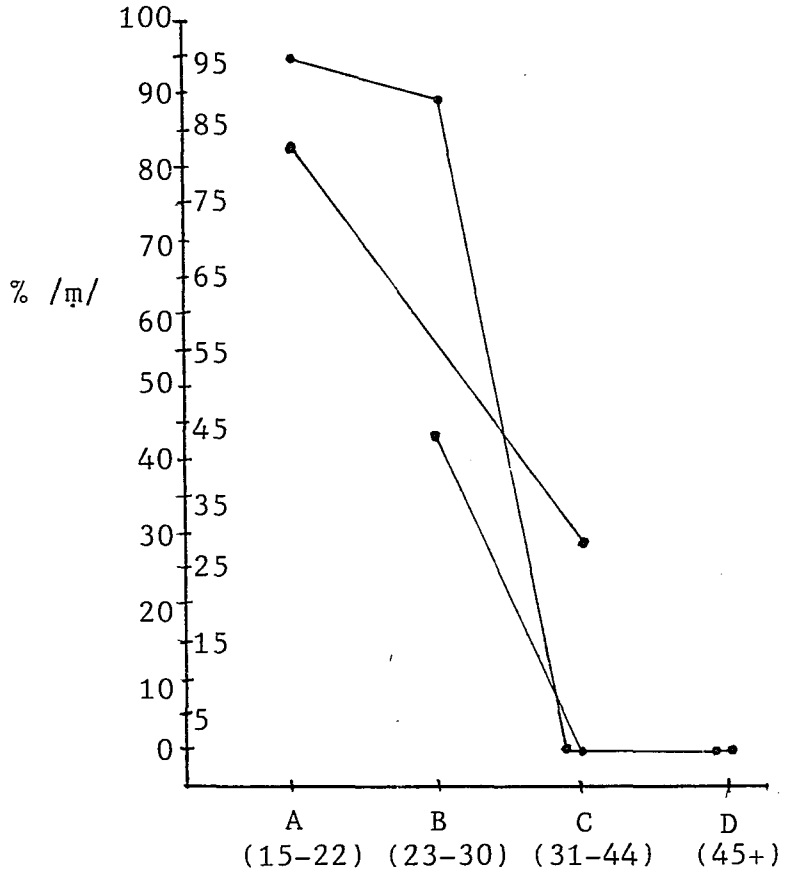


Figure 8.1. Males

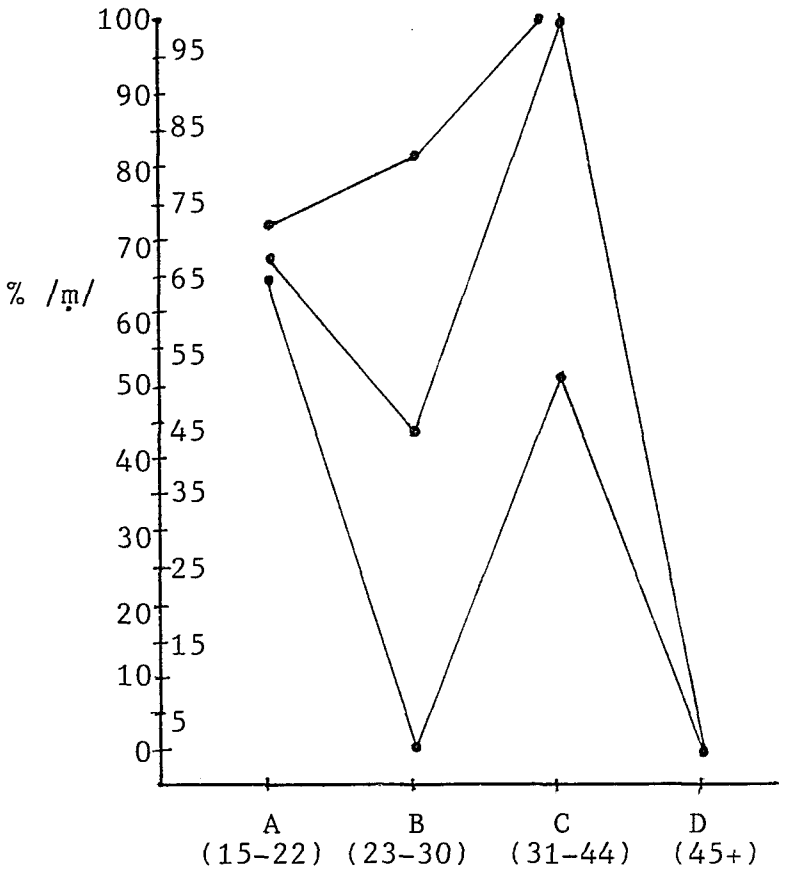


Figure 8.2. Females

Figures 8.1. and 8.2. % /m̥/ in Spontaneous Speech distributed across age groups with educational level held constant

/m̩/ has achieved acceptance in the higher status group and that /m̩/ has no social stigma associated with its use. In addition, the fact that the second oldest group of female subjects, those between ages 31 and 44, shows variation between /ŋ̩/ and /m̩/, while the oldest group of subjects aged 45 and over do not, suggests to me that the change to /m̩/ began with the generation of speakers now in their early 40's more than 30 years ago when these subjects were at the critical age of learning language and acquiring the social values associated with the community's standard and nonstandard varieties of speech. Looking back at Table 12.2 which listed % /m̩/ for three speech contexts by individual female subjects and groups of female subjects and Table 4 in Chapter 2 which lists the ages of subjects, we notice that Subjects # 68 (aged 40), 69 (aged 42), and 70 (aged 42) have variation between /ŋ̩/ and /m̩/. (Subject #71 aged 44 used /m̩/ in Spontaneous Speech only as the result of labial assimilation). For six female subjects over age 45, the only use of /m̩/ occurred only one time for Subject #73 (aged 47) as the result of labial assimilation. When the change to /m̩/ began in Hong Kong Cantonese in the 1940's, these subjects were already too old to have been affected by it, so it was left to younger speakers to acquire /m̩/ as a variant of /ŋ̩/. As we saw in Figure 4, % /m̩/ for Spontaneous Speech and Naming Pieces of Hong Kong Money, there were two 35 year-old women (Subjects #65 and 66) who have a complete to /m̩/ in their Spontaneous Speech (for #66 only "five" has undergone a

complete change to /m̩/ in all three speech contexts). Men in their mid-30's have also been affected by the change to /m̩/ but less so than the women: Subjec #33 (aged 36) used an average of 69% /m̩/ in his Spontaneous Speech but switched exclusively to /ŋ̩/ when reading the Story and the Word Lists. I tentatively conclude on the basis of these findings that women betwen the ages of 31 and 44 introduced the change to /m̩/ into the language. Its use among them does not necessarily correlate with their levels of education or the formality of the speech situation. Younger women with more schooling are able to control their use of /m̩/ in formal speech contexts and apparently recognize /m̩/ as the nonstandard variant of /ŋ̩/.

More data from additional men and women subjects between the ages of 31 and 49 and from the range of educational levels would provide us with a more substantial foundation on which to base our conclusions. With more subjects from this age range I think it would be possible to narrow the age range of speakers with whom the change to /m̩/ began. In the introduction to this dissertation I compared the systematicity of sociolinguistic patterns to the regularity of concentric rings in a cross-sectional slice of a tree. I would like to reintroduce here tree rings as a metaphor for phonological change. When the sociolinguist takes a cross-sectional sample of the speech community, he selects subjects who represent a range of ages. In this study there were four age groups: A, 15 to 22 years of age; B, 23 to 30; C, 31 to

44; and D, over age 45. We can think of these age groups as forming concentric age-range bands just like tree rings as shown in Figure 9 below:

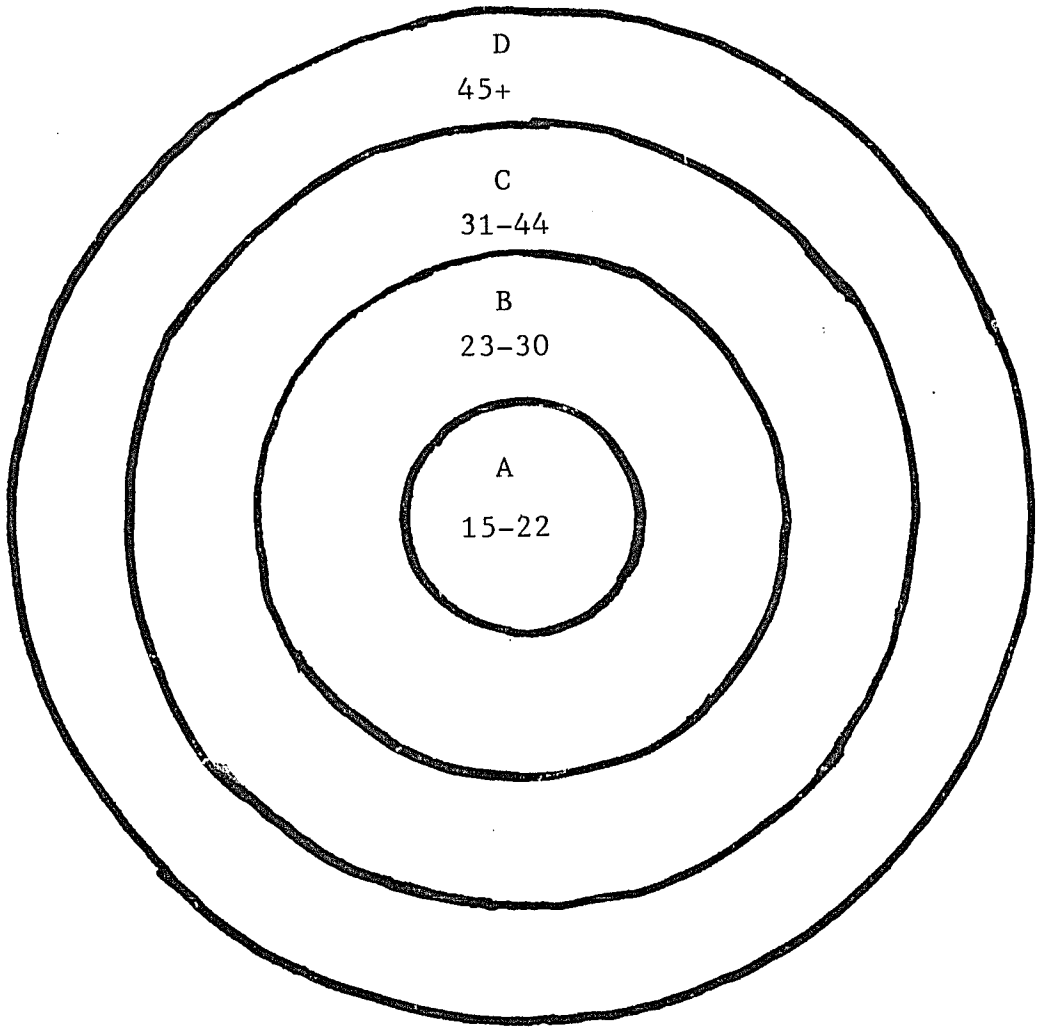


Figure 9

To determine the age group with which a sound change originated, it is the task of the sociolinguist to identify the age group which has variation between sounds X and Y because this group corresponds to the transitional stage in the history of a sound change when the change entered the language and was adopted by speakers. The reasoning behind this claim is as follows: First, a sound change passes through three main stages: in the beginning, sound X has no competition with sound Y; later, variation between X and Y arises, i.e., the transitional period; and finally, Y has replaced X in the last stage of the change. This process can be represented two-dimensionally in a figure of concentric rings as shown below in Figure 10:

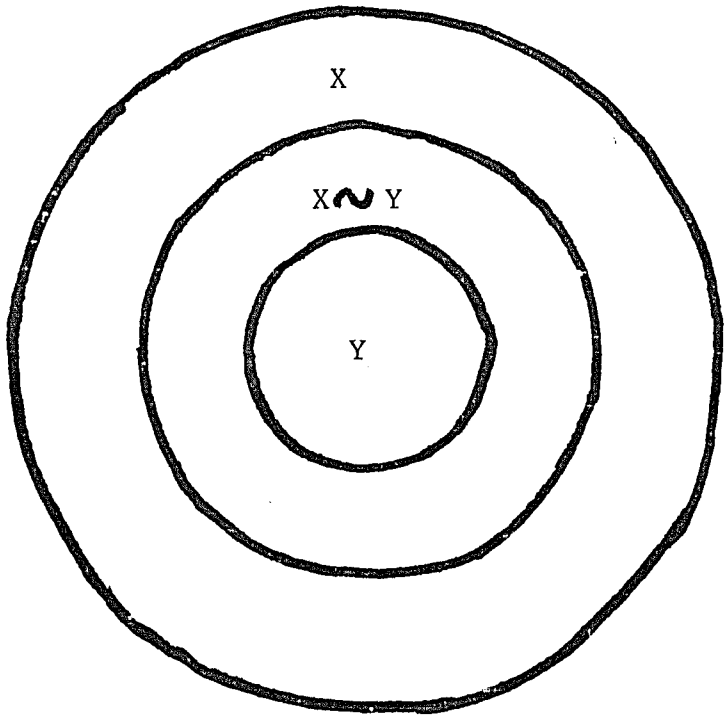
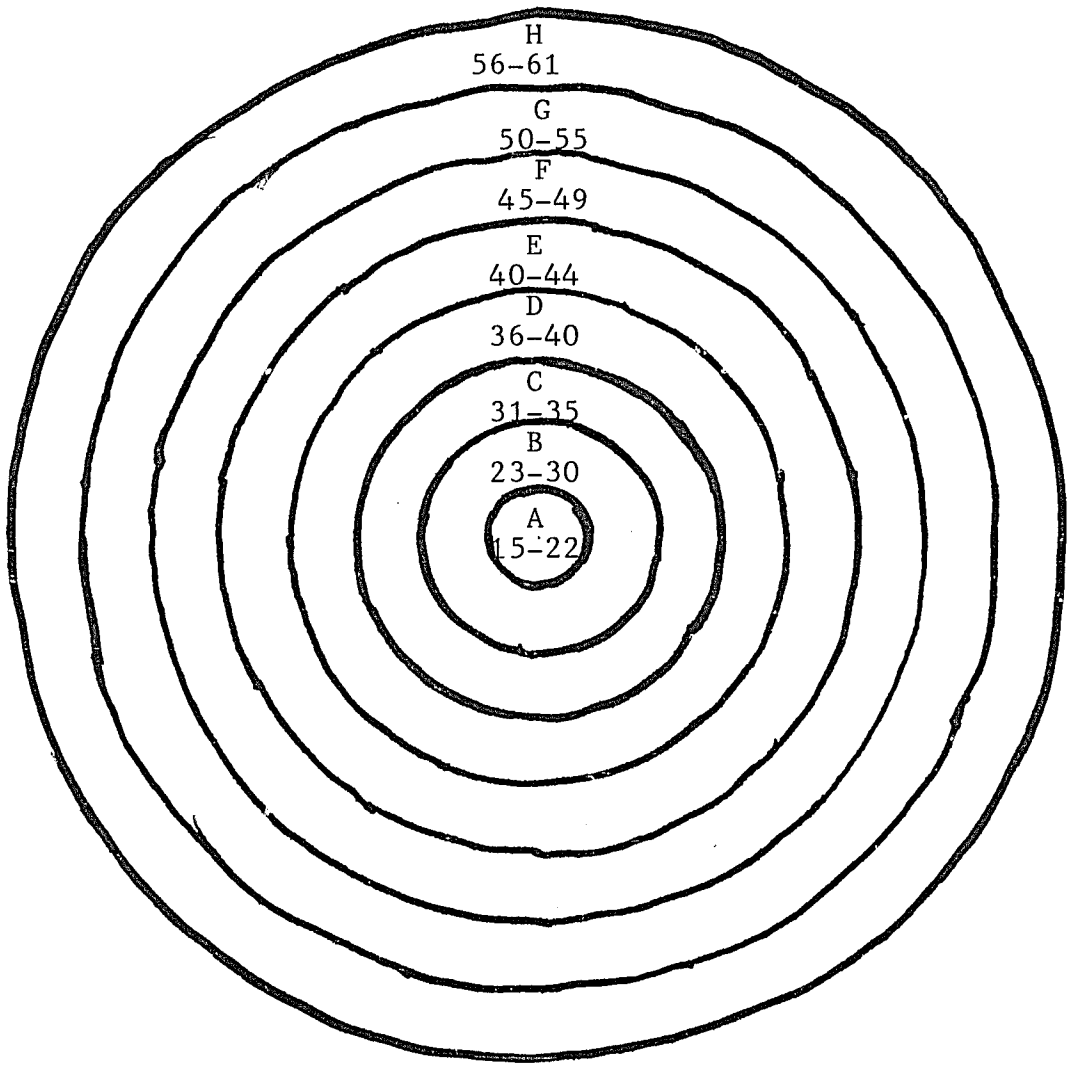


Figure 10

A second important concept underlying the claim that the age group with variation between sounds X and Y corresponds to the transitional stage in the history of the sound change is that a speaker's consistent habits of pronunciation have become more or less firmly established for life by the time the person has reached his or her late teens (Labov 1972b:138-139). If the sociolinguist can identify the particular age range of subjects with variation, he can extrapolate backwards to the time when this group of subjects was in their teens and thus determine the time span during which the change was becoming a part of the group's speech patterns.

In a future research project I propose interviewing additional subjects representing narrower age ranges and more age groups. These age groups are as follows: C, 31-35; D, 36-40; E, 41-45; and F, 46-49. I regard these groups as being particularly important to the further investigation of the change of /ŋ/ to /m̩/. Figure 11 below represents these age groups in a series of concentric bands.

Figure 10 above can be regarded as representing not only the diachronic view but also the synchronic view of sound change in progress. That is, the three historical stages of a sound change in progress as shown in Figure 10 coincide with the patterns associated with the use of the phonological variable which chronologically demarcate subgroups of the speech community. Figure 11 segments our cross-sectional representation of the speech community



Revised Age Groups

Figure 11

into specific subgroups, but as we have seen, there is a mixture of patterns within subgroups which appear to correspond to the transitional stage of the sound change in progress. Superimposing Figure 10 on Figure 11 shows that the oldest age group F which corresponds to this study's Age Group D whose subjects were found to be largely unaffected by the sound change of /ŋ/ to /m̩/ is congruent with the outer ring of Figure 10 labelled X. The age groups with variation between /ŋ/ and /m̩/ in all three speech contexts are our new groups C, D, and E (and there may be some overlap with F in which case it will have to be further subdivided). These groups coincide with the middle ring of Figure 10 labelled X Y in which there is variation between the two forms of the phonological variable. Finally, Age Group A whose subjects predominantly have a complete change to /m̩/ is congruent with the inner ring of Figure 10 labelled Y. Age Group B overlaps with both the variation stage and the stage of complete change.

4.0 SC kw- → k-/__o(C)

4.1 Introduction

From the point of view of the number of speakers it has affected, the more pervasive sound change of the two discussed in this report is the delabialization of the labialized velar initials before the low back rounded vowel /ɔ/ (represented in the transcription system used here as /o/). In Standard Cantonese there are both voiceless unaspirated and aspirated labialized velar initials /kw-/ and /k'w-/ in phonemic contrast with a corresponding pair of plain, i.e., nonlabialized velar initials, /k-/ and /k'-/. As examples of the phonemic contrast of /kw-/ and /k-/ before /o/, we can cite the following lexical items:

光	SC /kwɔn/ "bright"	江	SC /kon/ "river"
廣	SC /kwon/ "broad"	講	SC /kon/ "to speak"
		港	SC /kon/ "port"
國	SC /kwok/ "country"	各	SC /kok/ "each"
郭	SC /kwok/ "surname"	角	SC /kok/ "horn"
過	SC /kwo/ "to cross"	個	SC /ko/ "classifier"

A process of delabialization of the SC /kw-/ velar initial series has caused it to merge with the plain velar initial series /k-/. The rule for this delabialization process can be formalized as follows:

SC kw- → k- /__o (C)

This rule states that the Standard Cantonese labialized velar /kw-/ becomes a plain velar when followed by /o/ or /o/ plus an optional consonant which can be either velar nasal ending

/-ŋ/ or velar stop ending /-k/.

In my experience in Hong Kong almost all Cantonese speakers I came in direct contact with, and this is particularly true of younger people regardless of their educational level, have a complete merger of the two velar initial series in their casual speech style. The only people I met in Hong Kong who maintained a contrast between /kw-/ and /k-/ were almost always older people aged 35 and over. People who used /kwo(C)/ the most consistently were typically in their 50's, 60's, and 70's. Even though we might expect preservation of the standard form by the broadcasting industry, nevertheless I observed the change to permeate the speech of some radio and television announcers. During my time in Hong Kong I heard television and radio news announcers and television soap opera actors use /kō/ for 過 and /kōk/ for 國. In the course of listening to weather forecasts on three different radio stations on a stormy morning in April 1981, I heard the word 狂 SC /k'wòŋ/ "violent" in the phrase 狂風驟雨 SC /k'wòŋ fûŋ tsǎu jÿ/ "gale force winds and heavy rain" spoken by three different radio announcers. A male announcer and a female announcer both said /k'òŋ/, while a second female announcer used the standard form /k'woŋ/. Criticizing their nonstandard pronunciation, a Chinese University professor blames announcers for their lack of linguistics knowledge: "[b]roadcasters are often unaware that some characters have more than one pronunciation or are pronounced differently when read and when spoken"

(Chinese University Bulletin 1979:4). However, not all public speakers are unaware of the standard pronunciation. In August 1981 I attended the Cantonese version of the Hong Kong Space Museum's Space Theatre Sky Show and noted that the narrator who sounded like a man in his late 20's or early 30's scrupulously preserved the labialized velar initial before /o/, e.g., two lexical items I heard him say were 光 /kwôŋ/ and 過 /kwō/.

As the findings of this study on the change of /kw-/ to /k-/ will show, the majority of the study's subjects use /k-/ instead of /kw-/ in their Spontaneous Speech. For example, in the case of the male subjects, 31 out of 42 or 74% use only /k-/ for the SC /kwo(C)/-class of words in their Spontaneous Speech. The other 11 subjects use both /kw-/ and /k-/. None of the male subjects consistenly and appropriately used /kw-/ in his Spontaneous Speech. There were 15 female subjects or 45% who used only /k-/ for SC /kw-(C)/ words in their Spontaneous Speech and have a complete change to /k-/ in this section of the interview. There were 17 female subjects or 52% who used both /kw-/ and and /k-/ in their Spontaneous Speech and have variation between /kw-/ and /k-/ for the same lexical item. Only one female subject, a 68-year old graduate of the University of Hong Kong who was born and raised in Hong Kong, consistently and appropriately used SC /kw-/.

When the subjects with variation between SC /kwo(C)/ and /ko(C)/ read the Nursery Rhyme, Story, and Word Lists,

their use of the standard /kwo(C)/ forms showed an increase. The speaker's recognition of a normative reading pronunciation may have been acquired from school teachers. The loss of the contrast between /kw-/ and /k-/ has been noted in teaching materials designed for teachers to help "correct" their students' mispronunciation. For example, Mo Chao-hung's little book, Teaching Cantonese Language and the Study of Pronunciation (粵語教學與讀音研究) published in 1961, draws attention to several deviations from the standard form of Cantonese pronunciation: he observes that the merger of /kw-/ and /k-/ to /k-/ occurs not just before /o/ but before /a/ as well for some students, so that 瓜 SC /kwâ/ "melon" and 家 SC/kâ/ "family" are pronounced /ka/ (Mo 1961:6). The Chinese Language and Literature textbook (中國語文科), a curriculum outline for middle school teachers prepared by the Hong Kong Curriculum Development Committee in 1975, lists the loss of the labialization contrast as one of three commonly encountered errors in Cantonese pronunciation. This textbook cites 光 and 江 , 廣 and 講 , and 廓 SC /k'wōk/ and 確 SC /k'ōk/ as examples of lexical items distinguished by the labialized velar contrast (Hong Kong Curriculum Development Committee 1975:89). Just how much of an impact such teaching materials have on teachers may be an open question. The same Chinese University professor who was quoted earlier criticizing radio and television announcers has also blamed Hong Kong school teachers for the decline in Standard Cantonese pronunciation: "The

present confusion in Hong Kong over Cantonese pronunciation is, to put it bluntly, attributable to teachers who cannot be bothered to look up in dictionaries and rhyme books [!] the characters the pronunciation of which they are not too sure of" (Chinese University Bulletin 1979:4). Nevertheless, the younger subjects' experiences in school with the standard pronunciation of the SC /kwo(C)/-class of words via teachers and/or textbooks has been one source of his or her knowledge of the standard forms of the kw-/k-class of words. Many of the students who were subjects in the study acknowledged that their pronunciation of words had been corrected by a teacher at one time or another (such correction may or may not have been due to errors with SC /kwo(C)/ words but may have been associated with other pronunciation errors). Students also mentioned their peers as sources of information about the correct pronunciation of words. When the male subjects read the written instruments, the number of subjects who were able to use /kw-/ increased to 16, or 38% of the total, from 11 who used /kw-/ in their Spontaneous Speech. When the female subjects read the Nursery Rhyme, Story, and Word Lists, the number of subjects who used /kw-/ in these sections of the interview increased from 17 who used /kw-/ and /k-/ in their Spontaneous Speech to 24 or 73% of the total number of females, i.e., almost twice the proportion of male subjects who used /kw-/. However, as we will see later on, even the teachers who were interviewed in this study used /ko(C)/ forms for SC /kwo(C)/ in both their Spontaneous Speech

and reading! Obviously in recognition of the pervasiveness of the change from SC /kwo(C)/ to /ko(C)/ throughout the speech communities of Hong Kong and Canton, the Cantonese linguistics scholar, Rao Bing-cai, (饒秉才), has suggested that the delabialized velar form will become the standard pronunciation in the future. For the time being, however, he recommends that this development be officially acknowledged by treating the words of the SC /kwo(C)/-class as having two pronunciations, the labialized and delabialized velar forms (Rao 1980:43).

4.2 The Phonetic Dimension of kw- → k-/__o(C)

4.2.1 The Historical Origin of SC /kwo(C)/

What is the difference between the syllable /kwō/ for the word 過 and /kō/ for the word 個 . That is, how do the labialized and plain velar initials differ in terms of the articulatory gestures used by the speaker to make the contrast between them? What explanation can we offer to account for the change of delabialization? Let us first of all consider what is meant by the term "labialized velar." Why not refer to this one segment with two articulatory features as two segments, i.e., a velar followed by a labial glide. There are essentially three reasons for recognizing the labiovelar as one segment, namely, phonetic, theoretical, and historical reasons.

According to Cheng's phonetic analysis, "... the velar and the labial elements are coarticulated instead of being

sequenced..." (Cheng 1973:260). That is, lip-rounding occurs simultaneously with velar closure in the articulation of /k-/. There is an important difference, however, between the labiovelar /kw-/ before /o/ and the plain velar /k-/ before /o/. In the case of the syllable /ko/, there is certaily anticipatory labialization of the velar occurring simultaneously with its articulation; however, the difference between /ko/ and /kwo/ lies in the degree of lip-rounding--with /kwo/ lip-rounding is made with greater tension.

Traditionally, the labiovelar initial series has been set up as a separate series in phonemic contrast to the plain velar initial series. This is because the SC /kwo(C)/-class of words have developed historically from the so called "hekou" or labial category of the 果 and 宕 "she" or rhyme groups and velar initials (viz., 見母 *k- and 群母 *g-). The modern Cantonese plain velar initial words of the SC /ko(C)/-class with which the delabialized SC /kwo(C)/ words are merging developed historically from the "kai kou" or non-labial category of the rhyme groups and velar initials (見母 *k-, 溪母 *k'-, and 群母 *g-). In modern Cantonese the labial glide (-w-) occurs only after the velar initial series of /k-/ and /k'/ which developed historically from the voiceless unaspirated velar initial *k-, the見母 , and the voiced velar initial *g-, the 群母 . In addition, the labial glide is preserved only for words which historically belonged to the hekou 果 , 宕 , 曾 , and梗 rhyme groups. What this means is that most words which historically belonged to the

rhyme groups with the labial glide have now lost the glide. In some cases the glide fused with the nuclear vowel into a front rounded vowel. For example, 卷 SC /kýn/ developed historically from the hekou 山 rhyme group, Third Division vowel *a, and *k-. It can be reconstructed in a simplified form as *kuan. In other cases, the labial glide interacted with the nuclear vowel to become the back rounded vowel -u-. For example, some words which historically had the labial glide, the 山 "she" or rhyme, First Division vowel *a, and the velar initial have developed /-u-/ as the nuclear vowel in modern Standard Cantonese, e.g., 官 SC /kûn/, but /kūan/ in Modern Beijing Mandarin which is similar to a simplified reconstructed form of *kuan. The Modern Standard Cantonese labiovelar initials /kw-/ and /k'w-/ derive almost exclusively from the historical velar initials *k- and *g-. The historical aspirated velar initial *k'- (溪母) has developed a nonvelar initial reflex in Modern Standard Cantonese. Some words which historically belonged to hekou rhyme groups and had the aspirated velar initial (溪母) *k' have developed /f-/ initial in Modern Standard Cantonese. For example, 課 SC /fō/ belonged to the same historical rhyme category as 過 (hekou 果 rhyme, Division I, Going (Qù) Tone Category), but 課 had the *k'-initial and 過 the *k-initial. The following words which all have /f-/ initial in modern Standard Cantonese have developed historically from hekou rhyme groups and the *k' initial: 科 SC /fô/; 枯 SC /fû/; 苦 SC /fú/; 快 SC /faāi/; 寬 SC /fûn/; 褲 SC /fū/;

闊 SC /fūt/; 鬼 SC /fûi/; 款 SC /fún/. Cheung cites this historical development of SC /kwo(C)/ and SC /k'wo(C)/ as an important reason for recognizing the labiovelar initial series. In addition, he bases his analysis on the practical grounds of economy--if we were to regard the labial glide as part of the syllable final, then we would increase the number of finals that can occur after the velar initial from 12 to 15. Consequently, the labialized velar series facilitates an economy of analysis (Cheung 1972:3).

The theoretical reason for establishing a labialized velar series of initials is founded on the structure of the Cantonese syllable. Cantonese has three glides, /u/, /i/, and /y/, but in a syllable of the type CGV only /u/ can occur as the glide after (velar) consonants (Hashimoto 1972:150). However, in the syllable of the type GV, any one of the three glides can precede the nuclear vowel. Consequently, Hashimoto analyzes the velar initial plus labial glide as a single unit segment. In her analysis the canonical form of the Cantonese syllable is (C,G)V(C,G) which allows us to predict that for a syllable of three segments the second segment will always be a vowel. An alternative form of CGV(C,G) is rejected on the grounds that the second and third segments of a three-segment syllable can not be predicted: the second segment can be either the glide /u/ or a vowel and the third segment either a vowel, consonant, or glide (Hashimoto 1972:137-138).

4.2.2 Origin of the Change SC kw- → k-/__o(C)

What explanation can be offered to account for the delabialization of labialized velars. The hypothesis suggested here is a simple one: the speaker's principle of maximum ease of articulation. Ladefoged has observed that speakers follow a "principle of maximum ease of articulation" by which they expend the least amount of effort in communicating meaning. In doing this speakers assimilate some sounds and eliminate others (Ladefoged 1975: 235). As noted earlier the difference between /kwo/ and /ko/ is the extra tension in lip-rounding. A reduction in tenseness of lip-rounding would be a natural development in rapid speech, and a delabialized variant could have arisen as a result. Since the change has occurred on such a wide scale among so many speakers but only in the particular environment before /o/ (although we should note that /kw-/ delabializes intermittently before /-a-/ for some speakers, but this change is not on the same scale as /kw-/ before /o/), speakers must feel that the labialization of the velar before /o/ is a redundant and hence unnecessary articulatory gesture that can be eliminated without creating problems in communication. It is quite plausible to assume that speakers in following the principle of least effort came to regard the additional tension in lip-rounding that distinguished /kwo(C)/ from /ko(C)/ as superfluous and therefore eliminated it without incurring any burden of miscommunication. Although a

phonemic contrast has been lost as a result, the verbal context preludes ambiguity. For example, /kóŋ tûŋ/ can only mean 廣東 and cannot be homophonous with any other phrase, such as 港冬 or 講東 , since these are nonoccurring and meaningless.

The Cantonese of Hong Kong is not the only Cantonese dialect to have lost the labialized velar initial before /o/. In the Cantonese dialect spoken in the Zhongshan district which lies on the other side of the Chinese border with the Portuguese colony of Macao, all SC /kwo(C)/ words have delabialized velars. This development was a feature of the Zhongshan dialect as long ago as the late 19th Century according to an article by J. Dyer Ball, a British civil servant and ardent Sinologist living in Hong Kong in the late 19th and 20th Centuries (Ball 1897:23). (In Ball's time the Zhongshan district was called Xiangshan or 香山 [Lai and Choy 1973:10] which is why his article was entitled "The Höng Shán or Macao Dialect").

According to Yuan Jia-hua, the dialects of Kaiping, Xinhui, Taishan, Zhongshan, Jiangmen, Nanhai, Jiujiang, Heshan, Shunde all pronounce 狂 as /$_{\underline{c}}$k'oŋ/, that is, with the plain velar. However, not all words with the standard labialized velars before /o/ have undergone delabialization in these dialects. Yuan states that in the dialects of Zhongshan, Jiangmen, and Taishan 光 is /$_{c}$koŋ/ which implies that the other dialects mentioned in conjunction with 狂 but not with 光 retain the labialized velar for 光 (Yuan

1960:207). McCoy's data on Seiyap dialects corroborates this interpretation of Yuan's statements. Out of 18 Seiyap cities and towns for which he records the pronunciation of items, all except Xinhui have lost the labialized velar before /o/ for all SC /kwo(C)/ words. For Xinhui City McCoy lists /kuoŋ/ for 光 , /khuok/ for 郭 , but /khoŋ/ for 狂 (McCoy 1966:69-70).

A description of Xinhui dialect made almost 100 years ago indicates that this delabialization process was fairly well advanced at that time. According to J. Dyer Ball, many of the words of the SC /kwo(C)/- class showed variation between /kw-/ and /k-/ initials. In the main text of his article, Ball lists 過 , 果 , 國 , and 光 with plain velar initials and 狂 with both the plain and labial velar initials; however, in his footnotes he says that these words are all pronounced with /kw-/ "by the better educated people" (Ball 1889-1890:188). As far as the Modern Xinhui dialect is concerned, the delabialization process apparently is still an incomplete sound change since, according to McCoy, not all the items belonging to the SC /kwo(C)/ category have undergone the change: both 光 and 郭 still retain the labial velar initial but 狂 has lost it. As we will see in the next section, the Lexical Dimension of SC kw- → k-/__o(C), this differential development of lexical items is to be expected. In fact, on the basis of the findings to be reported in the next section, the Xinhui situation of preserving its labial velar initial

but 狂 losing it is a predictable development.

4.2.3 The Inappropriate Use of the Labialized Velar Initial

An interesting phenomenon observed in a minority of the sample's subjects was the overuse or inappropriate use of the labialized velar initial. There were ten female and two male subjects who were observed to use the /kw-/ initial with the following words which all belong to the SC /ko(C)/- class: 江 SC /kôŋ/,港 SC /kóŋ/, 講 SC /kóŋ/, 各 SC /kō̄k/, 角 SC /kō̄k/,覺 SC /kō̄k/, 歌 SC /kô/, 個 SC /kó/, and 個 SC /kō̄/. Below are listed the number of times the plain and labialized-velar-initial forms of these words were used in the interviews of 12 subjects (the figures represent the total number of occurrences of these items from different parts of the interview).

Subject Number	港		講		江		角		覺		各		歌		個		個	
	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-
40	16	1	21	8	3	2												
42			5	4														1
55	7	1																
63					4	1												
65	1	5																
66		1																
68	8	13	8	1														
69	1	1	1	1				1									1	1
71	16	3	14	5						3					1			
72								2			4	1					2	1
74	4	3	22	3										1				
76	1	1																

SC /ko(C)/ lexical items which occurred with both /kw-/ and /k-/ initials

Is this overuse of the labialized velar a form of hypercorrection? Based on my observations of the subjects' use of the labialized SC /ko(C)/ forms in both spontaneous speech and reading, I believe that in general this kind of labialized velar occurs as an inadvertent, sporadic variant for most of the subjects and does not arise from hypercorrection. For example, Subject #55, a 25-year-old female who had a 95% /k-/ score in the Spontaneous Speech section of the interview, said /kwóŋ/ for 港 one time but SC /kóŋ/ seven times in her Spontaneous Speech. Another subject, a 35-year old housewife, however, had a tendency to favor the labialized initial for 港 in her Spontaneous Speech: she said /kwóŋ/ five times but SC /kóŋ/ only once. When this subject read the Story, however, the two instances of 港 were both /kóŋ/, and in fact this subject's use of % /k-/ score for the Story and Minimal Pair Word List were both 0% which meant that all SC /kwo(C)/ items were appropriately labialized. Subject #68, a 40-year-old housewife, also had a tendency to prefer the labialized form of 港 : she said /kwóŋ/ 9 out of 16 times (56%) in her Spontaneous Speech and three out of three times in the Story. She also had a 0% /k-/ score for her reading of the Story and a 29% /k-/ score for the Word Lists. Subject #40, the 51-year-old male bank clerk, had a 21% /k-/ score in his Spontaneous Speech, 0% /k-/ in the Story, and 28% in the Word List. In his Spontaneous Speech he labialized three SC /ko(C)/ items: 講 , eight out of 29 times (28%); 港 ,

once out of 17 times (6%); and 江 , two out of three times (67%). Subject #42, a 55-year-old male, had a 6% /k-/ score in his Spontaneous Speech, 6% in the Nursery Rhyme and Story, and 13% in the Word Lists. He labialized 講 four out of nine times (44%). These subjects who distinguish SC /kwo(C)/ and SC /ko(C)/ fairly consistently have the tendency to overextend labialization of the velar to some SC /ko(C)/ items. However, this behavior is not limited just to subjects who are able to contrast SC /kw-/ and SC /k-/.

Subject #74, a 52-year-old housewife, said 港 twice as /kwóŋ/ and four times as SC /kóŋ/ in her Spontaneous Speech. When she read the Story, she said /kwóŋ/ once and /kóŋ/ once. This subject had high % /k-/ scores: 80% in her Spontaneous Speech and 64% in her Word List style. Even though she used SC /kwo(C)/ forms occasionally, she apparently was not able to hear a contrast between /kwo(C)/ and /ko(C)/ and was not able to make one either. When given the Minimal Pair Word List, she pronounced 過 and 個 as /kō/ and said they were the same. In addition, 光 and 江 were both first said as /kôŋ/ and then a moment later as /kwôŋ/, but she claimed not to hear any difference between her two pronunciations. For this subject the labialized velar initial appeared to be a sporadic, free variant.

When asked to read the Minimal Pair Word List, three of the 12 subjects who labialized SC /ko(C)/ forms said

that 港 was either /kwon/ or /kon/. One subject said that she thought both pronunciations were accepteable. This female subject, aged 73, had a 0% /k-/ score in her Spontaneous Speech and 12% in the Word Lists which indicates she could consistently make the kw-/k- distinction. However, when confronted with the Minimal Pair Word List with 廣 and 港 , she said they could both be pronounced as /kwóŋ/, even though she had consistently used /kóŋ/ for 港 . A 42-year-old housewife said the same thing, that 港 was either /kwóŋ/ or /kóŋ/, even though she had used /kóŋ/ in her Spontaneous Speech and Story. I believe she said this because of the variation between SC /kwo(C)/ and /ko(C)/ which existed in her speech as a result of the delabialization change. In her Spontaneous Speech she and 42% /k-/, 44% /k-/ in the Nursery Rhyme and Story, and 22% /k-/ in the Word Lists which indicates she had a tendency to use the delabialized velar initial almost as often as she used the labialized velar initial when not thinking about the way she talked. In her reading of the Minimal Pair Word List she said that the words 廣 SC /kwóŋ/, 講 SC /kóŋ/, 港 SC /kóŋ/, and 個 SC /kō/ could either be /kwo(C)/ or /ko(C)/. Only 過 , 光 , and 郭 were correctly distinguished with the labialized velar initial from their matched SC /ko(C)/ items. My impression was that my interview with her was the first time she had ever thought about the kw-/k- contrast which left her in a confused state. She could not decide whether the /kw-/ and /k-/ pronunciations were different and in

contrast or whether there was no difference and bothe were acceptable. Her ambivalence can be attributed to the variation between SC /kwo(C)/ and /ko(C)/ in her speech.

4.3 The Lexical Dimension of SC kw- → k-/__o(C)

According to the Neogrammarian conception, sound change is phonetically gradual but lexically abrupt, i.e. the change from one sound to another is a gradual, imperceptible one which changes all of the relevant vocabulary items at the same time. The theory of lexical diffusion, on the other hand, claims that the change from one sound to another is abrupt, discrete, and perceptible, but the process does not simultaneously affect all of the lexical items of the relevant class. At any point in time during the sound change, some items will have changed, some will have variation between the old and new sounds, and other words will still have the old sound. At the end of the sound change, all items will have the new form unless a competing sound change intervenes. Just as the previous Chapter's examination of the change SC /ŋ̣/ to /m̥/ supports the lexical diffusion scenario of sound change, so too will the following discussion of the delabialization of labialized velars before /o/. Furthermore, just as we saw in the last chapter that a particular word may lead in a sound change, we will see again that lexical items in the SC /kwo(C)/- class have not all been affected in the same way by the sound change. There is an interaction between a word's frequency in the

language and how the sound change process affects it. We will see here that high frequency words are not necessarily the ones most changed by the sound change process. The least frequent items of the lexicon appear to undergo the most radical change as will be shown in the discussion concerning the reading pronunciation of a group of very low frequency items occurring in the Word Lists.

When we look at how this study's sample pronounces a group of words belonging to the SC /kwo(C)/- class, we find a situation of great heterogeneity. There is not only considerable variation within the sample's subjects, with respect to the pronunciation of the items by one subject in different speech contexts. There is variation among men and women as separate groups and variation between them when the two groups are compared together. In this section we will examine the variation in the use of the kw-/k- variable that exists in the speech of that portion of the study's subjects which had variation between /kw-/ and /k-/ in any part of the interview. For instance, a subject may use only /k-/ for SC /kwo(C)/- class items in the Spontaneous Speech section of the interview but switch to using both the SC /kw-/ and /k-/ forms when reading the Story and/or the Word Lists. Out of the study's 75 subjects, 40 subjects belong to this category of having variation between SC /kw-/ and /k-/ --16 men and 24 women. The other 35 subjects either have a complete change to /k-/ for all SC /kwo(C)/ items or no change to /k-/. There were

34 subjects, 26 men and 8 women, who have a complete change to /k-/. Only one elderly woman, the 68-year-old University of Hong Kong graduate, still retains the standard distinction between SC /kw-/ and Sc /k-/. Following this section's discussion of the lexical dimension of the delabialization change, the chapter's concluding section will focus attention on the social aspect of the change.

According to Mr. Li's Chinese Dictionary the logographs listed in Table 1 below belong to the SC /kwo(C)/ class. Most of these written forms are rarely used, and for our purposes, we will only be concerned with nine of them, namely, 過 SC /kwō/; 國 SC /kwōk/; 廣 SC /kwóŋ/; 果 SC /kwó/; 菓 SC /kwó/; 光 SC /kwôŋ/; 郭 SC /kwōk/; 狂 SC /k'wòŋ/; and 礦 SC /k'wōŋ/. Most of these items are commonly used to investigate this particular sound change. The distribution and incidence of these items in the elicitation instruments are listed below (number in parentheses indicates the number of times the lexical item occurred in a particular instrument):

Nursery Rhyme		Story		Word Lists	
光	(2)	國	(6)	國	(3)
		過	(4)	過	(3)
		廣	(2)	郭	(3)
		果	(1)	廣	(3)
		光	(1)	光	(2)
				果	(1)
				狂	(1)
				礦	(1)

Table 1. Logographs belonging to SC /kwo(C)/-class

Logograph	Gloss
/kwô/	
戈	dagger axe
咼	surname
渦	river in Anhui
薖	grass
簻	allograph of 薖
/kwó/	
果	fruit, result
倮	narrow-minded
猓	tribe in Yunnan
惈	brave
菓	fruits and nuts
粿	fried bread
裹	to wrap
蜾	solitary wasp
輠	cart's grease pot
餜	allograph of 粿
䴹	allograph of 粿
/kwō/	
過	to cross over, to experience
/kwōk/	
崞	former name of county in Shanxi
椁	allograph of
國	country
郭	outer city wall, surname
槨	outer coffin
幗	woman's cap
嘓	to chatter
膕	back of knee
蟈	katydid
(骨+國)	allograph of 膕
口 国	allographs of 國
国 圀	allographs of 國
/k'wōk/	
挄	allograph of 擴
鞟	allograph of 鞹
漷	bodies of water in Shandong and Hebei
廓	to enlarge
霩	allograph of 廓
/k'wōk/ (cont.)	
鞹	leather
彉	allograph of 彍
(廣+刂)	to dissect
擴	to expand or stretch
彍	crossbow
/kwôŋ/	
光	bright
侊	big
洸	glittering water
胱	bladder
桄	coir palm
銧	radium
/kwóŋ/	
广	allograph of 廣
誑	to deceive
廣	broad, wide
獷	uncivilized
/kwōŋ/	
桄	crossbeam
/k'wōŋ/	
夼	low-lying ground
絖	allograph of 纊
鄺	surname
懭	allograph of 懬
壙	wilderness
懬	hatred
曠	spacious
礦	mine
纊	cotton, silk floss
鑛	allograph of 礦
/k'wòŋ/	
狂	violent
(氵+狂)	appearance of water
誑	to deceive

4.3.1 Distribution of SC /kwo(C)/ and /ko(C)/ in Spontaneous Speech

In the Spontaneous Speech section of the interviews, the most commonly occurring SC /kwo(C)/ morphemes were 過 , 國 , 廣 , 果 , 菓 ,and 光 in that order. At the bottom of each column in Table 2.1 and 2.2 below are listed the total number of tokens which occurred for each of these items in the Spontaneous Speech of the 16 male and 24 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. Table 3 below indicates the frequency of the six items for males and females and for the two groups together. We notice 廣 occurred almost as frequently (30% of the total number of tokens for SC /kwo(C)/) as 過 for the male subjects but ranks third for the female subjects. Both 菓 and 光 were low frequency words in Spontaneous Speech -- each occurred at less than 1% of the total number of SC /kwo(C)/ tokens. The word 菓 occurred in the interviews of three female subjects. Figure 1 below represents the figures in Table 3 in the form of a graph. Within the Spontaneous Speech sections of interviews, what proportion of each of the six SC /kwo(C)/ morphemes occurred with the delabialized initial /k-/? In answering this question, we find that the delabialization sound change has not affected all morphemes of the SC /kwo(C)/-class in the same way in the Spontaneous Speech of this group of subjects. Some words are more prone to be delabialized than others. Even the same morpheme used in different

lexical combinations appears not to be affected in the same way by the sound change. Tables 2.1 and 2.2 indicate how many times each of the six items occurred with SC /kw-/ or /k-/ for each of the 40 subjects. Table 4 shows what proportion of each of the items occurred as /k-/ for the male and female subjects as two separate groups and as one group. For the male subjects the two most frequently occurring items 過 and 國 are changed to /k-/ at a substantially higher rate than for the women, 84% to 65% for 過 and 90% to 66% for 國. However, the next two items 廣 and 果 occur as /k-/ with a frequency that is fairly similar for the men and women: 廣 occurs as /k-/ 50% of the time for men and 55% for women; 果 occurs as /k-/ 79% of the time for men and 75% for women. Figure 2 below transfers the percent figures from Table 4 onto a graph to more vividly represent the percent change to /k-/ for the six SC /kwo(C)/ morphemes which occurred in the Spontaneous Speech of the 40 male and female subjects. The first observation we can make based on Table 4 and Figure 2 is that the male subjects use an overall % /k-/ that is higher for two high frequency words than the female subjects. The male subjects change 果 to /k-/ at a slightly lower rate of 75%. The female subjects, on the other hand, change 廣 to /k-/ at 55% versus the males' rate of 50%. A 51-year old male subject used 廣 a total of 49 times as /kwóŋ/, more than any other subject, which substantially lowered the males' rate of change to /k-/ for this item. Based on this evidence from the

Table 2.1. Total number of SC /kwo(C)/ and /ko(C)/ tokens in Spontaneous Speech of 16 male subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. (Lexical items are arranged from left to right in the decreasing order of their frequency in the Spontaneous Speech section of the interview of both male and female subjects).

Subj. No.	過		國		廣		果		菓		光	
	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-
4	-	7	-	11	-	4	-	4	-	-	-	-
6	-	8	-	9	-	6	-	1	-	-	-	-
9	-	12	-	-	-	1	-	2	-	-	-	-
10	-	20	-	3	-	6	-	6	-	-	-	-
11	2	24	2	9	6	2	-	5	-	-	-	-
18	3	7	-	15	-	6	-	5	-	-	-	-
20	-	16	-	5	-	1	1	4	-	-	-	-
22	1	13	-	12	-	1	1	-	-	-	-	-
24	-	2	-	12	-	5	-	2	-	-	-	-
29	-	5	-	6	-	19	1	9	-	-	-	-
30	2	16	-	21	9	8	-	6	-	-	-	-
32	-	11	1	20	2	20	-	8	-	-	-	-
33	1	7	-	1	-	6	-	3	-	-	-	1
39	-	5	-	7	-	2	-	-	-	-	-	-
40	7	3	1	8	49	-	3	5	-	-	-	-
42	14	1	12	1	23	2	10	-	-	-	-	-
	30	157	16	140	89	89	16	60	-	-	-	1
total kw-/k-	187		156		178		76		-		1	

Table 2.2. Total number of SC /kwo(C)/ and /ko(C)/ tokens in Spontaneous Speech of 24 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. (Lexical items are arranged from left to right in the decreasing order of their frequency in the Spontaneous Speech section of the interview of both male and female subjects).

Subj. No.	過		國		廣		果		菓		光	
	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-
44	–	23	–	11	–	2	–	4	–	–	–	–
45	–	15	–	2	–	–	–	9	–	–	1	–
48	–	16	–	12	–	–	–	4	–	–	–	–
49	–	8	6	19	4	25	–	5	–	–	–	–
53	–	13	–	15	–	3	–	14	–	–	–	–
54	–	15	–	1	–	2	–	11	–	–	–	–
55	2	13	–	17	–	5	–	2	–	–	–	–
57	15	23	7	8	3	4	–	24	8	–	–	–
58	–	13	–	23	–	10	–	9	–	–	–	–
59	–	5	–	8	–	–	–	1	–	–	–	–
60	15	4	24	–	28	–	1	4	–	–	–	–
61	–	12	–	28	–	21	–	8	–	–	–	–
62	–	16	–	4	–	6	–	6	–	–	–	–
63	3	7	–	5	1	5	–	3	–	–	1	1
64	1	8	8	7	10	3	15	–	–	–	–	–
65	10	4	10	–	7	1	–	–	–	–	–	–
66	10	4	4	2	–	5	4	8	–	–	–	–
68	12	–	9	2	1	–	6	1	–	–	–	–
69	7	2	–	1	–	1	–	1	–	–	–	–
71	18	–	10	–	9	1	1	–	3	–	5	–
72	10	7	–	15	–	–	5	1	–	–	–	–
74	3	14	1	–	1	2	–	4	–	–	–	–
76	7	–	7	–	9	–	5	–	–	–	–	–
77	8	1	7	–	7	2	1	–	1	–	1	–
	121	223	93	180	80	98	39	119	12	–	8	1
total kw-/k-	344		273		178		158		12		9	

Table 3. Total number of SC /kwo(C)/ and /ko(C)/ tokens for six SC /kwo(C)/-class morphemes which occurred in the Spontaneous Speech of 40 male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. The frequency with which each lexical item occurred is shown as a percentage of the total number of all SC /kwo(C)/-class tokens. (Males=16 Subjects, Females=24 Subjects)

Subjects	(% of 過 total)	(% of 國 total)	(% of 廣 total)	(% of 果 total)	(% of 菓 total)	(% of 光 total)	Total /kwo(C)/ Items
Males	187 (31%)	156 (26%)	178 (30%)	76 (13%)	-- (--)	1 (--)	598
Females	344 (35%)	273 (28%)	178 (18%)	158 (16%)	12 (1%)	9 (1%)	974
Total for Males and Females	531 (34%)	429 (27%)	356 (22%)	234 (15%)	12 (1%)	10 (1%)	1572

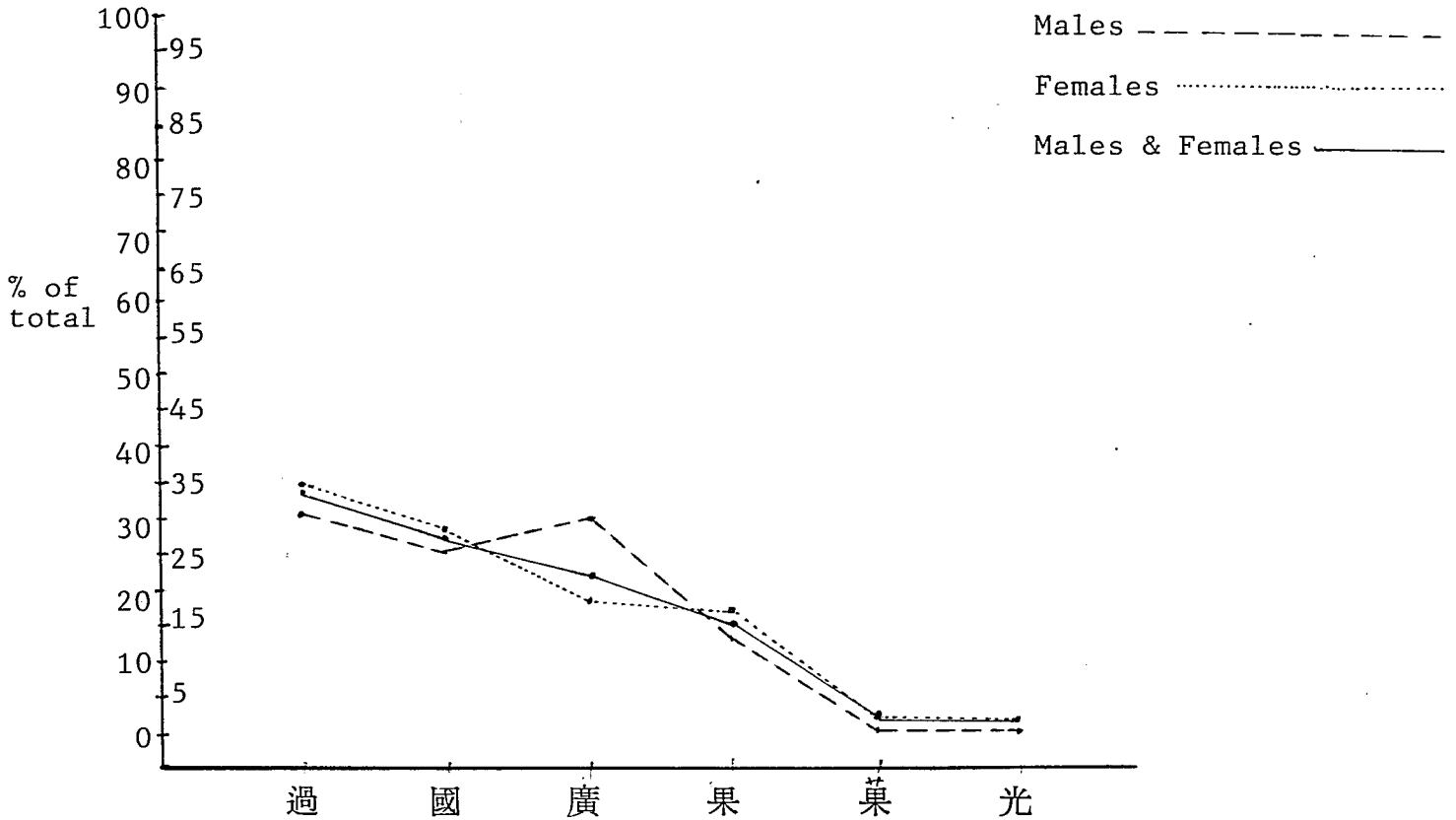


Figure 1. Frequency in % with which six SC /kwo(C)/-class morphemes occurred in the Spontaneous Speech of 40 male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Spontaneous Speech of these 40 subjects who have SC /kwo(C)/ and /ko(C)/ variation, we can conclude that the male subjects appear to be more advanced in the change to /k-/ than the female subjects. This observation does not necessarily run counter to Labov's findings on a number of sound changes that women are generally more advanced in their use of a phonological variable than men. In his study of sound change on Martha's Vineyard, Labov discovered that vowel changes were more advanced in their development among men than women. He has suggested that the "correct generalization" on the role of men and women in the development of sound change "...is not that women lead in linguistic change, but rather that the sexual differentiation of speech often plays a major role in the mechanism of linguistic evolution" (Labov 1972b:303). Another observation we can make based on Table 4 and Figures 1 and 2, is the relationship between two high frequency words and their % change to /k-/: 過 occurs 31% of all SC /kwo(C)/ tokens for men and 35% for women, 國 occurs 26% of all SC /kwo(C)/ tokens for men and 28% for women. While 國 is the third-most frequenctly occurring SC /kwo(C)/ item in the Spontaneous Speech of men -- second place is held by 廣 at 30%, yet 國 changes to /k-/ at a higher rate than either 過 or 廣 -- 90% versus 84% and 50% for men. In the case of women, 國 is the second-most frequently occurring SC /kwo(C)/ item and is also changed to /k-/ at only slightly higher rate than 過 -- 66% versus 65%; 廣 occurs 55% of the time with /k-/. In addition, while 廣 occurs 30% of the total of SC /kwo(C)/ tokens in the

Table 4. % change to /ko(C)/ of six SC /kwo(C)/-class morphemes in the Spontaneous Speech of 16 male and 24 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

	過	國	廣	果	菓	光
Males						
Number of items as /ko(C)/	157	140	89	60	--	1
Total SC /kwo(C)/ items	187	156	178	76	--	1
% change to /ko(C)/	84%	90%	50%	79%	--	100%
Females						
Number of items as /ko(C)/	223	180	98	119	--	1
Total SC /kwo(C)/ items	344	273	178	158	12	9
% change to /ko(C)/	65%	66%	55%	75%	0%	11%
Males and Females						
Number of items as /ko(C)/	380	320	187	179	--	2
Total SC /kwo(C)/ items	531	429	356	234	12	10
% change to /ko(C)/	72%	75%	53%	76%	0%	20%

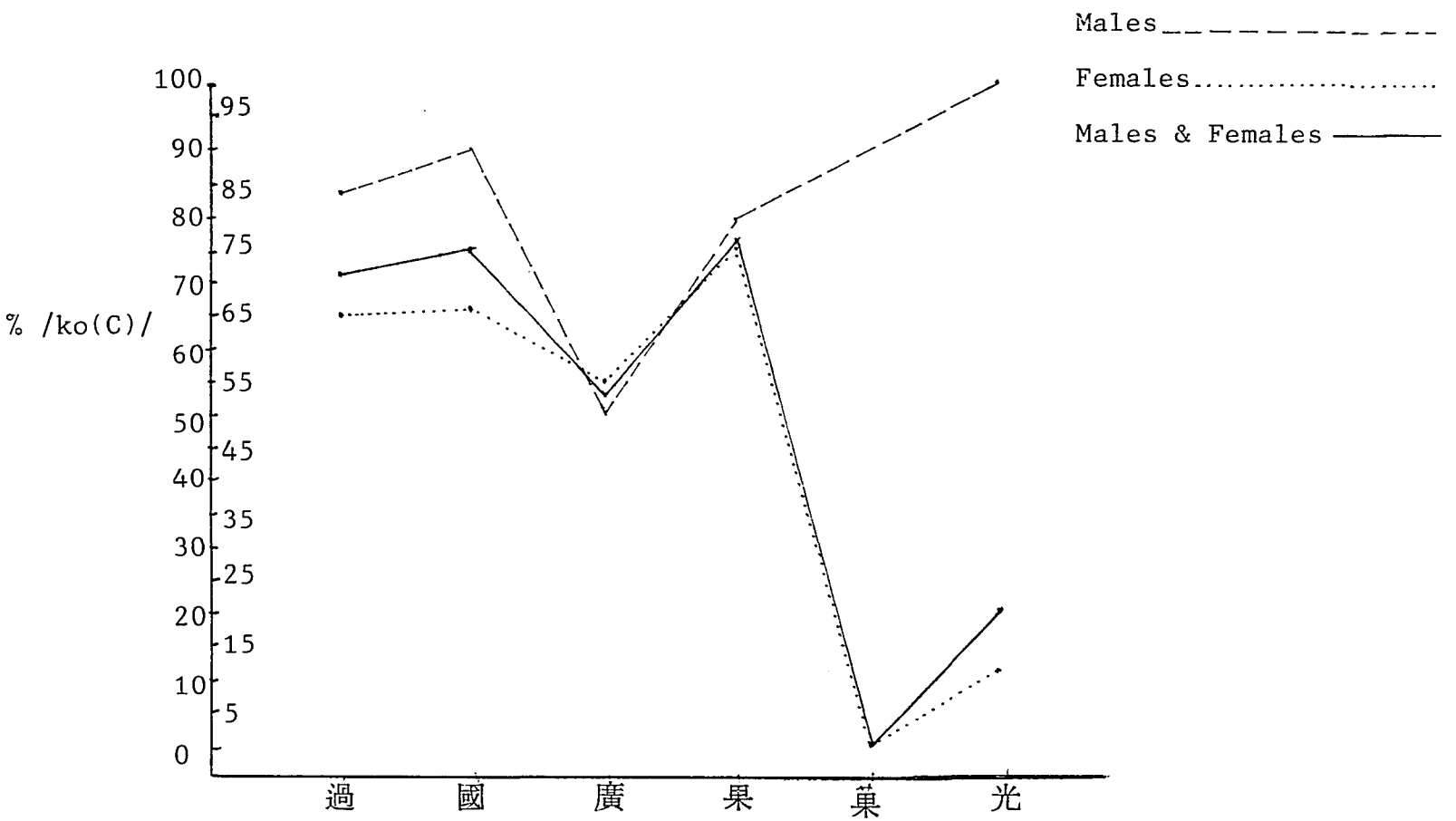


Figure 2. % change to /ko(C)/ of six SC /kwo(C)/-class morphemes in the Spontaneous Speech of 16 male and 24 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. The six morphemes are listed on the graph in the decreasing order of their frequency in Spontaneous Speech.

Spontaneous Speech of men, yet its % change to /k-/ at 50% is substantially lower than the 79% rate of change to /k-/ for 果 which represents only 13% of the total number of SC /kwo(C)/ items in Spontaneous Speech. The same situation also holds true for the wormen subjects although the percent figures are only slightly different. Why should 果 which is a relatively low frequency item be changed to /k-/ at the highest rate of 75% for women and the third highest (79%) for men. Furthermore, while both 菓 and 光 are both low frequency words in Spontaneous Speech, yet their % rate of change to /k-/ is also quite low in the case of the women subjects. Since 菓 did not occur in the men's speech and 光 only one time, we can make no valid observations on their use of these two morphemes.

Almost all occurrences of 果 in Spontaneous Speech were in the lexical combination 如果 SC /jỳ kwó/ "if". Only a few instances of 果 occurred in the combination 結果 SC /kīt kwó/ "result", and curiously enough, 果 in this combination was more likely to occur as /kwó/: three out of four times in the speech of two male subjects and one female subject 果 occurred as /kwó/. The most frequently occurring word in Spontaneous Speech is 過 and was used most often as a verb suffix to mean "to have had the experience of doing something," e.g., 我試過 SC /ŋö sī kwō/ "I've experienced (that)," rather than as the action verb meaning "to cross over" as in 過馬路 SC /kwō mä lǒu/ "to cross the street." This word has the second highest rate of change to /k-/ for the male subjects

and the third highest rate of change for female subjects. The word which has the highest percent change to /k-/ for the male subjects and the second highest rate of change for female subjects is 國 . It occurred in such combinations as 中國 SC /tsûŋ kwōk/ "China," 英國 SC/jîŋ kwōk/ "England," 美國 SC /mëi kwōk/ "America," 國家 SC /kwōk kâ/ "country," 國語 SC /kwōk jÿ/ "national language," etc. Word frequency and grammatical function of lexical items may interact with the sound change process in subtle ways, but we will not consider this topic any further in this report. I hope to come back to this topic in a future study, however.

4.3.2 Distribution of SC /kwo(C)/ and /ko(C)/ in the Nursery Rhyme and Story.

Tables 5.1 and 5.2 below present the number of times SC /kwo(C)/ and /ko(C)/ forms occurred in the speech of this same group of 16 male and 22 female subjects when they read the Nursery Rhyme and the Story (two female subjects declined to read the instruments citing their illitereacy as the reason). Table 6 below indicates the % change to /k-/ for the five lexical items in the Nursery Rhyme and Story for the 38 subjects. From Table 6 we see that for all five items the male subjects use a higher percentage of /k-/ than the females. Only the word 光 occurs as/k-/ at a rate that is similar for both groups, 34% for men and 31% for women. The graph in Figure 3 below indicates that

Table 5.1. Total number of SC /kwo(C)/ and /ko(C)/ tokens in the reading of the Nursery Rhyme and Story by 16 male subjects with variation between SC /kwo(C)/ and /ko(C)/ in the interview. (Lexical items are arranged from left to right in the decreasing order of their frequency in the Spontaneous Speech section of the interview of both male and female subjects).

Subj. No.	過		國		廣		果		光	
	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-
4	–	4	–	6	–	2	1	–	–	3
6	1	3	–	6	1	1	–	1	5	–
9	3	1	–	6	1	1	–	1	3	2
10	–	4	–	6	–	2	–	1	–	3
11	2	2	–	5	2	–	1	–	3	–
18	4	–	6	–	1	1	1	–	3	–
20	–	4	–	6	–	2	1	–	5	–
22	1	2	2	5	–	2	–	–	5	–
24	5	–	5	1	1	1	1	–	3	2
29	–	4	–	6	–	2	–	1	–	3
30	–	4	–	6	–	2	–	1	2	1
32	–	4	–	6	–	2	–	1	–	5
33	–	4	–	6	–	2	–	1	–	3
39	–	4	–	6	–	2	1	–	5	–
40	4	–	6	–	2	–	1	–	3	–
42	3	1	6	–	2	–	–	–	5	–
	23	41	25	71	10	22	7	7	42	22
total kw-/k-	64		96		32		14		64	

Table 5.2. Total number of SC /kwo(C)/ and /ko(C)/ tokens in the reading of the Nursery Rhyme and Story by 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. (Lexical items are arranged from left to right in the decreasing order of their frequency in the Spontaneous Speech section of the interview of both male and female subjects).

Subj. No.	過		國		廣		果		光	
	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-
44	–	4	–	6	1	1	–	1	2	1
45	4	–	4	2	1	1	1	–	3	–
48	1	4	–	6	–	2	1	–	1	2
49	4	1	–	6	–	2	1	–	3	–
53	–	4	–	6	–	2	1	–	3	–
54	4	1	–	6	–	1	–	1	3	–
55	4	–	3	3	1	1	1	–	1	2
57	4	1	6	–	2	–	1	–	3	–
58	–	4	–	6	–	2	–	1	–	3
59	–	4	–	6	–	2	–	1	–	3
60	5	–	6	–	2	–	1	–	3	–
61	1	3	–	6	–	2	–	1	–	3
62	1	3	–	6	–	2	–	1	1	2
63	1	3	–	6	–	2	–	1	–	3
64	3	1	6	–	2	–	1	–	3	–
65	4	–	6	–	2	–	1	–	5	–
66	3	1	6	–	–	2	1	–	5	–
68	4	–	6	–	2	–	1	–	3	–
69	4	–	1	5	1	1	1	–	2	1
71	–	–	–	–	–	–	–	–	–	–
72	–	–	–	–	–	–	–	–	–	–
74	3	1	2	4	2	–	–	1	1	2
76	3	1	6	–	1	1	1	–	3	–
77	4	1	1	–	2	–	1	–	3	–
	57	37	58	74	19	25	14	8	48	22
total kw-/k-	94		132		44		22		70	

Table 6. % change to /ko(C)/ of five SC /kwo(C)/ morphemes in the reading of the Nursery Rhyme and Story by 16 male and 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

	過	國	廣	果	光
Males					
Number of items as /ko(C)/	41	71	22	7	22
Total SC /kwo(C)/ items	64	96	32	14	64
% change to /ko(C)/	64%	74%	69%	50%	34%
Females					
Number of items as /ko(C)/	37	74	25	8	22
Total SC /kwo(C)/ items	94	132	44	22	70
% change to /ko(C)/	39%	56%	57%	36%	31%
Males and Females	78	145	47	15	44
Number of items as /ko(C)/	158	228	76	36	134
Total SC /kwo(C)/ items	49%	64%	62%	42%	33%
% change to /ko(C)/					

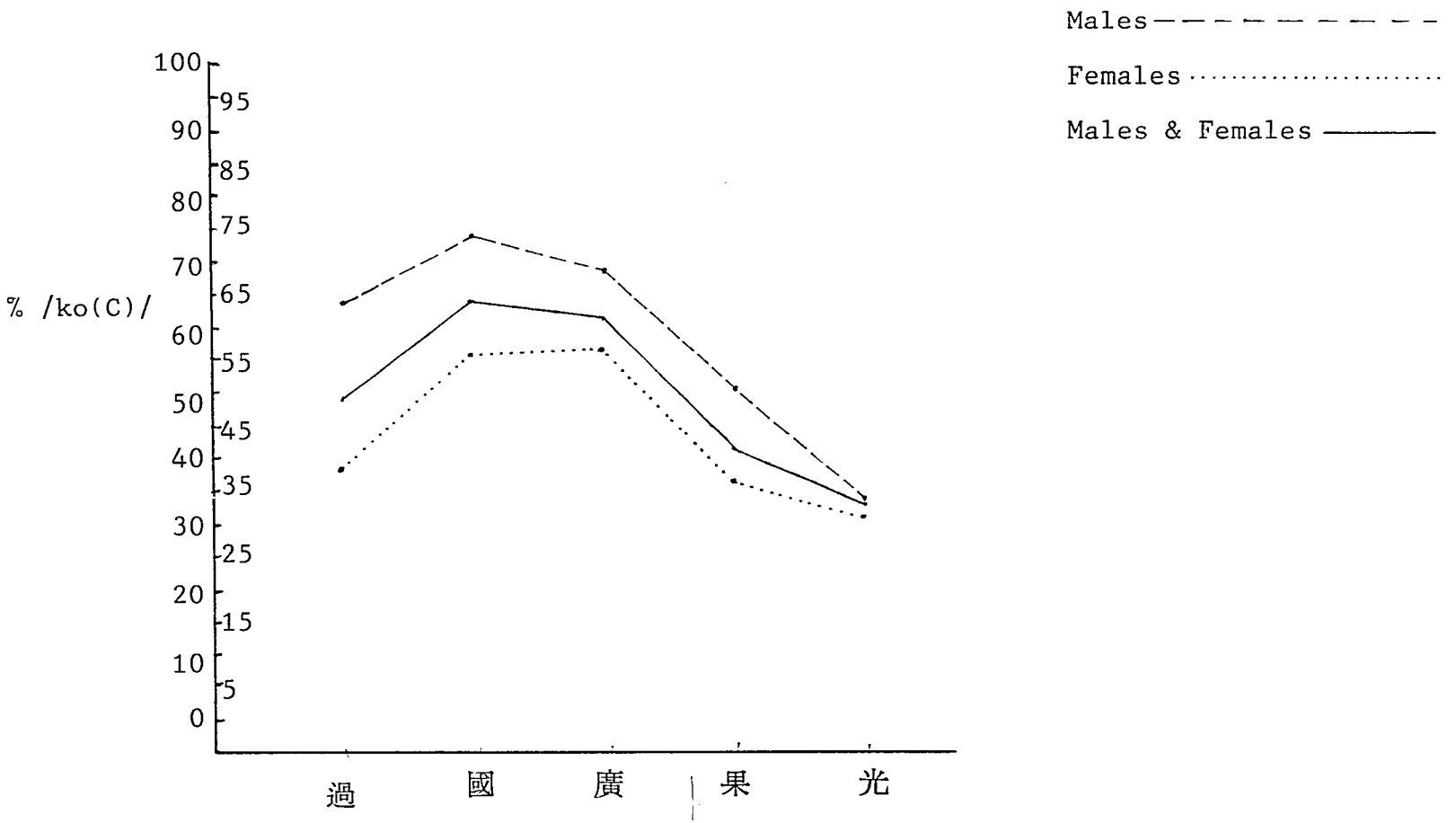


Figure 3. % change to /ko(C)/ of five SC /kwo(C)/ morphemes in the reading of the Nursery Rhyme and Story by 16 male and 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

while the relative rate of change to /k-/ is substantially higher for men than women, the men's overall pattern in the use of /k-/ for each of the five items is almost the same as the women's pattern. The item which occurs with the highest frequency in Spontaneous Speech, 過 , has a % change to /k-/ in the reading of 64%, a rate of change which is markedly lower than the rate of change for the next highest frequency word 國 at 74% /k-/. For the women the difference in % /k-/ for 過 and 國 is even greater--39% and 56%, respectively. In the reading the men's curve peaks at 74% /k-/ for 國 and then falls slightly to 69% for 廣 . The women's curve, however, peaks at 57% /k-/ for 廣 which is only one percentage point higher than for 國 . The women's curve also shows a sharp drop for 果 at 36% /k-/, a decline of 21 points. The men's curve declined by about the same amount--19 points--from 廣 to 果 .

4.3.3 Distribution of SC /kwo(C)/ and /ko(C)/ in Word Lists

Tables 7.1 and 7.2 provide the number of times with which /kwo(C)/ and /ko(C)/ forms were used for eight SC /kwo(C)/ lexical items by each of the subjects in the same group of 38 subjects who read the Word Lists. Table 8 presents the percentage figures of change to /k-/ for these eight items for men and women as separate groups and as one group. Figure 4 presents the figures in Table 8 in the form of a graph. The most sriking observation based

Table 7.1 Total number of SC /kwo(C)/ and /ko(C)/ tokens in the reading of the Word Lists of 16 male subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. (Lexical items are arranged from left to right in the decreasing order of their frequency in the Spontaneous Speech section of the interview of both male and female subjects. Frequency of last three items is estimated to be very low in Spontaneous Speech).

Subj. No.	過		國		廣		果		光		郭		狂		礦	
	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-
4	–	3	–	3	–	3	1	–	2	–	–	3	–	1	–	1
6	2	1	–	3	2	1	1	–	2	–	–	3	–	1	–	1
9	3	–	1	2	3	1	1	–	2	–	–	3	–	1	–	1
10	1	2	–	3	1	2	–	1	1	1	–	3	–	1	–	1
11	3	–	2	1	3	–	1	–	2	–	3	–	1	1	–	1
18	3	–	3	–	2	1	1	–	2	–	3	–	–	1	–	1
20	–	3	–	3	2	1	1	–	2	–	–	3	–	1	–	1
22	3	–	2	1	3	–	1	–	1	1	–	3	–	1	–	1
24	1	1	2	–	1	–	1	–	1	–	–	2	–	1	–	–
29	2	1	3	1	2	1	–	1	2	–	2	1	–	1	–	1
30	1	–	1	–	1	–	1	–	1	–	2	–	–	–	1	–
32	1	2	1	3	1	2	1	–	1	1	1	2	–	1	–	1
33	–	3	–	3	1	2	–	1	–	2	–	3	–	1	–	1
39	–	3	–	3	1	2	1	–	2	–	–	3	–	1	–	1
40	3	–	3	–	3	–	1	–	2	–	1	3	–	1	–	1
42	3	–	3	–	3	–	–	–	2	–	3	–	–	1	–	1
	26	19	21	26	29	16	12	3	25	5	15	32	1	15	1	14
total kw-/k-	45		47		45		15		30		47		16		15	

Table 7.2 Total number of SC /kwo(C)/ and /ko(C)/ tokens in the reading of the Word Lists of 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview. (Lexical items are arranged from left to right in the decreasing order of their frequency in the Spontaneous Speech section of the interview of both male and female subjects. Frequency of last three items is estimated to be very low in Spontaneous Speech).

Subj. No.	過		國		廣		果		光		郭		狂		礦	
	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-	kw-	k-
44	2	1	–	3	–	3	1	–	2	–	–	3	–	1	–	1
45	3	–	3	–	3	–	1	–	2	–	–	3	–	1	–	1
48	2	2	–	3	1	2	1	–	2	–	–	3	–	1	–	1
49	3	–	1	2	–	3	1	–	2	–	–	3	1	–	–	1
53	2	2	3	–	1	2	1	–	2	–	1	3	1	–	–	1
54	–	2	–	2	–	1	–	1	–	1	–	2	–	1	–	–
55	2	1	1	1	–	1	–	1	–	1	1	1	–	1	–	–
57	3	–	3	–	3	–	1	–	2	–	–	3	–	1	–	1
58	1	1	1	2	1	1	–	1	1	1	–	3	1	–	–	1
59	–	3	–	3	–	3	–	1	2	1	–	3	–	1	–	1
60	1	–	–	–	1	–	1	–	1	–	–	2	–	–	–	–
61	–	2	2	–	–	1	–	1	–	1	–	2	–	1	–	–
62	1	1	–	2	–	1	1	–	1	1	–	2	–	1	–	–
63	–	2	–	2	–	1	–	1	–	1	–	2	–	1	–	–
64	1	2	3	–	3	–	1	–	2	–	–	3	–	1	–	1
65	3	–	3	–	3	–	1	–	2	–	3	–	–	1	–	1
66	3	–	3	–	3	2	1	–	2	–	3	–	–	1	–	–
68	3	–	3	–	3	–	1	–	2	–	–	3	–	1	–	1
69	2	1	3	–	3	1	1	–	2	1	3	–	–	1	–	1
74	–	2	–	2	–	1	1	–	1	1	2	–	–	1	–	1
76	3	–	3	–	3	–	1	–	2	1	3	–	–	1	–	1
77	1	1	2	–	1	–	1	–	1	–	2	–	–	1	–	–
	36	23	34	22	29	23	16	6	31	10	18	41	3	18	0	14
total kw- k-	59		56		52		22		41		59		21		14	

Table 8. % change to /ko(C)/ of eight SC /kwo(C)/-class morphemes in the reading of the Word Lists by 16 male and 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

	過	國	廣	果	光	郭	狂	礦
Males								
Number of items as /ko(C)/	19	26	16	3	5	32	15	14
Total SC /kwo(C)/ items	45	47	45	15	30	47	16	15
% change to /ko(C)/	42%	55%	36%	20%	17%	68%	94%	93%
Females								
Number of items as /ko(C)/	23	22	23	6	10	41	18	14
Total SC /kwo(C)/ items	59	56	52	22	41	59	21	14
% change to /ko(C)/	39%	39%	44%	27%	24%	69%	86%	100%
Males and Females								
Number of items as /ko(C)/	42	48	39	9	15	73	33	28
Total SC /kwo(C)/ items	104	103	97	37	71	106	37	29
% change to /ko(C)/	40%	47%	40%	24%	21%	69%	89%	97%

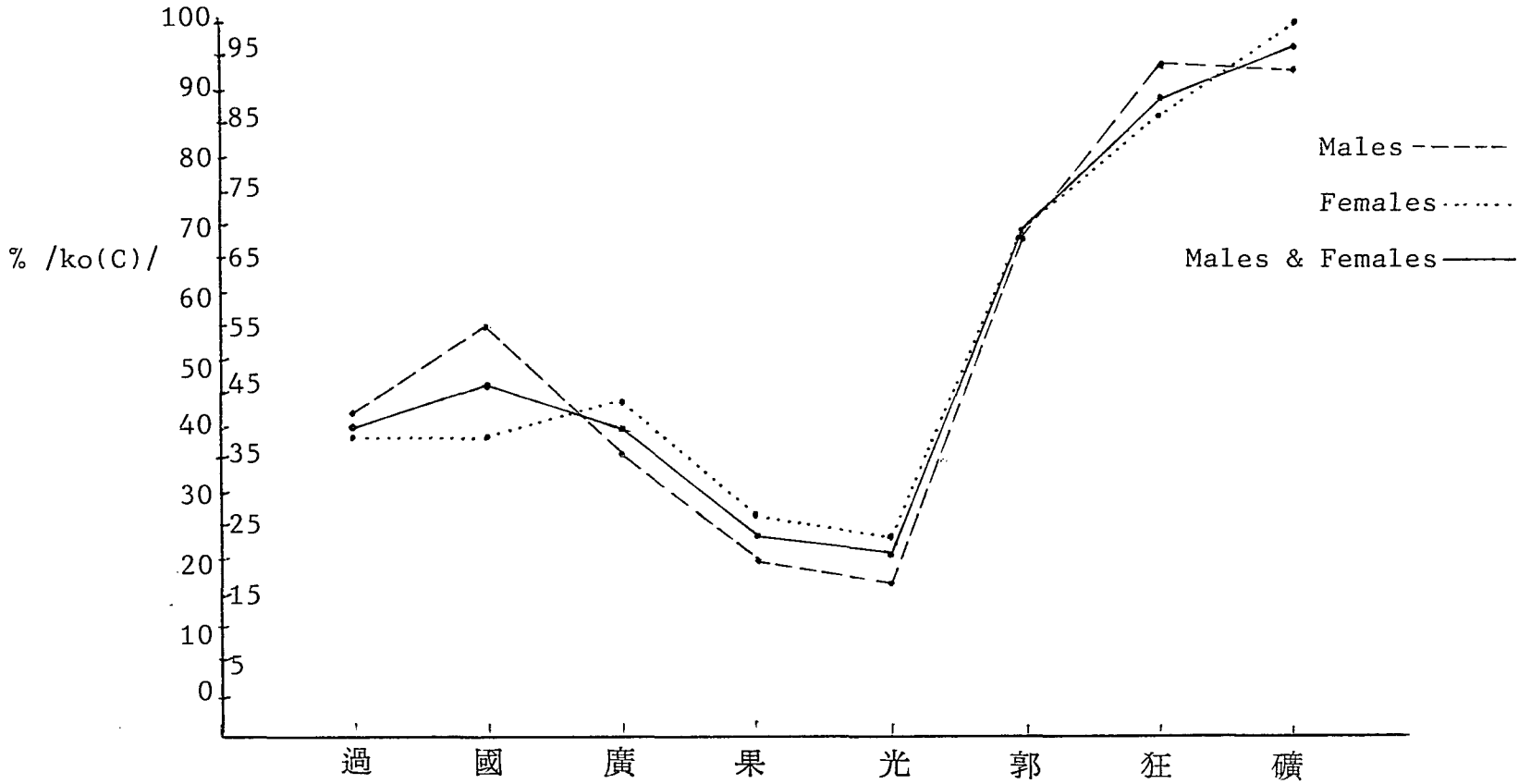


Figure 4. % change to /ko(C)/ of eight SC /kwo(C)/-class morphemes in the reading of the Word Lists by 16 male and 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

on the graph is that the overall pattern of % change to /k-/ for men and women is quite similar. However, we notice a curious pattern for the three high frequency items 過, 國, and 廣. While men use a higher figure of /k-/ for 國 (55%) and 過 (42%) than women (39% for both words), women use a higher % /k-/ for 廣 (44%) than men (36%). Women also use a higher % /k-/ for 果 and 光 than men: 27% and 24% versus 20% and 17%. The men and women's use of /k-/ for the three lowest frequency items is quite similar: for 郭 men use 68% /k-/, women use 69% /k-/; the men's use of % /k-/ for 狂 is 94% which exceeds the women's rate of 86%; all the women subjects used /k-/ in the pronunciation of 礦 for 100% /k-/ against the men's rate of 93%. Another observation we can make based on Table 8 and Figure 4 is that the three lowest frequency words 郭, 狂, and 礦 (it is assumed that they have the lowest frequency in speech based on the fact that they did not occur in the Spontaneous Speech of the study's subjects) are pronounced in the Word Lists context with the highest average rate of change to /k-/, namely 69% for 郭, 89% for 狂, and 97% for 礦.[4] The two lowest rates of % change to /k-/ belong to 果 and 光, 24% and 21%, respectively, whose frequencies in speech are much higher than the frequencies for 郭, 狂, and 礦. The generalization we offer to explain what we observe in Figure 4 is as follows: on the one hand, the higher the word's frequency in speech, then the higher its % change to /k-/ since the word has

greater opportunity to be affected by the sound change process. On the other hand, words whose frequencies in-speech are extremely low will have rates of % change to /k-/ sharply higher than the rates of % change to /k-/ for the high frequency words, because speakers are not in the habit of using the very low frequency words and therefore do not know to which initial category they belong. Since the dominant pattern in the speech community is toward the /k-/ pronunciation, subjects apparently assume that these very low frequency words belong to the SC /ko(C)/-class. At the beginning of this section we stated that 34 subjects out of the study's 75 have a complete change to /k-/ and do not use SC /kwo(C)/ forms at all. We earlier saw that 40 of the subjects have variation between SC /kwo(C)/ and /ko(C)/, and for the three high frequency words their rates of % change to /k-/ range from 50% to 90% for men and women. But what about words whose frequencies in speech are substantially lower than the high frequency words yet higher than the lowest frequency words, in this case 果 and 光. We encounter a paradox with the word 果 which I am not able to explain at this time. In Spontaneous Speech this word ranked fourth among six in terms of word frequency, 15% of all SC /kwo(C)/-class tokens were 果. When we look at its rate of % change to /k-/, we find that 果 has the third highest rate at 79% for men (90% for 國 and 84% for過) and the highest rate of % change to /k-/ at 75% for women (66% for 國 and 65% for 過).

However, when the subjects pronounce 果 in the Word Lists, its rate of % change to /k-/ drops to the second lowest for both men and women. So, although 果 is a relatively low frequency word, it has a high rate of % change to /k-/ in Spontaneous Speech but a very low rate of % change to /k-/ in the Word Lists. With respect to 光 , it appears to be the case that a word whose frequency in speech is substantially lower than the high frequency words yet higher than the lowest frequency words (and here we must observe the frequency of 光 in the Spontaneous Speech of women where it occurred nine times rather than the Spontaneous Speech of men where it only occurred once) will have a rate of % change to /k-/ which will also be substantially lower than the high frequency words since it has fewer opportunities in the spoken language to be affected by the sound change process. Figure 5 below compares the rate of % change to /k-/ for the male and female subjects in the three speech contexts of Spontaneous Speech, reading the Nursery Rhyme and Story, and the Word Lists. We observe that as the speech context increases in its formality--from Spontaneous Speech to Word Lists, the % /k-/ used by subjects decreases. From Figure 5 we clearly see that speakers who have variation between SC /kwo(C)/ and /ko(C)/ and therefore are in the habit of making the distinction between the initials still appropriately identify the low frequency word 光 as belonging to the SC /kwo(C)/-class.

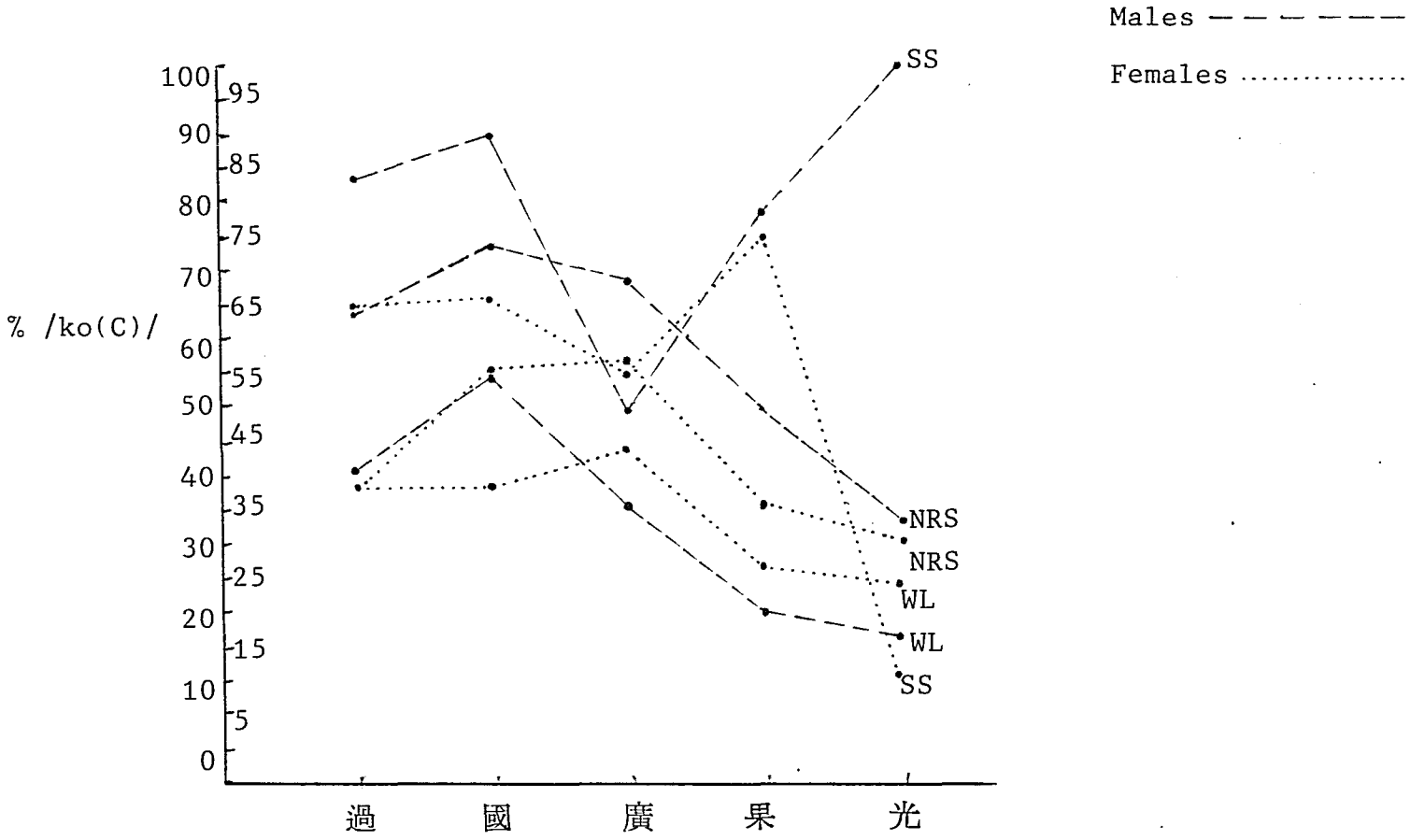


Figure 5. % change to /ko(C)/ of five SC /kwo(C)/-class morphemes in three speech contexts, Spontaneous Speech (SS), Nursery Rhyme and Story (NRS), and Word Lists (WL) by male and female subjects who have variation between SC kwo(C)/ and /ko(C)/ in the interview.

4.3.4 Use of SC /kwo(C)/, /ko(C)/, and kwo(C)/ko(C) Variation as Three Categories of Subjects

Let us now consider the patterns of occurrence of the five SC /kwo(C)/-class morphemes as either /kwo(C)/ or /ko(C)/ or both /kwo(C)/ and /ko(C)/ in the three speech contexts for the subjects who have variation between /kwo(C)/ and /ko(C)/ in the interview. Tables 9.1 and 9.2 indicate which subjects used SC /kwo(C)/, or /ko(C)/, or both /kwo(C)/ and /ko(C)/ for each of the five morphemes in Spontaneous Speech. Table 10 shows that half the male subjects pronounced 過 only with the plain velar initial while half of them had variation between SC /kwō/ and /kō/. None of the male subjects used only the SC /kwō/ form for 過 in his Spontaneous Speech. Among the 24 female subjects, however, there were three or 13% who used SC /kwō/ for 過. The number using either /k-/ or both /kw-/ and /k-/ were 41% and 46%, respectively. Two-thirds of the male subjects used only the plain velar for 國 while one-third used both /k-/ and /kw-/. Among the female subjects one-fourth used the SC /kw-/ initial. A little over half or 54% used /k-/ and 21% had variation between /kw-/ and /k-/ for 國 in their Spontaneous Speech. There was only one male subject who used SC /kw-/ exclusively for 廣; 63% of the male subjects used only /k-/ whereas 31% showed variation between /kw-/ and /k-/. Almost half the female subjects or 45% used /k-/ for 廣; three females or 15% used /kw-/; and 40% had variation between /kw-/ and /k-/. There were two male

Table 9.1. Patterns of occurrence of five SC /kwo(C)/-class morphemes as either SC /kwo(C)/ or /ko(C)/ or both SC /kwo(C)/ and /ko(C)/ in the Spontaneous Speech of 16 male subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Subj. No.	過			國			廣			果			光		
	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k
4		x			x			x			x		–	–	–
6		x			x			x			x		–	–	–
9			x	–	–	–		x			x		–	–	–
10		x			x			x			x		–	–	–
11			x			x			x		x		–	–	–
18			x		x			x			x		–	–	–
20		x				x			x			x	–	–	–
22			x		x			x		x			–	–	–
24		x			x			x			x		–	–	–
29		x			x			x				x	–	–	–
30			x		x				x		x		–	–	–
32		x				x			x		x		–	–	–
33			x		x			x			x			x	
39		x			x			x		–	–	–	–	–	–
40			x			x	x					x	–	–	–
42			x			x			x	x			–	–	–
	–	8	8	–	10	5	1	10	5	2	10	3	–	1	–
total	16			15			16			15			1		

Table 9.2. Patterns of occurrence of five SC /kwo(C)/-class morphemes as either SC /kwo(C)/ or /ko(C)/ or both SC /kwo(C)/ and /ko(C)/ in the Spontaneous Speech of 24 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Subj. No.	過			國			廣			果			光		
	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k
44		x			x			x			x		–	–	–
45		x			x		–	–	–		x		x		
48		x			x		–	–	–		x		–	–	–
49		x				x			x		x		–	–	–
53		x			x			x			x		–	–	–
54		x			x			x			x		–	–	–
55			x		x			x			x		–	–	–
57			x			x			x		x		–	–	–
58		x			x			x			x		–	–	–
59		x			x		–	–	–		x		–	–	–
60			x	x			x					x	–	–	–
61		x			x			x			x		–	–	–
62		x			x			x			x		–	–	–
63			x		x				x		x				x
64			x			x			x	x			–	–	–
65			x	x					x	–	–	–	–	–	–
66			x			x		x				x	–	–	–
68	x					x	x					x	–	–	–
69			x		x			x			x		–	–	–
71	x			x					x	x			x		
72			x		x		–	–	–			x	–	–	–
74			x	x					x		x		–	–	–
76	x			x			x			x			–	–	–
77			x	x					x	x			x		
total	3	10	11	6	13	5	3	9	8	4	15	4	3	–	1
	24			24			20			23			4		

Table 10. Number and % of subjects with either no change to /ko(C)/, change to /ko(C)/, or variation between SC /kwo(C)/ and /ko(C)/ for five SC /kwo(C)/-class morphemes in the Spontaneous Speech of 40 male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Subj.	過			國			廣			果			光		
	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k
Males	-	8	8	-	10	5	1	10	5	2	10	3	-	1	-
fracn	-	8/16	8/16	-	10/15	5/15	1/16	10/16	5/16	2/15	10/15	3/15	-	1/1	-
%	0	50	50	0	67	33	6	63	31	13	67	20	0	100	0
Fe-males	3	10	11	6	13	5	3	9	8	4	15	4	3	-	1
fracn	3/24	10/24	11/24	6/24	13/24	5/24	3/20	9/20	8/20	4/23	15/23	4/23	3/4	-	1/4
%	13	41	46	25	54	21	15	45	40	17	66	17	75	0	25
total M & F	3/40	18/40	19/40	6/39	23/39	10/39	4/36	19/36	13/36	6/38	25/38	7/38	3/5	1/5	1/5
%	7	45	48	15	59	26	11	53	36	16	66	18	60	20	20

subjects or 13% who used only /kw-/ for 果, but 67% used /k-/; 20% of the subjects used both /kw-/ and /k-/ for 果 in their Spontaneous Speech. The pattern for the female subjects was quite similar: almost two-thirds used only the plain velar while 17% used /kw-/ and 17% used both /kw-/ and /k-/ initials. Only one male subject used 光 in his Spontaneous Speech and it was with the plain velar initial. However, four female subjects used 光 : three or 75% used the appropriate /kw-/ initial and one used both /kw-/ and /k-/.

Figures 6, 7, and 8 represent the figures from Table 10 as graphs. Figure 6 indicates the % of male and female subjects who used only SC /kwo(C)/ forms for the five SC /kwo(C)-class morphemes in their Spontaneous Speech. Figure 7 indicates the % of male and female subjects who used only /ko(C)/ forms for the five SC /kwo(C)/-class morphemes. Figure 8 indicates the % of male and female subjects who have variation between SC /kwo(C)/-class morphemes in their Spontaneous Speech.

Gnerally speaking, in terms of the overall patterns for the first four morphemes, Figures 7 and 8 show that men and women as separate groups behave in quite similar ways. Figure 7 shows that the male and female subjects who use only /ko(C)/ forms are much alike in their use of /ko(C)/ for each of the four lexical items. The distance between the male and female curves is not great--it ranges from 1% for 果 (67% of the men and 66% of the women use /kó/) to 13% for 國, 18% for 廣, and 9% for 過. In all cases the proportion of the

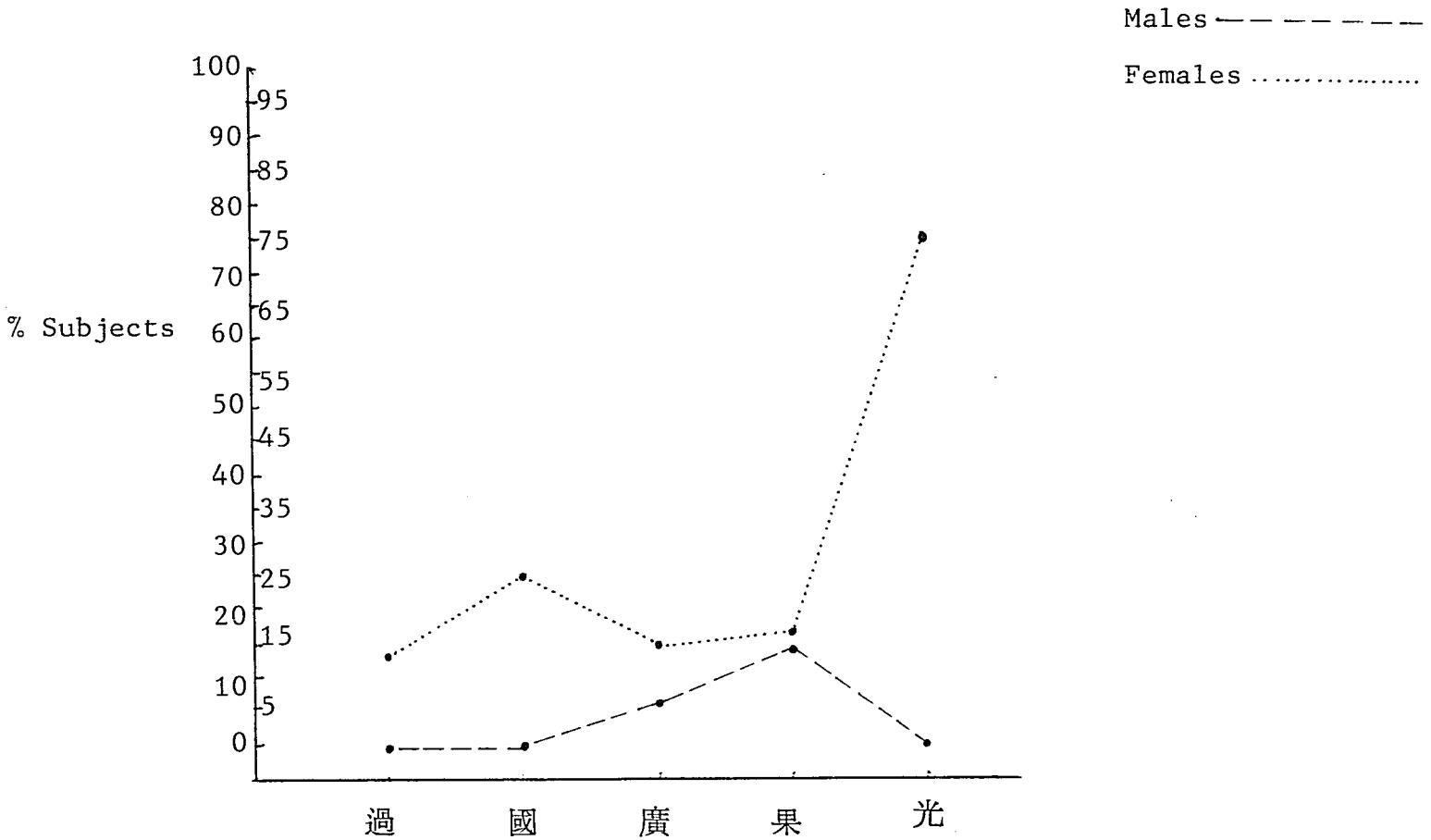


Figure 6. % of 16 male and 24 female subjects with SC /kwo(C)/ for five SC /kwo(C)/-class morphemes in the Spontaneous Speech sections of the interviews. (The 40 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

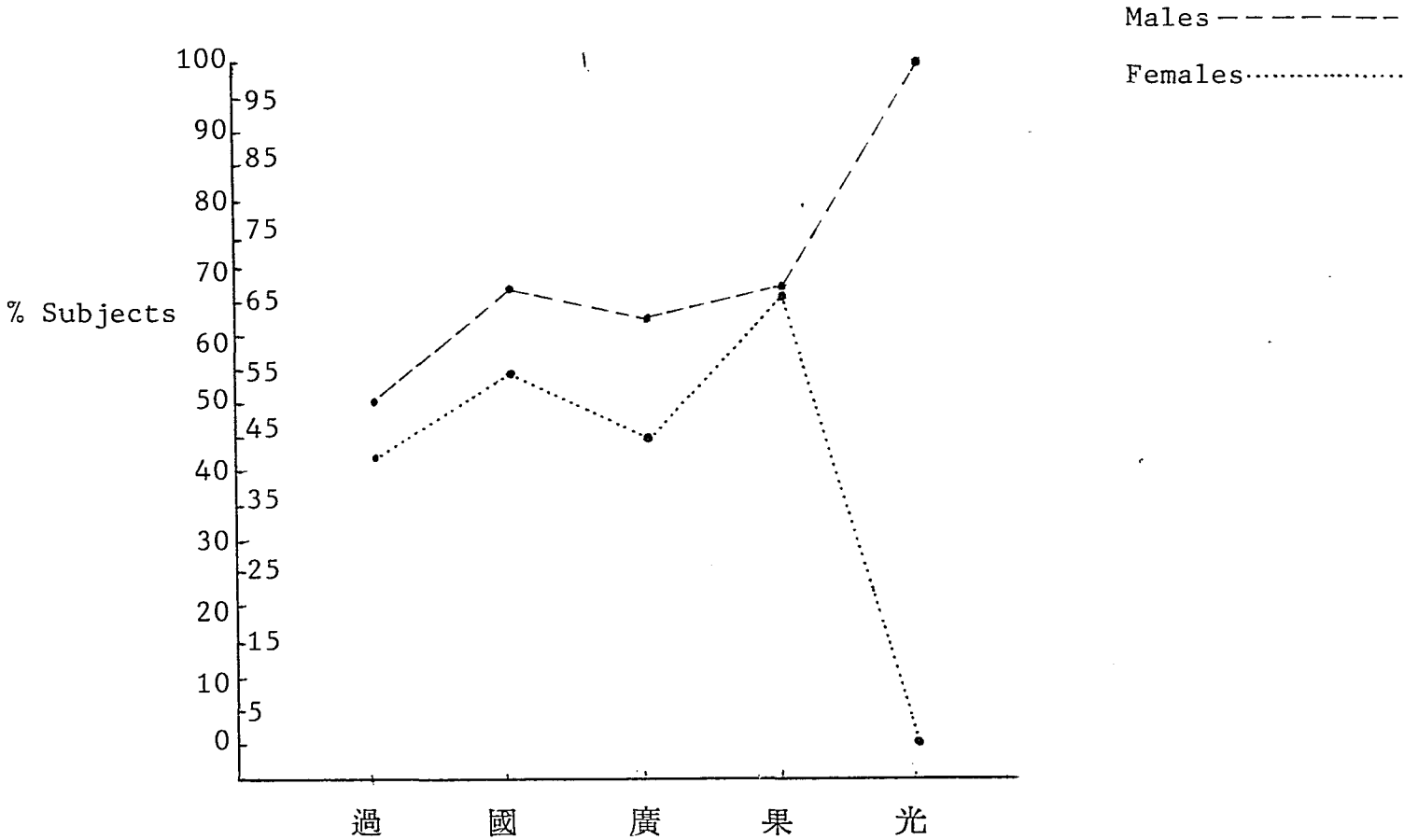


Figure 7. % of 16 male and 24 female subjects with /ko(C)/ for five SC /kwo(C)/-class morphemes in the Spontaneous Speech sections of the interviews. (The 40 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

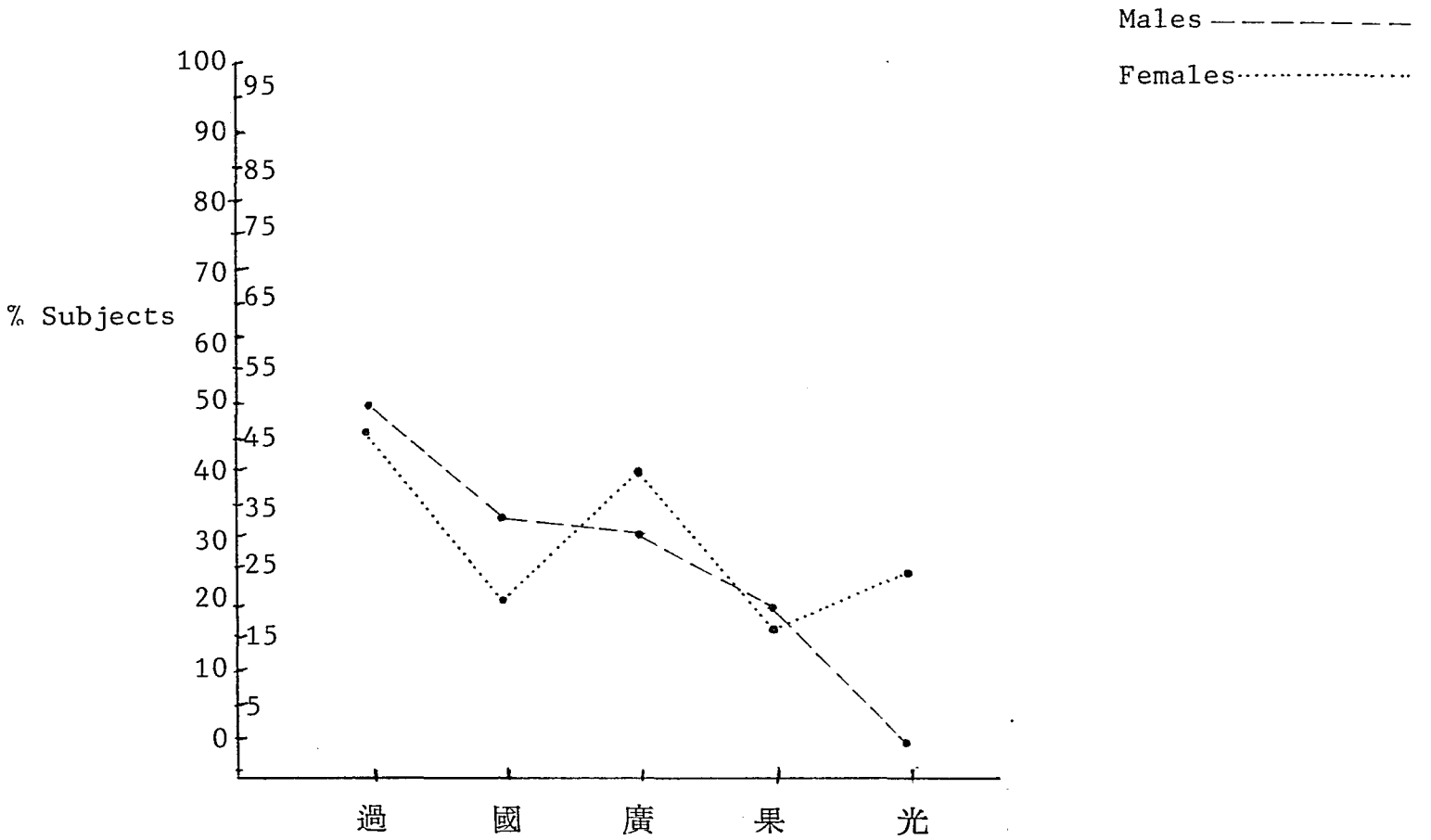


Figure 8. % of 16 male and 24 female subjects with variation between SC /kwo(C)/ and /ko(C)/ for five SC /kwo(C)/-class morphemes in the Spontaneous Speech sections of the interviews. (The 40 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

male subjects who use /ko(C)/ forms exceeds the proportion of females. When the males' curve rises, the females' curve also rises; when the males' curves declines, the females' curve also declines. Figure 8 indicates that the proportions of men who have variation between SC /kwo(C)/ and /ko(C)/ for the various morphemes are much like the proportions of women who have variation between SC /kwo(C)/ and /ko(C)/. As in Figure 7, the men and women's curves are quite close and a slightly greater proportion of men have variation between /kwo(C)/ and /ko(C)/ than the women. There is one point of divergence between the male and female subjects and that is for the word 廣 for which a larger percentage of women than men have variation, 40% of the women versus 31% of the men.

By averaging the proportions of men and women together as one group, Figure 9 below compares these three categories of subjects who have only SC /kwo(C)/, or only /ko(C)/, or variation between SC /kwo(C)/ and /ko(C)/ in their Spontaneous Speech for five morphemes. Looking at only the first four lexical items, we see that with the exception of 過 the proportions of men and women who use only /ko(C)/ for 國 , 廣 , and 果 greatly exceed the proportions who use SC /kwo(C)/. In addition, the subjects who have variation between SC /kwo(C)/ and /ko(C)/ for the various items occupy a middle ground between /ko(C)/ and SC /kwo(C)/. Only for the word 過 does the percentage of subjects who say both SC /kwō/ and /kō/ exceed the percentage who say only /kō/ but then by

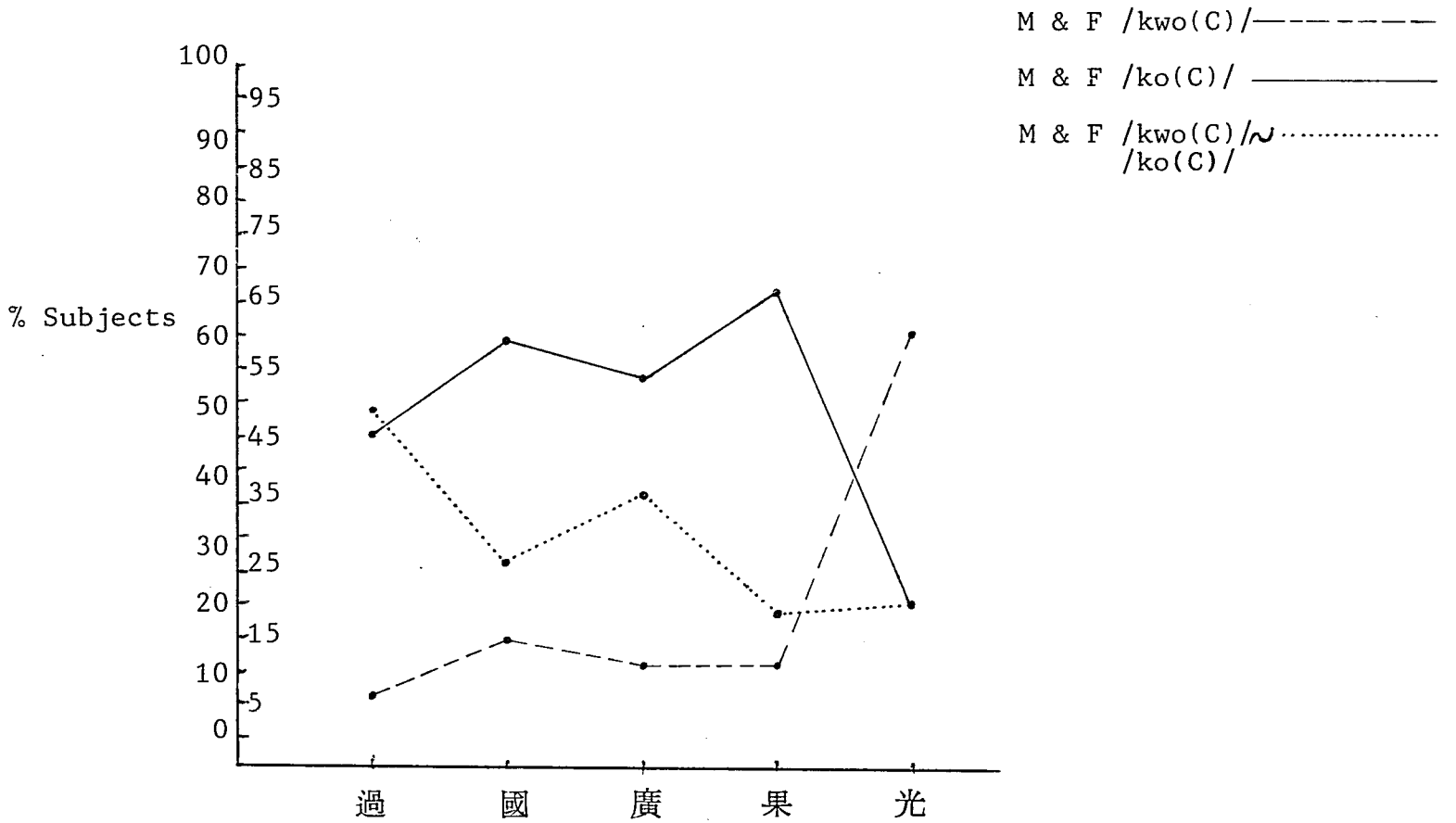


Figure 9. % of 40 male and female subjects who either have no change to /ko(C)/, change to /ko(C)/, or variation between SC /kwo(C)/ and /ko(C)/ for five SC /kwo(C)/-class morphemes in the Spontaneous Speech sections of the interviews. (The 40 male and female subjects are those who have variation between /kwo(C)/ and /ko(C)/ in the interview).

only 3%. Tables 11.1 and 11.2 indicate the patterns of ocurrence of SC /kwo(C)/, /ko(C)/, and variation between SC /kwo(C)/ and /ko(C)/ for each of the 38 subjects who read the eight lexical items in the Nursery Rhyme, Story, and Word Lists. Table 12 indicates the proportions of subjects who have these patterns as percentage figures. The number of times these eight lexical items occurred in the Nursery Rhyme, Story, and Word Lists are as follows:

過 --7 (4 in Story, 3 in Word Lists)

國 --9 (6 in Story, 3 in Word Lists)

廣 --5 (2 in Story, 3 in Word Lists)

果 --2 (1 in Story, 1 in Word Lists)

光 --5 (2 in Nursery Rhyme or 4 if subject read the title, 1 in Story, and 2 in Word Lists)

郭 --3 (3 in Word Lists)

狂 --1 (1 in Word Lists)

礦 --1 (1 in Word Lists)

Figure 10 presents in graph form the figures in Table 12 for these subjects who have only SC /kwo(C)/ for the lexical items. The curves for men and women in this category are quite similar, and the distance betwen the curves is not great. The most remarkable observation we can make is that a greater proportion of females than males use SC /kwo(C)/ for all items except two. A greater proportion of the males said SC /kwôŋ/ for光 than females, 56% versus 50%; and one male subject said SC /k'wōŋ/ for礦 whereas no female subjects used this pronunciation. The females' higher % of /kwo(C)/ in reading corroborates Labov's findings that

Table 11.1. Patterns of occurrence of eight SC /kwo(C)/-class morphemes as either SC /kwo(C)/ or /ko(C)/ or both SC /kwo(C)/ and /ko(C)/ in the reading of the Nursery Rhyme, Story, and Word Lists by 16 male subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Subj. No.	過			國			廣			果			光			郭			狂			礦		
	kw-	k-	k/kw	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k
4		x			x			x		x			x				x			x			x	
6			x		x				x			x	x				x			x			x	
9			x			x			x			x			x		x			x			x	
10			x		x				x		x				x		x			x			x	
11			x			x	x			x			x			x					x		x	
18	x			x					x	x			x			x				x			x	
20		x			x				x	x			x				x			x			x	
22			x			x			x	x			x				x			x			x	
24			x			x			x	x					x		x			x		–	–	–
29			x			x			x		x				x			x		x			x	
30			x			x			x			x			x	x			–	–	–	x		
32			x			x			x			x			x			x		x			x	
33		x			x				x		x			x			x			x			x	
39		x			x				x	x			x				x			x			x	
40	x			x			x			x			x					x		x			x	
42			x	x			x			–	–	–	x			x				x			x	
	2	4	10	3	6	7	3	1	12	8	3	4	9	1	6	4	9	3		14	1	1	14	
total	16			16			16			15			16			16			15			15		

Table 11.2. Patterns of occurrence of eight SC /kwo(C)/-class morphemes as either SC /kwo(C)/ or /ko(C)/ or both SC /kwo(C)/ and /ko(C)/ in the reading of the Nursery Rhyme, Story, and Word Lists by 22 female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Subj. No.	過			國			廣			果			光			郭			狂			礦		
	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k
44			x		x				x			x			x		x			x			x	
45	x					x	x			x			x				x			x			x	
48			x		x				x	x					x		x			x			x	
49			x			x		x		x			x				x		x				x	
53			x			x			x	x			x					x		x			x	
54			x		x			x			x				x		x			x			x	
55			x			x			x			x			x			x		x			x	
57			x	x			x			x			x				x			x			x	
58			x			x			x		x				x		x		x				x	
59		x			x			x			x				x		x			x			x	
60	x			x			x			x			x			x			-	-	-	-	-	-
61			x			x		x			x			x			x			x		-	-	-
62			x		x			x				x			x		x			x		-	-	-
63			x		x			x			x			x			x			x		-	-	-
64			x	x			x			x			x				x			x			x	
65	x			x			x			x			x			x				x			x	
66			x	x					x	x			x			x				x			x	
68	x			x			x			x			x				x			x			x	
69			x			x			x	x					x	x				x			x	
74			x			x			x			x			x	x				x		-	-	-
76			x	x					x	-	-	-	x			x				x			x	
77			x	x			x			x			x			x				x		-	-	-
	4	1	17	8	6	8	7	6	9	12	5	4	11	2	9	7	13	2	2	19	-	-	14	-
total	22			22			22			21			22			22			21			14		

Table 12. Number and % of subjects with either no change to /ko(C)/, change to /ko(C)/, or variation between SC /kwo(C)/ and /ko(C)/ for eight SC /kwo(C)/-class morphemes in the reading of the Nursery Rhyme, Story, and Word Lists by 38 male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Subj.	過			國			廣			果			光			郭			狂			礦		
	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k	kw-	k-	kw/k
Males	2	4	10	3	6	7	3	1	12	7	3	4	9	1	6	4	9	3	-	14	1	1	14	-
fracn	$\frac{2}{16}$	$\frac{4}{16}$	$\frac{10}{16}$	$\frac{3}{16}$	$\frac{6}{16}$	$\frac{7}{16}$	$\frac{3}{16}$	$\frac{1}{16}$	$\frac{12}{16}$	$\frac{7}{14}$	$\frac{3}{14}$	$\frac{4}{14}$	$\frac{9}{16}$	$\frac{1}{16}$	$\frac{6}{16}$	$\frac{4}{16}$	$\frac{9}{16}$	$\frac{3}{16}$		$\frac{14}{15}$	$\frac{1}{15}$	$\frac{1}{15}$	$\frac{14}{15}$	
%	13	25	62	19	37	44	19	6	75	50	21	29	56	6	38	25	56	19	0	93	7	7	93	0
Fe-males	4	1	17	8	6	8	7	6	9	12	5	4	11	2	9	7	13	2	2	19	-	-	14	-
fracn	$\frac{4}{22}$	$\frac{1}{22}$	$\frac{17}{22}$	$\frac{8}{22}$	$\frac{6}{22}$	$\frac{8}{22}$	$\frac{7}{22}$	$\frac{6}{22}$	$\frac{9}{22}$	$\frac{12}{21}$	$\frac{5}{21}$	$\frac{4}{21}$	$\frac{11}{22}$	$\frac{2}{22}$	$\frac{9}{22}$	$\frac{7}{22}$	$\frac{13}{22}$	$\frac{2}{22}$	$\frac{2}{21}$	$\frac{19}{21}$	-	-	$\frac{14}{14}$	-
%	18	5	77	36	28	36	32	27	41	57	24	19	50	9	41	32	59	9	10	90	0	-	100	0
total M & F	$\frac{6}{38}$	$\frac{5}{38}$	$\frac{27}{38}$	$\frac{11}{38}$	$\frac{12}{38}$	$\frac{15}{38}$	$\frac{10}{38}$	$\frac{7}{38}$	$\frac{21}{38}$	$\frac{19}{35}$	$\frac{8}{35}$	$\frac{8}{35}$	$\frac{20}{38}$	$\frac{3}{38}$	$\frac{15}{38}$	$\frac{11}{38}$	$\frac{22}{38}$	$\frac{5}{38}$	$\frac{2}{36}$	$\frac{33}{36}$	$\frac{1}{36}$	$\frac{1}{29}$	$\frac{28}{29}$	-
%	16	13	71	29	32	39	26	18	56	54	23	23	53	8	39	29	58	13	5	92	3	3	97	0

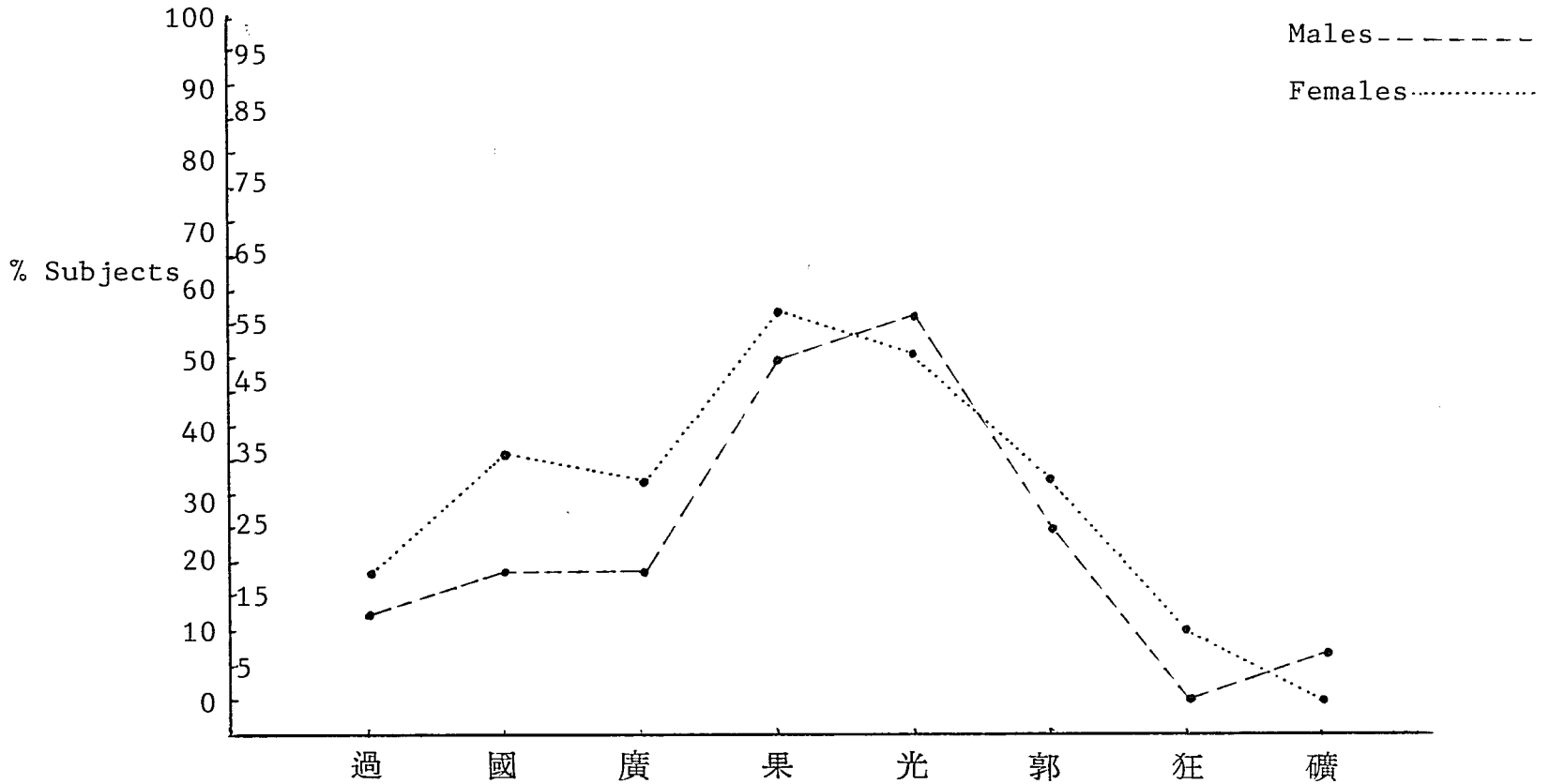


Figure 10. % of 16 male and 22 female subjects who used SC /kwo(C)/ for eight SC /kwo(C)/-class morphemes in reading the Nursery Rhyme, Story, and Word Lists. (The 38 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

". . . women are more sensitive than men to overt sociolinguistic values. Even when women use the most extreme forms of an advancing sociolinguistic variable in their casual speech . . . , they correct more sharply than men in formal contexts" (Labov 1972b:243).

Figure 11 below presents the percentage figures from Table 12 for the category of men and women who use only /ko(C)/ forms in reading. In this figure we see that a greater proportion of female subjects than males used /ko(C)/ for more lexical items than the males. A greater percentage of females use /ko(C)/ for 廣, 果, 光, 郭, and 礦 than the males, but a greater percentage of the male subjects use /ko(C)/ for 過, 國, and 狂 than the female subjects. Except for 過 and 廣 the differences in the proportions between men and women are not great--25% of the male subjects and 5% of the female subjects used /kō/ for 過; but the figures were slightly reversed for 廣 --27% of the female subjects said /kón/ while 6% of the male subjects used this form in their reading pronunciation. Figure 11 indicates that 郭 has a rate of % change to /k-/ of 56% for men and 59% for women, a rate much lower than 狂 at 92% and 礦 at 97%. If these two items had occurred more than once in the written instruments, their rates of % change to /k-/ would very likely have been lower and closer to the rate of 郭.

Figure 12 presents the percentages of male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/.

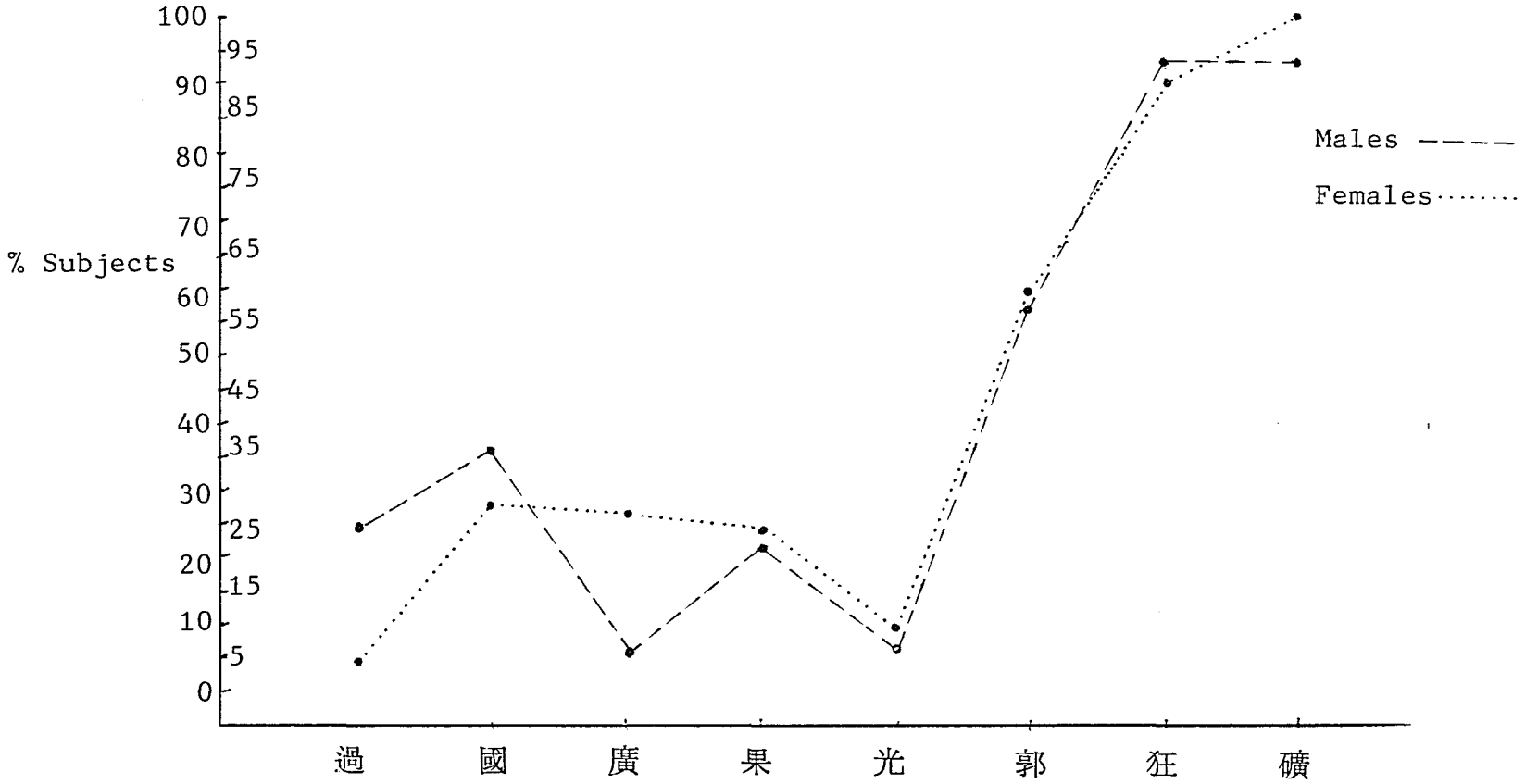


Figure 11. % of 16 male and 22 female subjects who used /ko(C)/ for eight SC /kwo(C)/-class morphemes in reading the Nursery Rhyme, Story, and Word Lists. (The 38 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

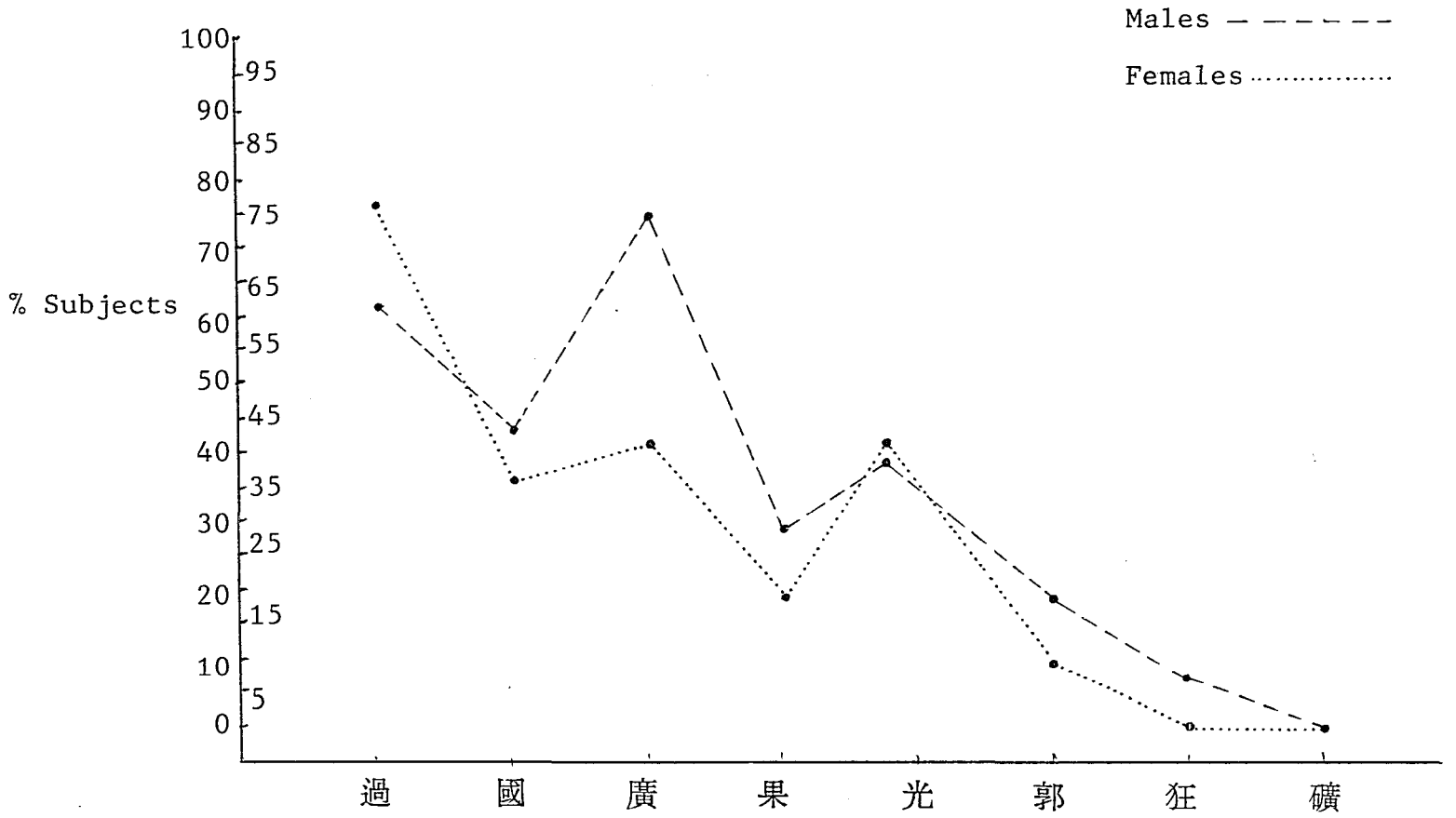


Figure 12. % of 16 male and 22 female subjects who used both SC /kwo(C)/ and /ko(C)/ for eight SC /kwo(C)/-class morphemes in reading the Nursery Rhyme, Story, and Word Lists. (The 38 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

With two exceptions the proportions of male subjects who have variation for the lexical items exceed the proportions of females who have variation. These exceptions are 過 for which 77% of the female subjects have both SC /kwō/ and /kō/ versus 62% for the males, and 光 for which 41% of the females have variation and 38% of the males have variation. With one exception the distance between the male and female curves is not great. The exception is 廣 --75% of the male subjects said both SC /kwóŋ/ and /kóŋ/, whereas only 41% of the female subjects used both forms. Furthermore, the male and female curves closely follow each other for each lexical item in that both curves show an increase or decrease in the proportions of subjects who have variation as the curves move from one lexical item to another. Since 狂 and 礦 occurred only once each in the written instruments, there was no opportunity for the subjects to pronounce the words more than once (unless subjects happened to repeat the items) and, consequently, we have no basis for calculating what proportion of the subjects have variation between SC /kwo(C)/ and /ko(C)/ for these two items. In other words, the pronunciation situation was really one of only either SC /kwo(C)/ or /ko(C)/, the third category of variation between the two was precluded by the failure to include these two items more than once. Fortunately, however, the very low frequency word 郭 appeared three times which was sufficient to identify those speakers who used both SC /kwōk/ and /kōk/ for this

word. As one of the very low frequency items, 郭 has the lowest proportion of speakers who have variation between SC /kwōk/ and /kōk/ at 13%.

Finally, Figure 13 averages the proportions of men and women together as one group to compare the three categories of subjects who have only SC /kwo(C)/, or only /ko(C)/, or variation between SC /kwo(C)/ and /ko(C)/ in their reading pronunciation. We expect speakers to revert to their careful speech style which is in the direction of the conservative, standard pronunciation when reading the Story and Word Lists. In comparing Figure 13 with Figure 9, we notice a steep decline in the proportions of subjects who used only /ko(C)/ and commensurate sharp increases in the proportions of subjects who used SC /kwo(C)/ and who have variation between SC /kwo(C)/ and /ko(C)/.

In Figure 13 we observe a striking correspondence between the highest curves of the three categories of subjects and the three word frequency groupings previously mentioned. The three highest curves each representing the majority of subjects who have either /kwo(C)/~/ko(C)/ variation, SC /kwo(C)/, or /ko(C)/ for the lexical items correspond to those lexical items which have high word frequency, low word frequency, and very low word frequency, respectively. The three highest curves corresponding to the levels of word frequency create three natural bands across the graph. For the high frequency words 過 , 國 , and 廣 , the highest curve corresponds to the category of

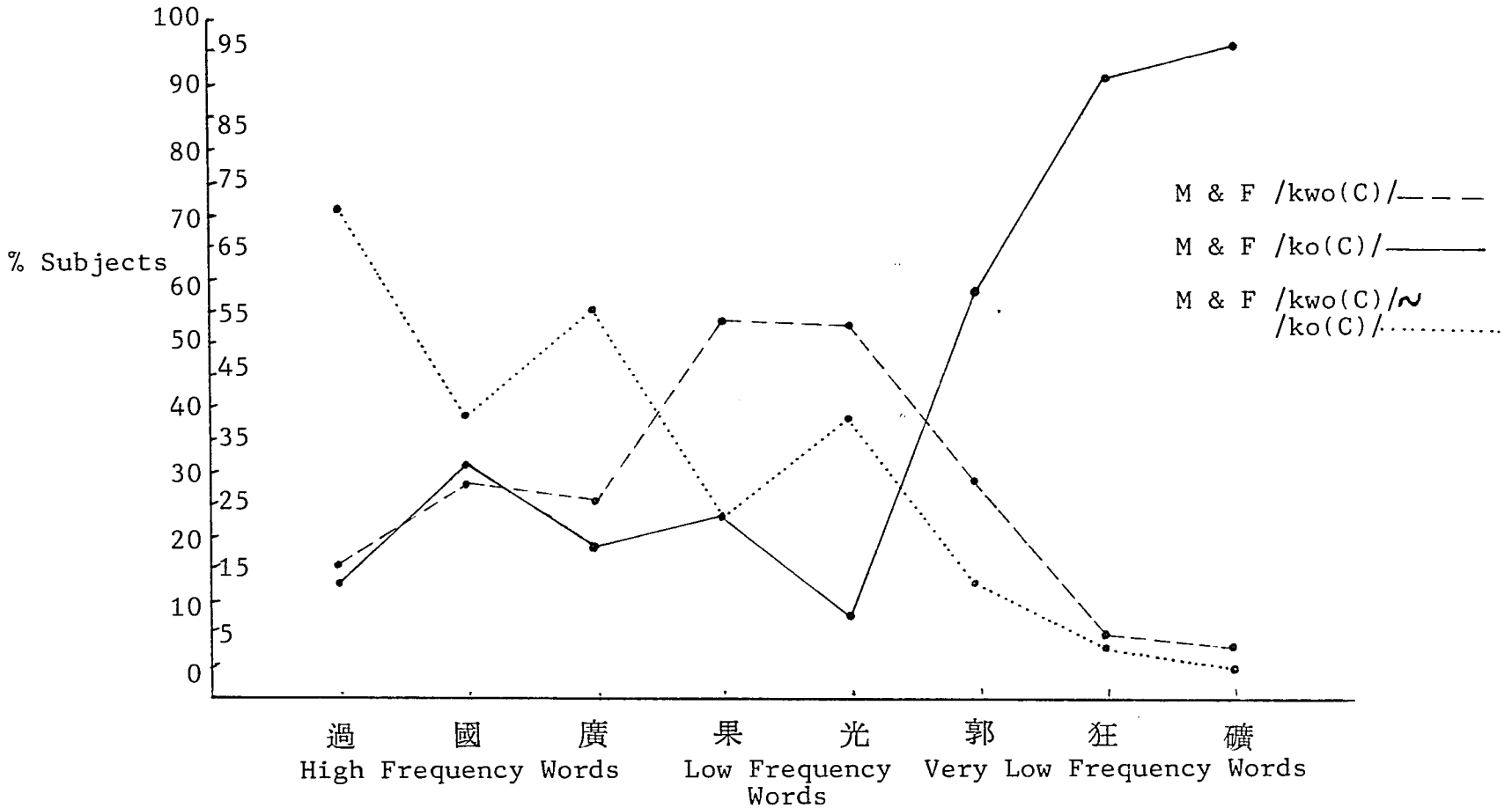


Figure 13. % of 38 male and female subjects who either used SC /kwo(C)/, /ko(C)/, or SC /kwo(C)/ and /ko(C)/ for eight SC /kwo(C)/-class morphemes in the reading of the Nursery Rhyme, Story, and Word Lists. (The 38 male and female subjects are those who have variation between SC /kwo(C)/ and /ko(C)/ in the interview).

subjects who have variation between SC /kwo(C)/ and /ko(C)/; i.e., a greater proportion of male and female subjects used both forms in their reading pronunciation of these three words than used either SC /kwo(C)/ or /ko(C)/ exclusively. On the other hand, the SC /kwo(C)/ and /ko(C)/ curves are remarkably close together which indicates that the proportions of subjects who used only SC /kwo(C)/ or only /ko(C)/ in reading are fairly similar. Secondly, the highest curve for the low frequency words 果 and 光 belongs to the category of subjects who used the SC /kwo(C)/ forms, i.e., a larger percentage of subjects used the standard pronunciation of 果 and光 when reading than said /ko(C)/ or had variation between SC /kwo(C)/ and /ko(C)/. Finally, for the three lowest frequency items the highest curve is the category of subjects who used only /ko(C)/, i.e., the majority of subjects used the changed form in their reading pronunciation of these last three words. Figure 13 clearly shows how the delabialization sound change process has differentially affected lexical items of the SC /kwo(C)/-class in terms of the proportions--and by extension, the speech community--who used the unchanged SC /kwo(C)/ forms, the changed /ko(C)/ forms, or have variation between both the SC /kwo(C)/ and /ko(C)/ forms. Figure 13 can be likened to one frame taken from a sequence of frames of a motion picture film which "freezes" the sound change process in its movement across that portion of the speech community who uses both the SC /kwo(C)/ forms and the innovative /ko(C)/ forms.

In summary, when we consider the reading pronunciation

of that portion of our sample's subjects who used both SC /kwo(C)/ and /ko(C)/ in either their Spontaneous Speech or reading or in both speech styles, the majority of subjects will have variation between SC /kwo(C)/ and /ko(C)/ for the three high frequency lexical items 過 , 國 , and 廣 . An average of 55% of the subjects used both forms for the high frequency group of lexical items. However, for the low frequency items 果 and 光 , the majority of our subjects with SC /kwo(C)/~/ko(C)/ variation (an average of 54%) shift to the standard labial velar pronunciation when reading. For the very low frequency items (at least for 郭 , we cannot reliably say much about 狂 and 礦 for the reason previously mentioned), the majority of subjects (58% for 郭) have adopted the innovative, delabialized /ko(C)/ forms.

4.4 The Social Dimension of SC kw- → k-/__o(C)

As was the case with the SC /ŋ/ → /m̥/ change and as has been pointed out in the previous section, the sample's subjects can be subdivided into three groups on the basis of how their speech behavior has been affected by the delabialization sound change: viz., those subjects who have not undergone the change of SC kw- → k-/__o(C) and still use SC /kwo(C)/ forms; those who have undergone a complete change to /k-/; and those who have variation between SC /kwo(C)/ and /ko(C)/. Tables 13.1 and 13.2 below list the % /k-/-scores for each of the study's 75 subjects in three

Table 13.1. % /k-/ for male subjects in four age groups and three speech contexts. (Age groups: A, 15-22 years of age; B, 23-30 years of age; C, 31-44 years of age; D, 45+ years of age. SS=Spontaneous Speech, NRS=Nursery Rhyme and Story; WL=Word Lists)

A (15-22)				B (23-30)				C (31-44)				D (45+)			
Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL
1	100	100	100	22	93	53	41	32	95	100	67	38	100	100	100
2	100	100	100	23	100	100	100	33	95	100	94	39	100	67	76
3	100	100	100	24	100	24	40	34	100	100	100	40	21	0	28
4	100	94	71	25	100	100	100	35	100	100	100	41	100	100	100
5	100	100	100	26	100	100	100	36	100	100	100	42	6	6	13
6	100	61	59	27	100	100	100	37	100	100	100	43	100	100	100
7	100	100	100	28	100	100	100								
8	100	100	100	29	98	100	56								
9	94	61	44	30	82	88	0								
10	100	100	82	31	100	100	100								
11	80	47	17												
12	100	100	100												
13	100	100	100												
14	100	100	100												
15	100	100	100												
16	100	100	100												
17	100	100	100												
18	92	6	18												
19	100	100	100												
20	96	67	71												
20 S	1962	1736	1662	10 S	973	865	737	6 S	590	600	561	6 S	427	373	417
% /k-/	98%	87%	83%	% /k-/	97%	87%	74%	% /k-/	98%	100%	94%	% /k-/	71%	62%	70%

Table 13.2. % /k-/ for female subjects in four age groups and three speech contexts. (Age groups: A, 15-22 years of age; B, 23-30 years of age; C, 31-44 years of age; D, 45+ years of age. SS=Spontaneous Speech, NRS=Nursery Rhyme and Story; WL=Word Lists)

A (15-22)				B (23-30)				C (31-44)				D (45+)			
Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL
44	100	81	71	50	100	100	100	64	43	6	41	72	61	--	--
45	96	19	29	51	100	100	100	65	16	0	12	73	100	100	100
47	100	100	100	52	100	100	100	66	51	17	21	74	80	50	64
48	100	82	67	53	98	75	47	67	100	100	100	75	0	--	0
49	85	53	50	54	100	59	100	68	10	0	29	76	0	13	12
				55	95	38	64	69	42	44	22	77	11	6	20
				56	100	100	100	70	100	100	100				
				57	64	6	29	71	2	--	--				
				58	100	100	67								
				59	100	100	89								
				60	11	0	33								
				61	100	94	80								
				62	100	88	73								
				63	81	94	100								
5 S	481	335	317	14 S	1249	1054	1082	8 S	362	267	325	6 S	252	169	196
% /k-/	96%	67%	63%	% /k-/	89%	75%	77%	% /k-/	45%	38%*	46%*	% /k-/	42%	42%*	39%*
										*7 S	*7 S			*4 S	*5 S

speech contexts. There were 46 subjects, 31 males and 15 females, whose Spontaneous Speech showed a complete change to the plain velar initial. The Spontaneous Speech of 27 subjects, 11 males and 16 females, has variation between SC /kwo(C)/ and /ko(C)/. Only two elderly female informants preserve the labialized velar contrast in their Spontaneous Speech. Figure 14, a scattergram, depicts the distribution of the kw-/k- variable in the Spontaneous Speech of the study's 75 subjects. Figure 14 indicates that age is a good predictor of the occurrence of /k-/ in Spontaneous Speech only for subjects under the age of 24: all subjects between the ages of 15 and 24 have very high % /k-/-scores for their Spontaneous Speech. There are 33 subjects, 23 males and 10 females, in the 15 to 24 age group who have an average of 98% /k-/ in their Spontaneous Speech--both as two separate male and female groups and as one group of males and females taken together. Speakers over the age of 24, however, display a wide range in their % /k-/-scores. For example, out of nine females between the ages of 25 and 30 with % /k-/-scores ranging from 11% to 100%, there are five females who have 100% /k-/; /k-/-scores of eight females between the ages of 31 and 44 range from 2% to 100% with two females having 100% /k-/-scores; and six females between the ages of 45 and 75 have % /k-/-scores ranging from 0% to 100% with only one subject having 100% /k-/. The proportion of male subjects over age 25 with /k-/-scores of 100% is even larger: five out of seven

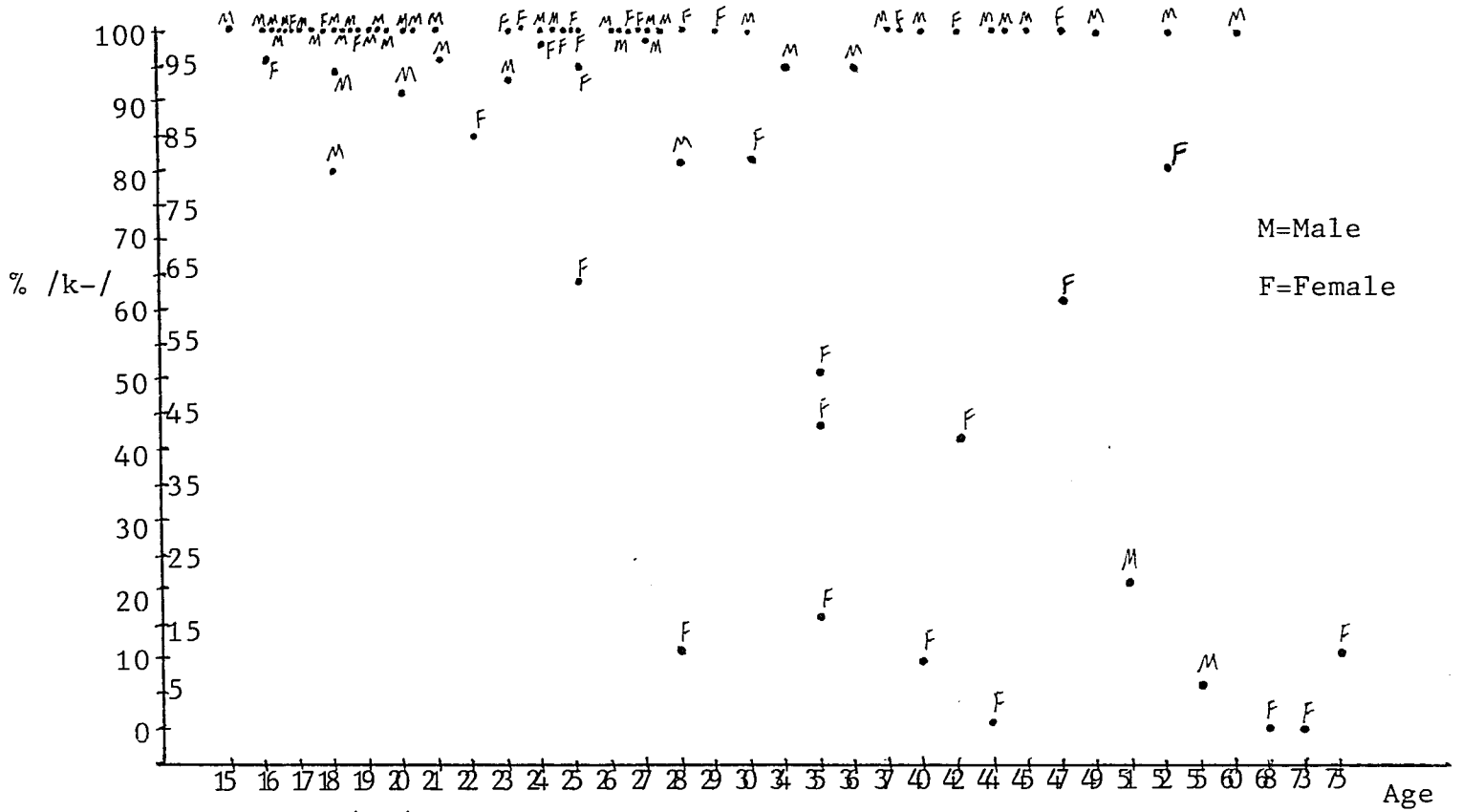


Figure 14. % /k-/ for Spontaneous Speech for the sample population by age and sex;

males between the ages of 25 and 30 have 100% /k-/; four subjects out of six between the ages of 31 and 44 have 100% /k-/; and four out of six subjects between the ages of 45 and 60 have 100% /k-/ in their Spontaneous Speech. There are 12 females out of 23 aged 25 and over who have variation between SC /kwo(C)/ and /ko(C)/ in their Spontaneous Speech. For the males over age 25 who have variation, the figure is six out of 19 or 32% of the group, a proportion much smaller than the female subjects. Eight females in the age group 25 to 75 or 35% of the 23 subjects have a complete change to /k-/. The figure for the male group is almost twice that of the females: 13 male subjects out of the 19 between 25 and 60 or 68% have a complete change to /k-/.

Figure 15 indicates the % /k-/-scores for the 73 subjects who read the Nursery Rhyme and Story. The male subjects hold their lead in % /k-/-scores for this speech context: 30 out of 42 male subjects or 71% have 100% /k-/ in this section of the interview. There were 14 out of 20 subjects or 70% in the 15 to 22 age group who used 100% /k-/; seven out of 10 or 70% in the 23 to 30 age group had 100% /k-/; six out of six in the 31 to 44 age group or 100% of this age group had 100% /k-/; and three out of six in the 45 and over age group had 100% /k-/. The proportions of female subjects with 100% /k-/ are much lower; there were 10 females out of the 29 who read the Nursery Rhyme and Story or 34% who had 100% /k-/. One out of five young

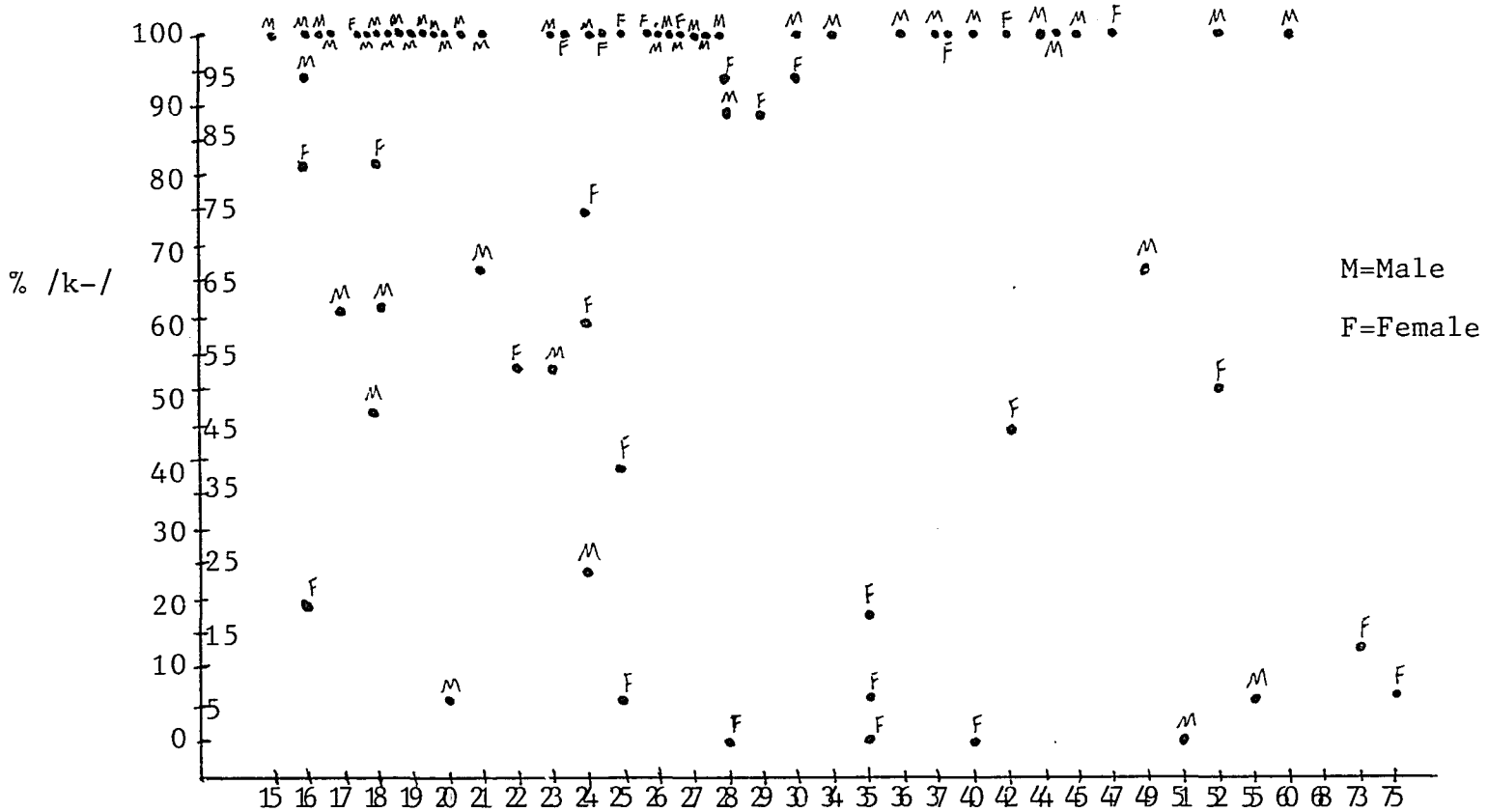


Figure 15. % /k-/ for reading the Nursery Rhyme and Story for the sample population by age and sex.

women between the ages of 15 and 22 or 20% had 100% /k-/; six out of 14 aged 23 to 30 or 43% of the group had 100% /k-/; two out of seven or 29% aged 31 to 44 had 100% /k-/; and one out of four aged 45 and over or 25% had 100% /k-/.

Figure 16 presents the % /k-/-scores for 73 subjects who read the Word Lists. There were 26 males or 62% of all males and 10 females or 33% of females reading the Word Lists who used 100% /k-/ in the most formal speech context of the interview. The breakdown by age group was as follows: 13 out of 20 males in the 15 to 22 age group or 65% had 100% /k-/; six out of ten male subjects in the 23 to 30 age group or 60% had 100% /k-/; four out of six male subjects in the 31 to 44 age group or 67% had 100% /k-/; and three out of six male subjects aged 45 and over had 100% /k-/. Among the female subjects one out of five or 20% of the total in the 15 to 22 age group had 100% /k-/; six out of 14 subjects in the 23 to 30 age group or43% had 100% /k-/; two out of seven in the 31 to44 age group or 29% had 100% /k-/; and one out of five females aged 45 and over or 20% had 100% /k-/.

Tables 13.1 and 13.2 above provide the average % /k-/ for the four age groups of men and women for the three speech contexts. Figures 17.1 and 17.2 below translate these numbers into two graphs for men and women. We see that for both men and women the three scores for Spontaneous Speech, the Nursery Rhyme and Story, and Word Lists become progressively lower as the speech context becomes more formal

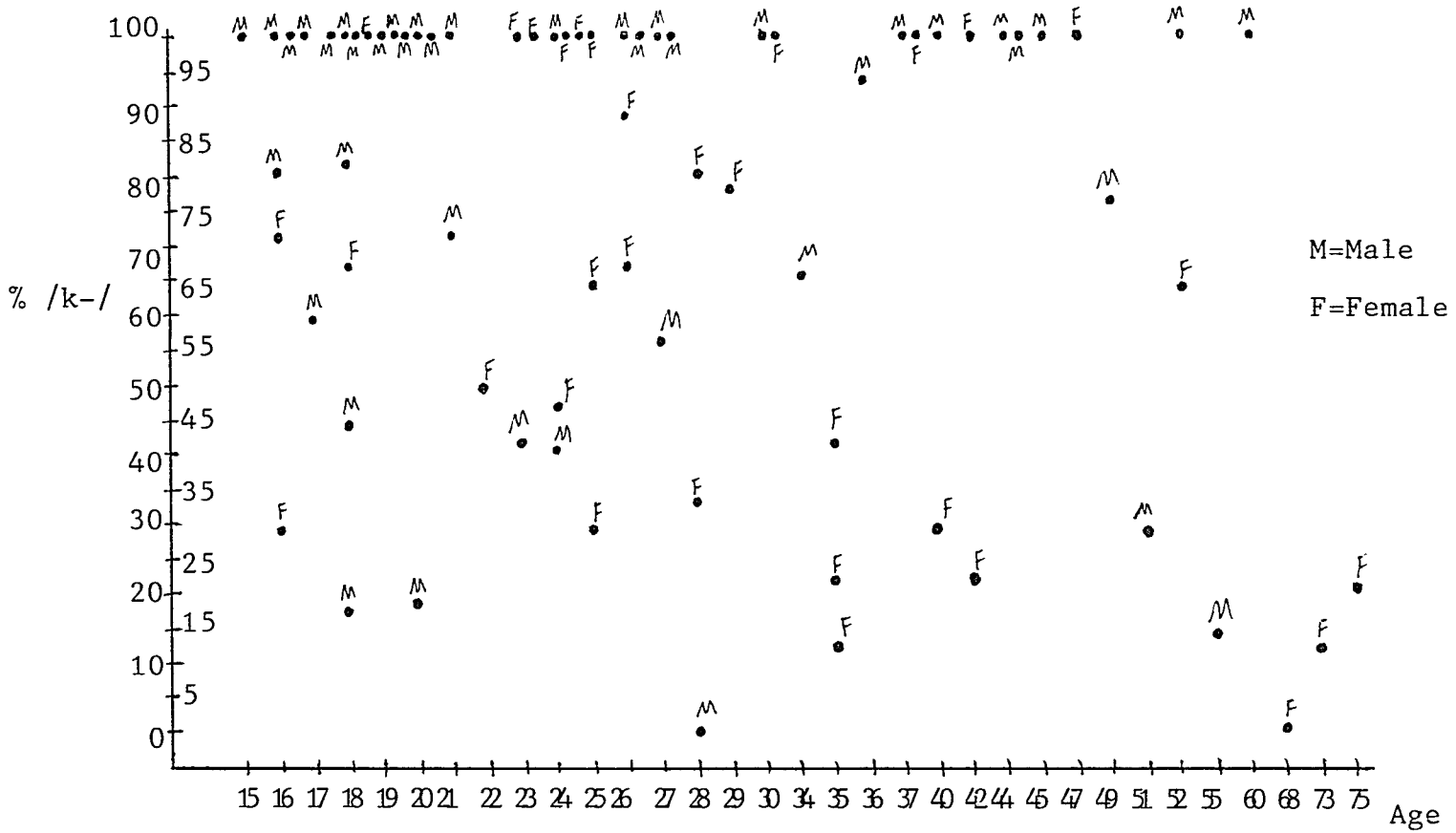


Figure 16. % /k-/ for reading the Word Lists for the sample population by age and sex.

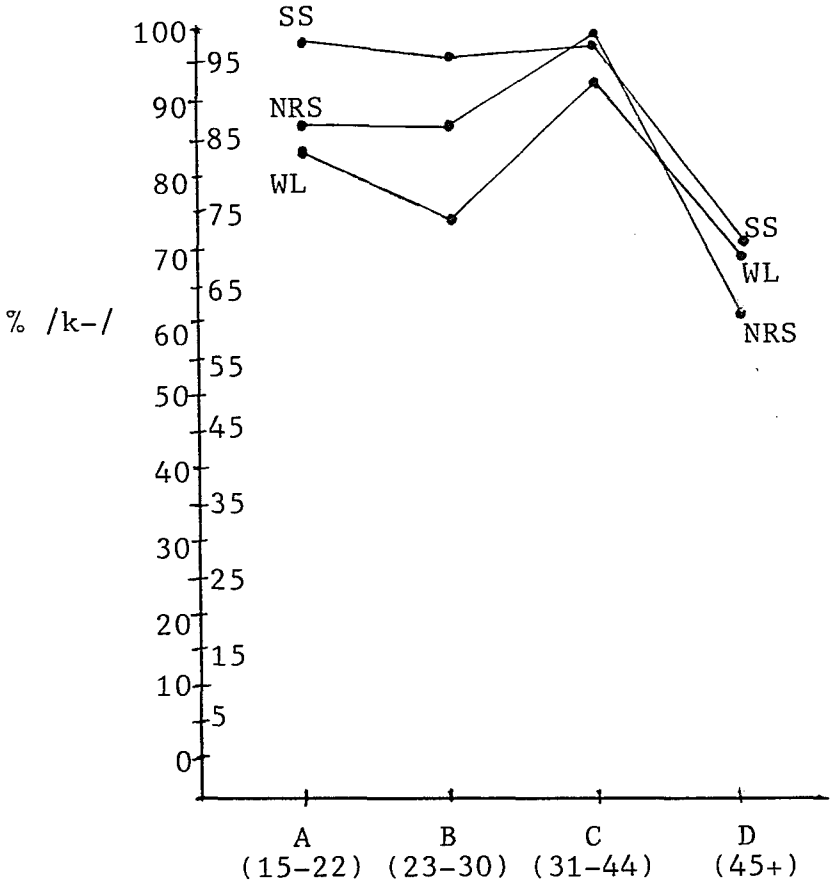


Figure 17.1. Males

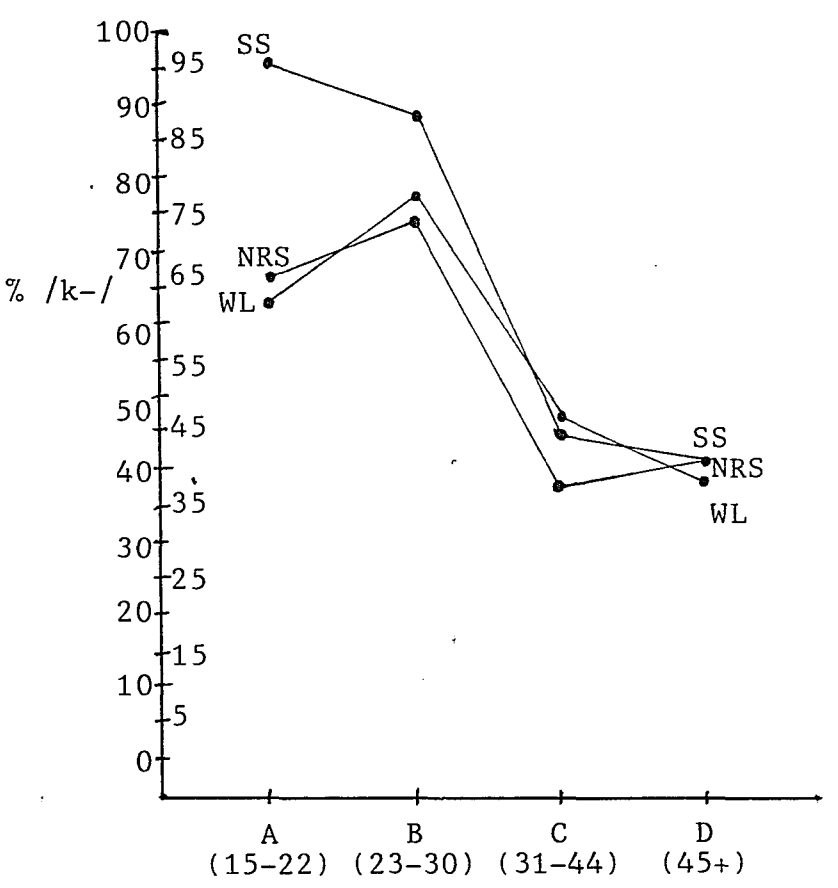


Figure 17.2. Females

Figures 17.1 & 17.2. % /k-/ for male and female subjects in four age groups and three speech contexts. (Age groups: A, 15 -22 years of age; B, 23-30 years; C, 31-44 years; D, 45+ years. SS=Spontaneous Speech; NRS=Nursery Rhyme and Story; WL=Word Lists).

--that is, the highest % /k-/ is for the subjects' Spontaneous Speech, and the lowest % /k-/ for the subjects' Word Lists style. Three out of the eight age groups are exceptional, however. The average score for the subjects in the male Age Group C for reading the Nursery Rhyme and Story was 100% /k-/ which slightly exceeds the 98% /k-/ for this group's Spontaneous Speech. The female Age Group B has a 75% /k-/-score for the Nursery Rhyme and Story which is a bit lower than the 77% /k-/-score for the Word Lists. The same situation obtains for the female Age Group C for whom the 33% /k-/-score for the Nursery Rhyme and Story is lower than the 41% /k-/-score for the Word Lists. For female Age Group D the 42% /k-/-scores for Spontaneous Speech and Nursery Rhyme and Story are lower than the 49% /k-/ for the Word Lists.

Let us now just consider that group of subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview and compare the % /k-/ of men and women in the four age groups and three speech contexts. Table 14 presents the revised values of % /k-/ for this group of males and females, and Figures 18.1 and 18.2 present these % /k-/-scores in graph form. Comparing Figures 18.1 and 18.2 with Figures 17.1 and 17.2 reveals the following characteristics of the men and women with the kw-/k- variation and the differences between them and the entire group of subjects. To facilitate comparison between the group of men and women who have kw-/k- variation with the entire group of subjects

Table 14. % /k-/ in three speech contexts and four age groups of male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview.

Males															
A (15-22)				B (23-30)				C (31-44)				D (45+)			
Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL	Subj. No.	SS	NRS	WL
4	100	94	71	22	93	53	41	32	95	100	67	39	100	67	76
6	100	61	59	24	100	24	40	33	95	100	94	40	21	0	28
9	94	61	44	29	98	100	56					42	6	6	13
10	100	100	82	30	82	88	0								
11	80	47	17												
18	92	6	18												
20	96	67	71												
7 S	662	436	362	4 S	373	265	137	2 S	190	200	161	3 S	127	73	117
% /k-/	95%	62%	52%		93%	66%	34%		95%	100%			43%	24%	39%
Females															
44	100	81	71	53	98	75	47	64	43	6	41	74	80	50	64
45	96	19	29	54	100	59	100	65	16	0	12	76	0	13	12
48	100	82	67	55	95	38	64	66	51	17	21	77	11	6	20
49	85	53	50	57	64	6	29	68	10	0	29				
				58	100	100	67	69	42	44	22				
				59	100	100	89								
				60	11	0	33								
				61	100	94	80								
				62	100	88	73								
				63	81	94	100								
4 S	381	235	217	10 S	849	654	682	5 S	162	67	125	3 S	91	69	96
% /k-/	95%	59%	54%	% /k-/	85%	65%	68%	% /k-/	32%	13%	25%	% /k-/	30%	23%	32%

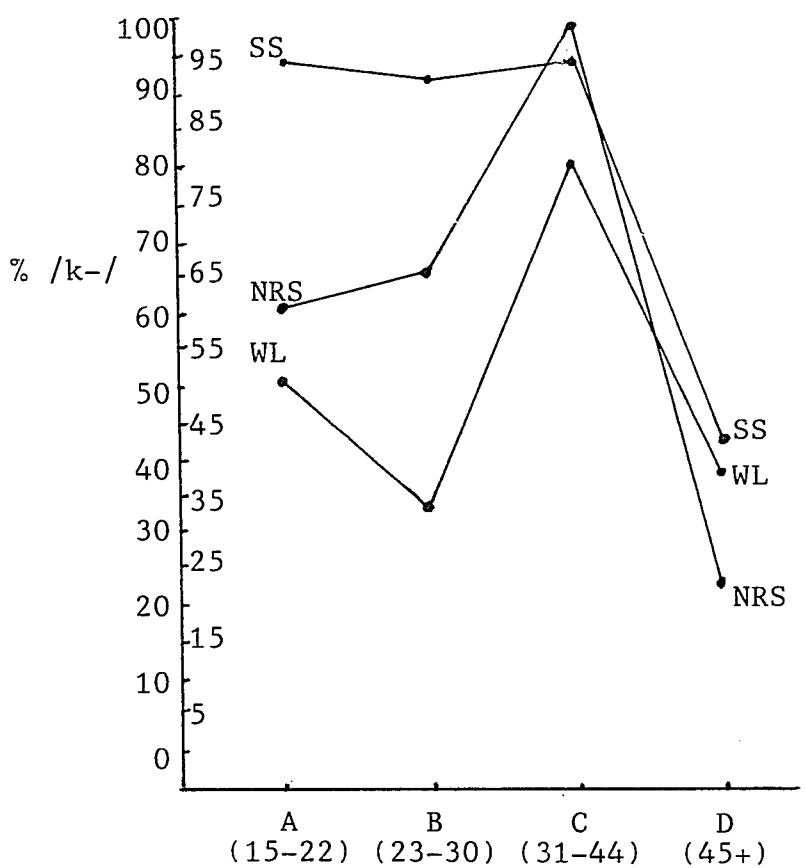


Figure 18.1. Males

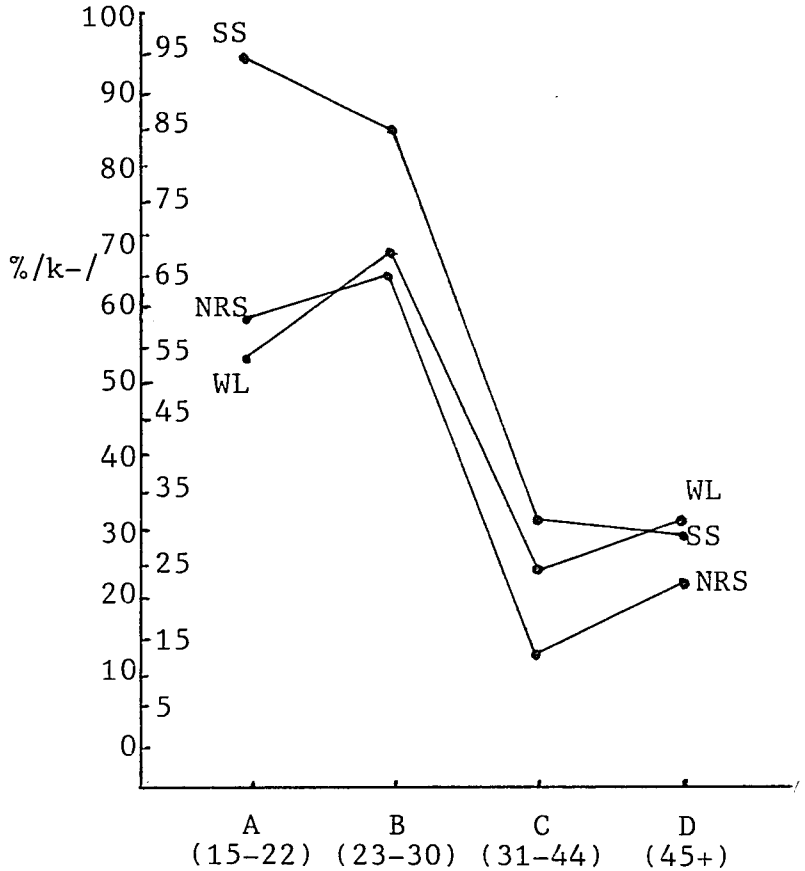


Figure 18.2. Females

Figures 18.1 & 18.2. % /k-/ for male and female subjects who have variation between SC /kwo(C)/ and /ko(C)/ in the interview for four age groups and three speech contexts.

which includes those subjects with variation, we will refer to the first group as Men or Women with Variation and the second group as All Men or All Women.

Comparing % /k-/-scores for the three speech contexts for Men and Women with Variation in the four age groups with All Men and All Women shows that % /k-/ declines for all speech contexts and all age groups of Men and Women with Variation. Age Group A Men with Variation have 95% /k-/ in Spontaneous Speech, 62% in the Nursery Rhyme and Story, and 52% in the Word Lists. All Men in Age Group A, on the other hand, have 98%, 87%, and 83%, respectively, for these three contexts. The Men with Variation had a decline of only 3% /k-/ for Spontaneous Speech. The greatest decline in % /k-/ for the Men With Variation occurred for the Word Lists: All Men had 83% /k-/ in the Word Lists and the Men with Variation 52%, a decline of 31%. All Men in Age Group A have a drop of 15% between Spontaneous Speech and the Word Lists. Men with Variation in Age Group A have a much steeper decline of 43%.

In comparing Age Group B Men with Variation with All Men, we see that the first group's % /k-/-scores for the three speech contexts are 93%, 87%, and 74%. The greatest difference between the two groups is for the Word Lists: Men with Variation use 40% less /k-/ than All Men. Furthermore, Men with Variation in Age Group B have a decline of 59% /k-/ from Spontaneous Speech to Word Lists, compared to All Men's decline of 23%.

Men with Variation in Age Group C have an average of 95% /k-/ in Spontaneous Speech, 100% in the Nursery Rhyme and Story, and 81% in the Word Lists. They do not show much difference in their use of /k-/ with All Men in Age Group C who have 98%, 100%, and 94% /k-/-scores for the three speech contexts. There were two men with variation and four men with a complete change to /k-/ in Age Group C. There was only one subject who showed significant variation from one speech context to another: Subject #32 had 95% /k-/ in Spontaneous Speech and 67% /k-/ in the Word Lists.

Men with Variation in Age Group D have much lower % /k-/ than All Men of this age group. The two groups' scores were as follows: Spontaneous Speech, 43% and 71%; Nursery Rhyme and Story, 24% and 62%; and Word Lists, 39% and 70%. The Men with Variation had a decline of 4% /k-/ from Spontaneous Speech to Word Lists, All Men had a decline of 1%.

When we compare Figures 18.2 and 17.2 for females, we notice that there is also an overall decline in % /k-/ for Women with Variation in comparison to All Women. However, the declines in % /k-/ between the two groups are not as sharp as those for most of the male age groups. Women with variation in Age Group A have an average of 95% /k-/ in Spontaneous Speech, 59% /k-/ in the Nursery Rhyme and Story, and 54% /k-/ in the Word Lists. All Women have 96%, 67%, and 63% for the three speech contexts. The

Women with Variation have a 41% decline in % /k-/ between Spontaneous Speech and Word Lists, while All Women have a decline of 33%. This decline for the Women with Variation in Age Group A is quite close to the 43% decline for Men with Variation in Age Group A.

Women with Variation in Age Group B have 85% /k-/ in Spontaneous Speech, 65% in the Nursery Rhyme and Story, and 68% in the Word Lists. All Women in Age Group B had 89%, 75%, and 77% for the three speech contexts, and the differences between the two groups' % /k-/-scores for the respective speech contexts which range from 4% to 10% are not large. Women with Variation showed a decline of 17% /k-/ between Spontaneous Speech and Word Lists, while All Women had a 12% decline.

Women with Variation in Age Group C have % /k-/-scores that are lower than those of All Women in Age Group C by amounts that range from 13% to 25%. The first group's % /k-/ for the three speech contexts are 32%, 13%, and 25%; the scores for All Women are 45%, 38%, and 46%. Women with Variation had a 7% decline in /k-/ for Spontaneous Speech to Word Lists, and All Women had a 1% increase.

Women with Variation in Age Group D had 30% /k-/ in Spontaneous Speech, 23% /k-/ in the Nursery Rhyme and Story, and 32% in the Word Lists. All Women in Age Group D had 42%, 42%, and 39% for the three speech contexts. The differences between the two groups range from 19% for the Nursery Rhyme and Story to 7% in the Word Lists. Women

with Variation showed a 2% increase in /k-/ between Spontaneous Speech and the Word Lists, All Women had a 3% decrease in /k-/.

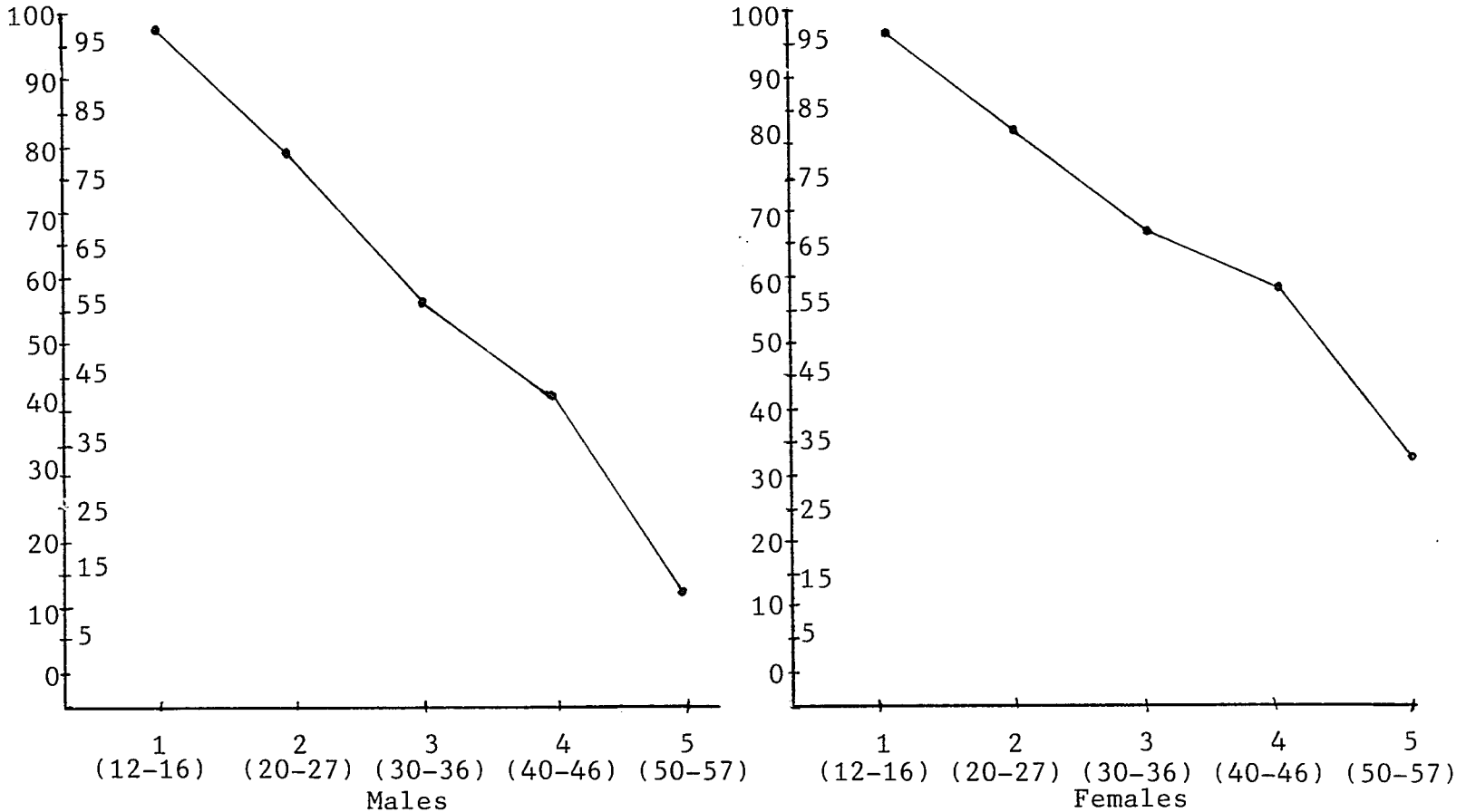
4.4.1 Comparison of This Study's Findings with Those of Yeung's Study

Helen Yeung's 1980 M.A. Dissertation, Some Aspects of Phonological Variations in the Cantonese Spoken in Hong Kong, investigated the delabialization of the labialized velar. Her study was based on a sample of 50 male and female subjects categorized into five age groups. Rather than conduct tape-recorded interviews with her subjects, she had them listen to a tape-recorded short story and then recorded the subjects repeating the story section by section. She told her subjects she was studying people's ability to remember things to distract them from her real purpose of studying their pronunciation. The short story contained a number of words belonging to several phonological variable categories one of which was the kw-/k- variable. The % /k-/ scores for her age groups were as follows (M= Male and F=Female, and numbers in parentheses are years of age):

1M(12-16)	2M(20-27)	3M(30-36)	4M(40-46)	5M(50-57)
97%	78%	56%	42%	13%
1F(12-16)	2F(20-27)	3F(30-36)	4F(40-46)	5F(50-57)
97%	83%	67%	59%	33%

Figures 19.1 and 19.2 below display these % figures in two graphs. We see that for both males and females there is a progressive decrease in % /k-/ as age increases. The male and female subjects in the youngest age groups 1M and 1F (12-16 years of age), have identical % /k-/-scores of 97%. Females in the four age groups 2 to 5 have higher % /k-/-scores than males--the % /k-/-scores for females in these groups range from 83% for the 2F females (20-27 years of age) to 33% for the 5F females (50-57 years of age). The % /k-/-scores for females exceed those of the males from a low of 5% for the 2F females to a high of 20% for the 5F females.

Comparing my study's % /k-/-scores for Spontaneous Speech (that portion of the interview most comparable to Yeung's repetition exercise) with the % /k-/-scores for Yeung's subjects indicates the two studies do not share much agreement on the use of /k-/ by the Hong Kong speech community. Both studies do agree that young people use a high % /k-/: Comparing scores for subjects aged 15 and 16 in my study with Yeung's scores shows that in my study males used an average of 100% /k-/ and females 98% /k-/; Yeung's males and females both used 97% /k-/. The two major points of disagreement between the studies arise from the findings on the use of /k-/ attributed to males aged 20 and over: My study found that male subjects used a higher % /k-/ than Yeung's male subjects, and that male subjects used more /k-/ than females. However, Yeung



Figures 19.1 & 19.2. % /k-/ in Helen Yeung's sample of 50 subjects in five age groups who listened to a Cantonese story and then repeated it section by section. (The SC /kwo(C)/-class morphemes in the story were 國 which occurred 12 times and 過 which occurred once).

found the reverse situation to be true. The % /k-/-scores from the two studies are contrasted below (the age groups in my study have been reconstituted to facilitate comparability):

Bauer's Age Groups	% /k-/	Yeung's Age Groups	% k-/
Males			
B (20-28)	97%	2M (20-27)	78%
C (30-37)	93%	3M (30-36)	56%
D (40-45)	100%	4M (40-46)	42%
E (49-60)	65%	5M (50-57)	13%
Females			
B (20-28)	89%	2F (20-27)	83%
C (30-37)	58%	3F (30-36)	67%
D (40-47)	53%	4F (40-46)	59%
E (52)	80%	5F (50-57)	33%

The % /k-/ for males in my study ranges from a high of 100% for males aged 40 to 45 to a low of 65% for males aged 49 to 60. The % /k-/ scores for Yeung's male subjects, on the other hand, range from a high of 78% for males aged 20 to 27 to a low of 13% for males aged 50 to 57.

The second point of difference in the two studies is the higher % /k-/-scores for males than females found in my study. Males aged 20 to 45 have high % /k-/-scores, but males over age 45 show a decrease in the use of /k-/. When we compare these three age groups of males with females in my study, we find that females use much less /k-/: males 20 to 28 have 97% /k-/, females 89%; males 30 to 37 have 93% /k-/, females 58%; males 40 to 45 have 100% /k-/ (and there were four subjects in this group!), females aged 40 to

47 have 53% /k-/. Yeung's study, however, found the % /k-/-scores of females exceeding those of males: females 20 to 27, 83% and males 78%; females 30 to 36, 67% and males 56%; females 40 to 46, 59% and males 42%; and females 50 to 57, 33% and males 13%. These differences in scores between the two studies are quite large, and at this time I have no plausible explanation to account for why these differences exist. Even taking into account the fact that Yeung's study included only two lexical items in the SC /kwo(C)/-class--her story contained 國 12 times and 過 once, this cannot explain the differences. As the previous section has shown, 國 is a high frequency item with the highest rate of % change to /k-/ for males of all lexical items in the SC /kwo(C)/-class which were investigated.

A point of relative agreement between the two studies is on the use of /k-/ by females. There are three female groups out of the four listed above which are comparable in the two studies, females aged 20 to 27, 30 to 36, and 40 to 46 (since there is only one female from my study whose age places her within the range of Yeung's 5F (50-57) age group, we cannot reliably compare these two groups). For these three groups the differences in % /k-/-scores between the two studies are not large and range from 9% to 6%. My study shows females aged 20 to 28 using 89% /k-/ in their Spontaneous Speech; Yeung's female subjects used 6% less at 83% /k-/ in their repetition of the story. Yeung's female subjects aged 30 to 36 used 67% /k-/, the

equivalent group in my study used 9% less /k-/ at 58%. Yeung's female subjects aged 40 to 46 used 59% /k-/ while my study's comparable group of females used 53%. Both studies agree that as the age of females increases their use of /k-/ declines.

4.4.2 Age and Educational Level as Factors Influencing /k-/

Let us now consider age and educational level of the subjects as factors influencing their use of the kw-/k- variable. Tables 15.1 and 15.2 present the % /k-/-scores for subjects categorized into four age groups and three educational levels. Figure 20 represents these %-scores as a graph. Based on this graph, the following observations can be made: First, eight groups have very high % /k-/ in their Spontaneous Speech. The II-C-M group, males aged 31 to 44 with 11 to 13 years of schooling, show the least variation in the use of /k-/ for the three speech contexts: Their scores are 100% for Spontaneous Speech, 100% for the Nursery Rhyme and Story, and 98% for the Word Lists. The III-A-M group, males aged 15 to 22 with 0 to 10 years of schooling, have 100% /k-/ for their Spontaneous Speech but show a decline to 94% when they read the Nursery Rhyme and Story, and 93% when they read the Word Lists. The I-C-M group, males aged 31 to 44 with the highest educational level of 14 to 16 years of schooling, have an average of 98% /k-/ in their Spontaneous Speech, 100% for the Nursery Rhyme and Story, but 84% for the Word Lists.

Table 15.1. % /k-/ for males in three speech contexts by subject identification number, age group, and educational level. (SN=Subject Identification Number; SS=Spontaneous Speech; NRS=Nursery Rhyme and Story; WL=Word Lists; EL=Educational Level, I=14-16 years of schooling, II=11-13 years, and III=0-10 years)

EL	AGE GROUPS															
	A (15-22)				B (23-30)				C (31-44)				D (45+)			
	SN	SS	NRS	WL	SN	SS	NRS	WL	SN	SS	NRS	WL	SN	SS	NRS	WL
I					23	100	100	100	32	95	100	67				
					24	100	24	40	35	100	100	100				
					25	100	100	100								
					28	100	100	100								
					29	98	100	56								
					30	82	88	0								
					6 S	580	512	396	2 S	195	200	167				
					% k-	97%	85%	66%	% k-	98%	100%	84%				
II	4	100	94	71					33	100	100	94	39	100	67	76
	10	100	100	82					34	100	100	100	40	21	0	28
	11	80	47	17					37	100	100	100				
	17	100	100	100												
	18	92	6	18												
	20	96	67	71												
	6 S	568	414	359					3 S	300	300	294	2 S	121	67	104
	% k-	95%	69%	60%					% k-	100%	100%	98%	% k-	61%	34%	52%
III	1	100	100	100	22	93	53	41	36	100	100	100	38	100	100	100
	2	100	100	100	26	100	100	100					41	100	100	100
	3	100	100	100	27	100	100	100					42	6	6	13
	5	100	100	100	31	100	100	100					43	100	100	100
	6	100	61	59												
	7	100	100	100												
	8	100	100	100												
	9	94	61	44												
	12	100	100	100												
	13	100	100	100												
	14	100	100	100												
	15	100	100	100												
	16	100	100	100												
	19	100	100	100												
	14 S	1394	1322	1303	4 S	393	353	341	1 S	100	100	100	4 S	306	306	313
	% k-	100%	94%	93%	% k-	98%	88%	85%	% k-	100%	100%	100%	% k-	76%	76%	78%

Table 15.2. % /k-/ for females in three speech contexts by subject identification number, age group, and educational level. (SN=Subject Identification Number; SS=Spontaneous Speech; NRS=Nursery Rhyme and Story; WL=Word Lists; EL=Educational Level, I=14-16 years of schooling, II=11-13 years, and III=1-10 years)

EL	AGE GROUPS															
	A (15-22)				B (23-30)				C (31-44)				D (45+)			
	SN	SS	NRS	WL	SN	SS	NRS	WL	SN	SS	NRS	WL	SN	SS	NRS	WL
I	49	85	53	50	51	100	100	100	66	51	17	21	75	0	--	0
					53	98	75	47								
					57	64	6	29								
					58	100	100	67								
					59	100	100	89								
					60	11	0	33								
					61	100	94	80								
	1 S	85	53	50	7 S	573	475	445	1 S	51	17	21	1 S	0	--	0
	% k-	85%	53%	50%	% k-	82%	68%	64%	% k-	51%	17%	21%	% k-	0%		0%
II	44	100	81	71	50	100	100	100	65	16	0	12				
	47	100	100	100	52	100	100	100	68	10	0	29				
					54	100	59	100								
					55	95	38	64								
					56	100	100	100								
					62	100	88	73								
	2 S	200	181	171	6 S	595	485	537	2 S	26	0	41				
	% k-	100%	91%	86%	% k-	99%	81%	90%	% k-	13%	0%	21%				
III	45	96	19	29	63	81	94	100	64	43	6	41	72	61	--	--
	48	100	82	67					67	100	100	100	73	100	100	100
									69	42	44	22	74	80	50	64
									70	100	100	100	76	0	13	12
									71	2	--	--	77	11	6	20
	2 S	196	101	96	1 S	81	94	100	5 S	28	250	263	5 S	252	169	196
	% k-	98%	51%	48%	% k-	81%	94%	100%	% k-	57%	63%*	66%*	% k-	50%	42%*	49%*

*% /k-/ based on 4 Subjects

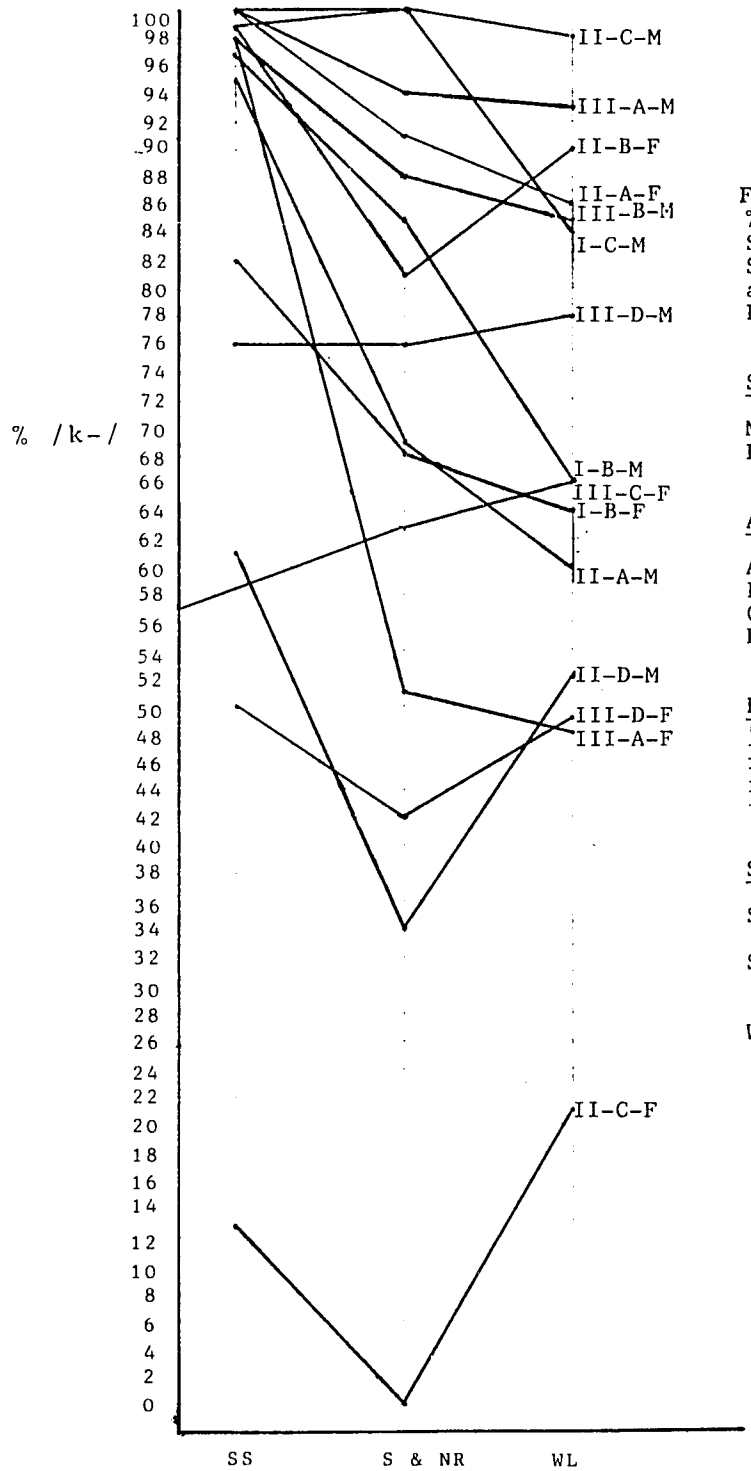


Figure 20.
% /k-/ for Three Speech Contexts by Sex, Age Group and Educational Level

Sex

M = Male
F = Female

Age Groups

A = 15-22 years old
B = 23-30 years old
C = 31-44 years old
D = 45+ years old

Educational Levels (years of schooling)
I = 14-16 years
II = 11-13 years
III = 0-10 years

Speech Contexts

SS = Spontaneous Speech
S & NR = Story and Nursery Rhyme
WL = Word Lists

The II-B-F group, females aged 23 to 30 with 11 to 13 years of education, have 99% /k-/ in their Spontaneous Speech, 81% in their Nursery Rhyme and Story, but 90% for the Word Lists. Despite their relatively high educational level, this group of female subjects has the third highest % /k-/-score in the most formal speech context. The two female students aged 16 and 18 with 11 years of schooling in the II-A-F group have 100% /k-/ in their Spontaneous Speech, 91% in the Nursery Rhyme and Story, and 86% in the Word Lists. The III-B-M group of males between the ages of 23 and 30 with 0 to 10 years of schooling have 98% /k-/ in their Spontaneous Speech, 88% in their Nursery Rhyme and Story, and 85% in the Word Lists. Three out of the four subjects in this group, however, have 100% /k-/ in all three speech contexts, that is, a complete change to /k-/. The relatively lower scores of the fourth subject therefore lowered this group's average. There were only two subjects in the I-C-M group, men aged 31 to 44 with 14 to 16 years of schooling; they had an average of 98% /k-/ in their Spontaneous Speech, 100% /k-/ in the Nursery Rhyme and Story, and 84% in the Word Lists. Although their average Spontaneous Speech score was quite high at 97%, the I-B-M group, males aged 23 to30 with 14 to 16 years of schooling, have an average of 85% /k-/ in the Nursery Rhyme and Story, but 66% /k-/ in the Word Lists. The equivalent I-B-F group of female subjects have average of % /k-/-scores lower than their male counterparts. The females have 82% /k-/ in

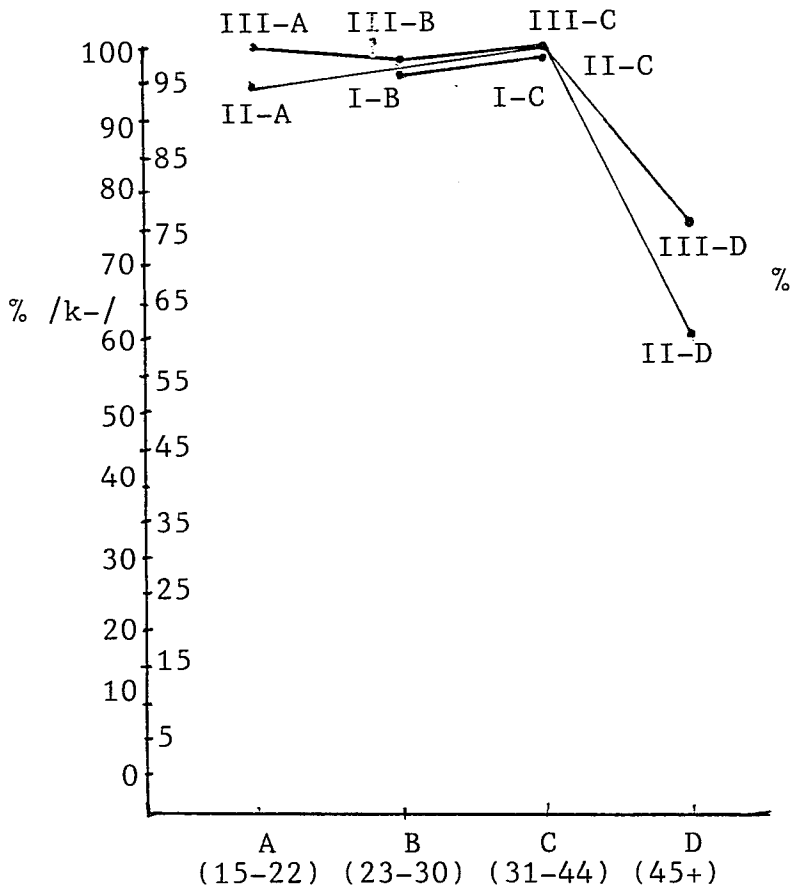
their Spontaneous Speech which is 15% less than the male group's average and 68% /k-/ in the Nursery Rhyme and Story which is 17% less than the men. However, both groups' Word Lists scores are quite close: the females used 64% /k-/ in the Word Lists and the males used 66%. The two females in the III-A-F group aged 16 and 18 and whose educational levels are 10 and 9 years, respectively, have 98% /k-/ in their Spontaneous Speech, but a low of 51% /k-/ in the Nursery Rhyme and Story, and an even lower 48% /k-/ in the Word Lists. The II-A-M group of males aged 15 to 22 with 11 to 13 years of schooling have an average of 95% /k-/ for their Spontaneous Speech, 67% /k-/ for their Nursery Rhyme and Story, and 60% /k-/ for the Word Lists. Five of the six subjects in this group are students which may account for their relatively lower reading scores. The III-D-M group of males who are 45 years of age or over with 10 years or less of schooling have 76% /k-/ in their Spontaneous Speech, 76% /k-/ in the Nursery Rhyme and Story, and 78% /k-/ in the Word Lists. Three of the four men in this group, however, had a complete change to /k-/, and one subject had a very low 6% /k-/ for both his Spontaneous Speech and Nursery Rhyme and Story, and 13% /k-/ in the Word Lists. The III-C-F group of females aged 31 to 44 with ten years or ess of schooling have an average of 57% /k-/ in their Spontaneous Speech, 63% /k-/ in the Nursery Rhyme and Story, and 66% /k-/ in the Word Lists. There are two male subjects in the II-D-M group who are aged 49 and 51 and who have 11 years of schooling; their average % /k-/

for Spontaneous Speech was 63%, for the Nursery Rhyme and Story they had a rather low 34% /k-/, but for the Word Lists their score climbed back up to 52%. The III-D-F group of females whose ages ranged from 47 to 75 and whose years of schooling ranged from 0 to 9 have 50% /k-/ in their Spontaneous Speech, 42% in the Nursery Rhyme and Story, and 49% in the Word Lists. The lowest % /k-/-scores belong to the II-C-F group of two females aged 35 and 40 who have 11 and 12 years of schooling, respectively. They have 13% /k-/ in their Spontaneous Speech, 0% /k-/ in their Nursery Rhyme and Story, and 21% in the Word Lists.

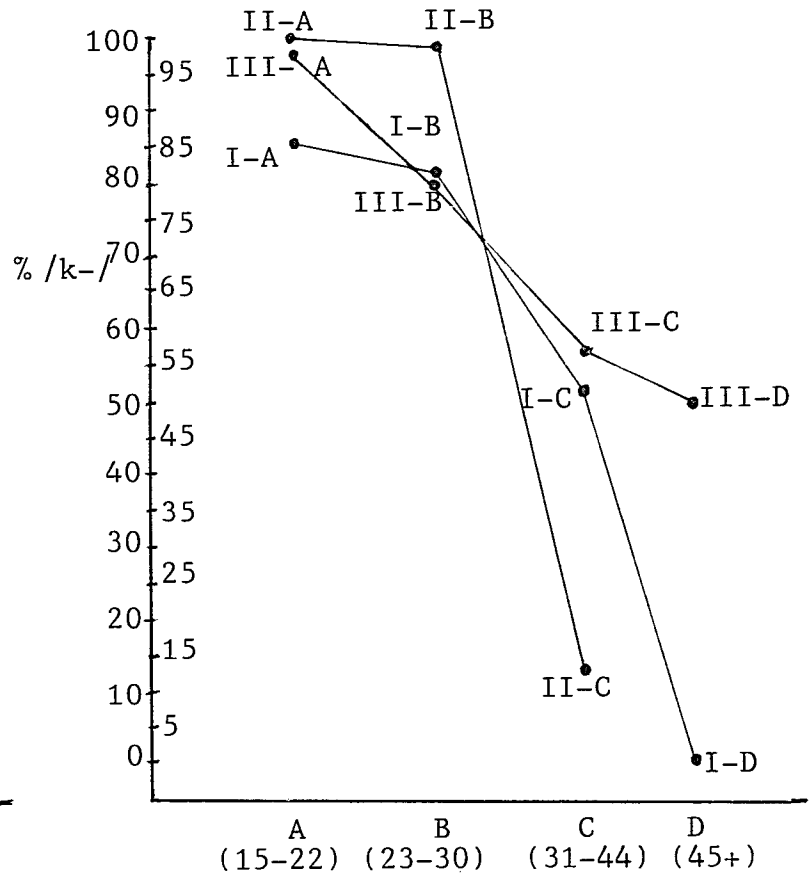
We notice that several groups who show a decline in % /k-/ between Spontaneous Speech and the Nursery Rhyme and Story have % /k-/-scores which show an increase between the Nursery Rhyme and Story and the Word Lists. The reason for this was because the Word Lists included the three very low frequency SC /kwo(C)/-class morphemes previously mentioned in the section on the lexical dimension of delabialization, viz., 郭 SC /kwōk/, 狂 SC /k'wòŋ/, and 礦 SC /k'wōŋ/. Most subjects--even those who have quite low % /k-/-scores in Spontaneous Speech and the Nursery Rhyme and Story, do not pronounce these words with the labialized velar initial which thus increases their /k-/-scores. For example, Subject #57, a young woman aged 25 who majored in Chinese language at Chinese University of Hong Kong and teaches Chinese in middle school, pronounced all these words with the delaibalized velar initial, and

these were the only words so mispronounced in her reading of the Word Lists.

Observing Figure 20, we can make the following generalizations about the correlation of age and educational level with the use of the /k-/ variable. First, age has a strong correlation with the use of /k-/. Younger subjects typically have higher % /k-/-scores in their Spontaneous Speech than older subjects. There are nine groups whose Spontaneous Speech scores for /k-/ average 95% or higher: II-C-M, 100%; III-A-M, 100%; II-A-F, 100%; II-B-F, 99%; III-B-M, 98%; I-C-M, 98%; III-A-F, 98%; I-B-M, 97%; II-A-M, 95%. Seven of the groups belong to A and B age groups for subjects aged 15 to 30. There are only two groups belonging to the second oldest Age Group C, 31 to 44 years of age. There are six groups whose % /k-/-scores in Spontaneous Speech are 82% or less: I-B-F, 82%; III-D-M, 76%; III-C-F, 57%; II-D-M, 61%; III-D-F, 50%; II-C-F, 13%. Three of these six groups belong to the oldest Age Group D, aged 45 and over, and two groups belong to the second oldest Age Group C, 31 to 44. Figures 21.1 and 21.2 depict in two graphs this correlation between age and the use of the variable. The two figures show the % /k-/ in Spontaneous Speech for males and females in the four age groups. Educational level has been held constant in order to focus on the age factor. We see that for males the use of /k-/ separates Age Groups A, B, and C from D. That is, A, B, and C cluster together in their use of high % /k-/, while the



21.1 Males



21.2 Females

Figures 21.1 & 21.2. % /k-/ in Spontaneous Speech distributed across age groups with educational level held constant.

two D groups have relatively lower % /k-/. For the female age groups, however, the use of /k-/ declines across all age groups as age increases. The most dramatic differences in % /k-/ from one age group to another are for the I-A, I-B, I-C, I-D-curve and the II-A, II-B, II-C-curve. Typically, A and B groups are closer together in their use of % /k-/ than are C and D. For example, I-A and I-B groups have similarly high % /k-/ in their Spontaneous Speech, 85% and 82%, respectively, but Age Groups I-C and I-D have much lower % /k-/, 51% and 0%, respectively. II-A and II-B are quite close together at 100% /k-/ and 99% /k-/, respectively, while II-C has 13% /k-/. There is a large difference in % /k-/ between III-A (98%) and III-B (81%) but not a very large difference between III-C (57%) and III-D (50%). Such differences seem to support our conclusion that as age increases the use of /k-/ declines. However, it must be pointed out that Age Groups I-A, I-C, I-D, and III-A contain only <u>one</u> subject each and Age Groups II-A, II-C, and III-A contain only two subjects each. Although this evidence attractively supports the broad outlines of the conclusion, only the two contiguous Age Groups III-C and III-D which contain five subjects each provide encouragingly reliable support for the inverse relation between age and the use of /k-/. Consequently, until more data based on additional subjects are available to sufficiently represent all the cells of the matrix, our conclusion remains subject to a more precise specification.

Educational level appears to be a factor influencing % /k-/ in the Word Lists for younger subjects in the A and B groups as well as older subjects in the C and D groups. When we compare two socially equivalent groups (e.g., both are male subjects of the same age group) which both usually have similar % /k-/-scores in Spontaneous Speech and which differ only by the factor of educational level, the group with the higher educational level typically has the steeper decline in % /k-/ between Spontaneous Speech and the Word Lists. For example, the II-A-M and I-B-M groups have sharp declines in % /k-/ for Word Lists of 35% and 31%, respectively. We can establish that education is the likely cause for these decreases by comparing the II-A-M group of subjects with the III-A-M group of subjects and the I-B-M group with the III-B-M group. Although the male subjects with the higher educational levels use % /k-/ in their Spontaneous Speech which is almost as high as their less-educated counterparts, 97% for I-B-M versus 98% for III-B-M and 95% for II-A-M versus 100% for III-A-M, they recognize the standard form of the variable and are able to use it more appropriately in the formal Word List context than the other less-educated subjects whose average declines in % /k-/ of 7% for the III-A-M group and 13% for the III-B-M group were less dramatic. A similar situation is observed among young females, although the I-B-F group uses a lower % /k-/ in Spontaneous Speech than the II-B-F group--82% compared to 99%, respectively. The better educated I-B-F group declines to 64%

/k-/ for the Word Lists, a drop of 18% which is twice the decline from 99% to 90% for the II-B-F group. The III-A-F group shows the sharpest decline of 50%--from 98% in Spontaneous Speech to 48% in Word Lists. This radical correction shows that although these young women belong to the lowest educational level of their age group, they are, nevertheless, the most sensitive of any of the subjects toward the variable. Even though the II-A-F group of subjects has a higher educational level than the III-A-F group, the latter has the sharper decline in % /k-/, 50% versus 14%, and to a much lower level, 48% versus 86%. However, there are only two subjects in each group which precludes making any general conclusions about the linguistic behavior of other females with similar social backgrounds.

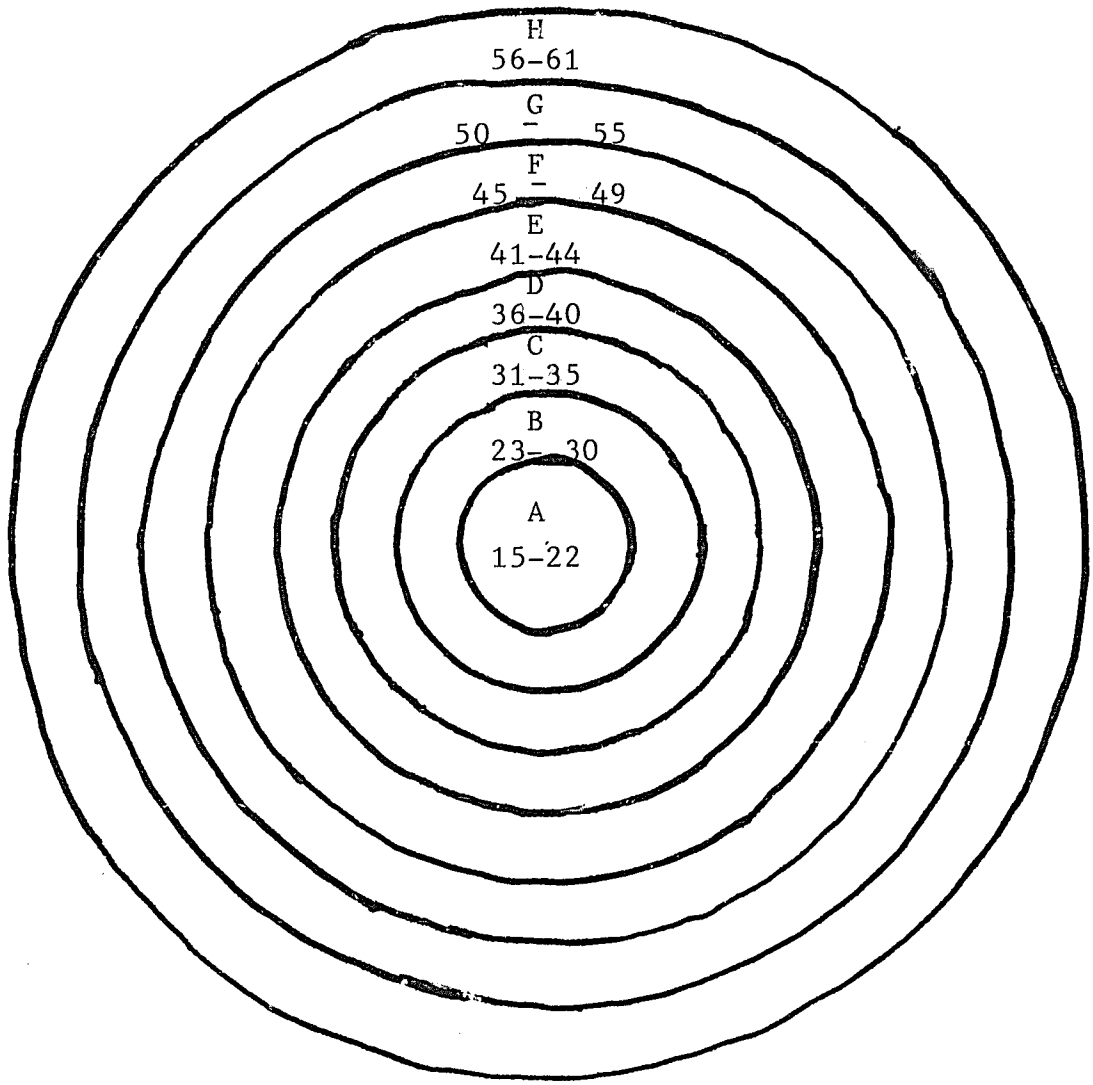
Let us now consider Age Groups C and D. With these older age groups we also find a correlation between higher educational level and lower % /k-/ in the Word Lists. We have three pairs of groups which can be compared. the I-C-M and II-C-M groups both have high % /k-/ in Spontaneous Speech, 98% and 100%. However, the I-C-M group with the higher educational level used 14% less /k-/ when reading the Word Lists at 84% than the II-C-M group at 98%, and the I-C-M group's decline in % /k-/ for Word Lists was by 14%, somewhat greater than the 2% decline for the II-C-M group. The II-C-F group of females used only 13% /k-/ in their Spontaneous Speech against 57% for the III-C-F group. When the first group read the Word Lists, their % /k-/

increased by 8% to 21%, and this increase occurred for the reason previously mentioned, namely, the inclusion in the Word Lists of very low frequency words which most subjects pronounced with the delabialized velar initial. The III-C-F group had an increase of 9% from 57% /k-/ in Spontaneous Speech to 66% /k-/ when they read the Word Lists, a score much higher than the II-C-F group's 21% /k-/ for Word Lists. There were only two subjects in the II-C-F group, so I am reluctant to generalize their extremely low use of /k-/ to other women of the same educational and age characteristics. Finally, the II-D-M group of males has both lower % /k-/ in Spontaneous Speech than the III-D-M group, 61% compared to 76%, and lower % /k-/ in Word Lists, 52% to 78%, as well as a steeper decline in % /k-/, 9% as opposed to a 2% increase for the III-D-M males. Both the C and D groups also support our conclusion that there is a positive correlation between higher educational level and lower % /k-/ in the formal speech context of Word Lists. However, just as with our analysis of the correlation between age and the use of /k-/, our conclusion on the correlation between educational level and the use of /k-/ must also remain tentative because of the number of cells in the matrix which are underrepresented by subjects. I hope to return to Hong Kong in the future to conduct more interview with more subjects and thereby increase the database on which more specific conclusions can be drawn.

In future research the subjects to be interviewed

should be between the ages of 40 and 65. I believe this age span is crucial for determining with which age group the delabialization change originated. The four age groups in this study were more or less arbitrarily chosen, and it is apparent from the preceding discussion that the age range for Age Group D was too broad for the purpose of determining with any precision with which group the change to /k-/ originated since it encompassed a wide range of patterns in the use of /k-/ by subjects. We found that women in their late 60's and mid 70's had almost no incidence of /k-/. There was one 60 year-old male subject who had a complete change to /k-/ which may have been a product of his low educational level and his moving to the country-side in Guangdong during World War II. We also saw that two male subjects in their 50's had low values of /k-/. However, a third male subject aged 52 had a complete change to /k-/ which may possibly be reated to the fact that he was not born in Hong Kong but settled there at age 10. One 52 year-old woman had 80% /k-/ in her Spontaneous Speech. Among the five females in their 40's, two had a complete change to /k-/ and three had variation. Five male subjects between the ages of 40 and 49 all had a complete change to /k-/ in their Spontaneous Speech. In this study the distribution of /k-/ for the sample's subjects in Age Group D indicates that more subjects aged 40 to 65 from several educational levels are needed in order to clearly identify a pattern of

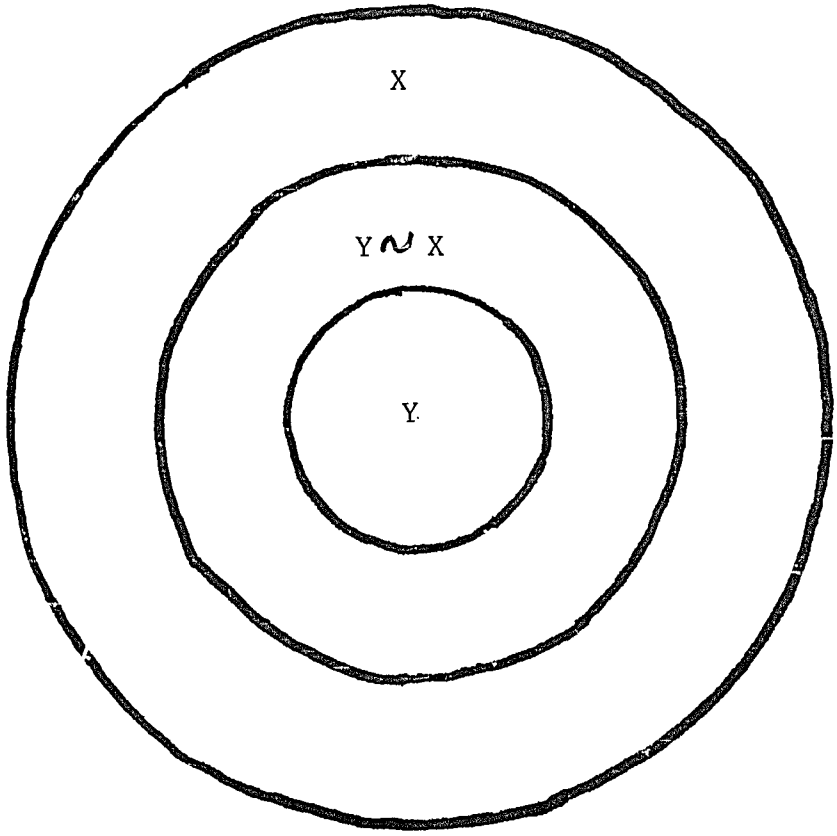
transition through the variation stage of the kw-/k- variable and to isolate the time frame for the variable's introduction into Hong Kong Cantonese. I propose interviewing additional subjects drawn from more age groups whose age ranges will be narrower. Figure 22 below reproduces Figure 11 from Chapter 3. For the kw-/k- variable the age ranges we will be concerned with are as follows: D, 36 to 40; E, 41 to 44; F, 45 to 49, G, 50 to 55; H, 56 to 61. Figure 23 below reintroduces Figure 10 from Chapter 3 where it was stated that the figure represents two-dimensionally both the diachronic and synchronic views of sound change in progress. It becomes the synchronic view when superimposed on Figure 22, a cross-sectional view of the speech community chronologically segmented. The three major historical stages of sound change in progress coincide with the three patterns associated with the use of a phonological variable by different age groups of the speech community. Superimposing Figure 23 on Figure 22 shows that the oldest age groups which are largely unaffected by the sound change of SC /kwo(C)/ to /ko(C)/ and maintain the distinction correspond to the outer ring labelled X in Figure 23; the age groups with variation between SC /kwo(C)/ and /ko(C)/ for both men and women are identified as D, E, F, and G (predominantly women) and coincide with the middle ring labelled X∼Y; and the age groups which have undergone a complete change from SC /kwo(C)/ to /ko(C)/ are A, B, and C (with overlap with D and E and F for men) and are congruent



Revised Age Groups

Figure 22

with the inner ring labelled Y.



Stages in the Sound Change Process

Figure 23

5.0 Conclusion

In this study the theory of lexical diffusion has been joined with sociolinguistic methodology in the micro-synchronic study of sound change in progress in Hong Kong Cantonese. The phonetic, lexical, and social dimensions of two sound changes were investigated: the bilabialization of the syllabic velar nasal, SC /ŋ̍/ → /m̩/; and the delabialization of the labialized velar initials before the low back rounded vowel /ɔ /, SC kw- → k-/__ɔ(C). A total of 75 subjects ranging in age from 15 to 75 with all but seven born and raised in Hong Kong were interviewed. The subject's use of the n/m and kw-/k- variables under formal and informal speech conditions was correlated with the age, sex, and educational level of the subjects. The study indicates that the change of SC /ŋ̍/ → /m̩/ first began with the word 五 "five" which developed the syllabic bilabial nasal variant as the result of labial assimilation. This change has not affected all lexical members of the SC /n/- class in the same way: that is, 五 is more advanced in the change to /m̩/ in terms of the number of speakers who use this pronunciation than are 午 and 吳 . For most subjects age and educational level inversely correlate with the use of /m̩/: for subjects over the age of 40, the higher the subject's age, the lower the incidence of /m̩/ in both formal and informal speech contexts. For subjects under 40 the higher the subject's years of formal schooling, the lower the incidence of /m̩/ in both formal and informal

speech contexts. The majority of young men between the ages of 15 and 22 have a completed change to /m̩/; men and women between 23 and 30 use a high rate of /m̩/ in their casual speech but switch to the standard form /ŋ̩/ when reading a story and word lists. Women between the ages of 31 and 44 have variation between /ŋ̩/ and /m̩/, use /m̩/ at a much higher rate in both formal and informal speech contexts than men of the same age group, and show less shifting to /ŋ̩/ in the formal speech context than men of their own age group and other age groups. It is suggested that the change to /m̩/ originated with women who are now in their early 40's. Men and women over the age of 45, regardless of their educational level, do not use /m̩/ in either their casual speech or formal speech. This sociolinguistic investigation of the change from syllabic velar nasal to bilabial nasal indicates that the mechanism for implementing this change still in progress is lexical diffusion. It also confirms Labov's recent statement that "[w]here lexical diffusion does occur, it is to be found most often in changes across subsystems... and changes of place of articulation of consonants" (Labov 1981:303).

The phonetic cause of the delabialization of labialized velar initials is attributed to the speaker's principle of maximum ease of articulation. The difference between SC /kwo(C)/ and /ko(C)/ is the extra tension in lip-rounding of the labialized velar initial. Delabialization in rapid

speech is a natural development when speakers eliminated this additional degree of lip-rounding giving rise to the delabialized variant. Although homophony has resulted between the labialized and plain velar initial series, it has not created any burden of miscommunication, and the variant has replaced the standard form for many speakers. In the subjects' reading pronunciation the high frequency words 過 , 國 , and 廣 are found to be more advanced in the change to /ko(C)/ than the low frequency words 果 and 光 . On the other hand, the very low frequency words 郭, 狂 , and 礦 are more advanced in the change to /k-/ than the high frequency words. The majority of the study's subjects -- 46 out of 75 -- have a completed change to the plain velar initial in casual speech. Of this group of subjects are below the age of 30. For some subjects there is an inverse relation between the subject's use of /ko(C)/ and the subject's age and educational level: subjects from all four age groups with the high educational level tend to use less /k-/ in their reading pronunciation than their less-educated agemates. Only the study's oldest subjects, three women aged 68, 73, and 75 and two men aged 51 and 55, preserved the kw-/k- contrast in their casual speech.

Almost a hundred years ago, Hugo Schuchardt, a 19th Century critic of the neogrammarians, observed that "[t]he greater or lesser frequency in the use of individual words . . . is of great importance . . . for their phonetic transformation. . . Very rarely used words remain behind, very

frequently used words take the lead . . ." (Mohr 1971:23). Comparing the impact of the two sound changes on their respective word classes indicates that the correlation between word frequency and rate of sound change of members of a lexical class is not as simple as Schuchardt has said. That high frequency words can be more advanced with respect to a sound change than low frequency words was true of the change SC /ŋ̣/ → /m̥/. This was not the case, however, for the change SC kw- → k-/__o(C) for which very low frequency words had a higher rate of change to /k-/ in the subjects' word list style than high frequency words.

ENDNOTES

[1]The system of romanization and tone marks used here for the Standard Cantonese dialect (abbreviated in the text as SC) of Hong Kong is as follows:

IPA	Bauer's Cantonese Romanization	IPA	Bauer's Cantonese Romanization
p	p	a	a
p'	p'	ɑ	aa
m	m	ɛ	e
n	n	œ	oe
l	l	ɔ	o
f	f	i	i
t	t	u	u
t'	t'	y	y
tʃ	ts	m̩	m̩
tʃ'	ts'	ŋ̩	ŋ̩
ʃ	s		
j	j		
k	k		
k'	k'		
h	h		
ŋ	ŋ		
kw	kw		
k'w	k'w		
w	w		

Tone Marks

x̂	High Level/High Falling	˥55 ˥˧53
x́	Mid Rising	˧˥35
x̄	Mid Level	˧33
x̀	Low Falling	˩˧21
ẍ	Low Rising	˨˩24
x̌	Low Level	˩22

[2]This Table 103 was supplied to me by Mr. Frank Yu, Statistician, Census and Statistics Department, who kindly extracted the figures from the computer tapes since this table had not been published in the original Main Report.

[3]Steve Baron directed my attention to this development in Shanghainese.

[4]The most systematic data available on word frequency in Chinese which I have seen is based on written Mandarin dialect in Taiwan. According to A Study on the High Frequency Words Used in Chinese Elementary School Reading Materials (國民學效常用字彙研究)published in Taiwan in 1967, the nine words we have been concerned with have the following word frequency rankings based on the number of times they occurred in written texts:

Rank	Lexical Item	Number of Occurrences	% of Total
1	國	6,707	61.1%
2	過	1,791	16.3%
3	果	929	8.5%
4	光	747	6.8%
5	廣	576	5.3%
6	礦	137	1.3%
7	郭	35	0.3%
8	狂	32	0.3%
9	果	15	0.1%
	Total:	10,969	100.0%

We have assumed that since 郭 , 狂 , and 磺 did not occur in the Spontaneous Speech of the study's subjects the frequency of these items in the speech of everyday life must also be relatively low. The above data show that at least for written Chinese material used in a Mandarin-speaking society these are indeed very low frequency items. Whether the same holds true for Hong Kong's Cantonese-speaking society would require study of word frequency based on written Chinese material used in Hong Kong schools.

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APPENDIX

1. Parent's Letter of Introduction:

親愛的家長：

今年美國教育局會在香港支持一個研究香港社會與語言的計劃。此計劃的目的是調查香港的社會環境與其廣東話的關系。爲了搜集資料，我們想同一些在香港出世的人用錄音機作訪問。訪問的問題很簡單，就是關於在香港長大的人的生活經驗。訪問其中一部分是包括念一個小故事和一些中文字。訪問時間用一個小時。被訪問的人所提供的資料將會全部受到保密。

爲着容易接觸一般的香港市民，我們想通過學校來聯絡學生和他們的家長。我們誠懇地請你參加這個調查來提供你的生活經驗。美國人都想多知道香港人的生活特徵。你的合作將有助於提高美國人對香港人的了解。

如果你願意接受訪問，請填妥問卷，然後遞交給子弟。由他轉交研究計劃主任。接受訪問的人是會按照隨意插樣的辦法選擇的。所以只有一部分交回問卷之人會被訪問。

祝你健康快樂，

包睿舜

Robert S. Bauer

香港語言和社會研究計劃主任

亞洲研究中心

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Director: Dr E. K. Y. Chen

香 港 大 學
亞 洲 研 究 中 心
主 任：陳 坤 耀

2. Parent's Letter of Notice of Selection:

親愛的家長：

四月底你的子弟交回給我一份你已填妥的『家長訪問資料卷』。因爲你的姓名是被選擇接受訪問，所以過了幾天我會用電話跟你聯絡來安排訪問的時間。我們談話的時間不會超過一個小時。

祝你

健康快樂

Robert S Bauer
Robert S. Bauer

包睿舜
香港語言和社會研究計劃主任
一九八一年六月二十二日

University of Hong Kong
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Director: Dr E. K. Y. Chen

香港大學
亞洲研究中心
主任：陳坤耀

3. Parent's Thank-you Letter

很感謝你在最近訪問期間衷誠的合作，閣下的談話資料給與本人在研究工作上很大的幫助。

謹此致謝，並祝健康快樂。

Robert S Bauer

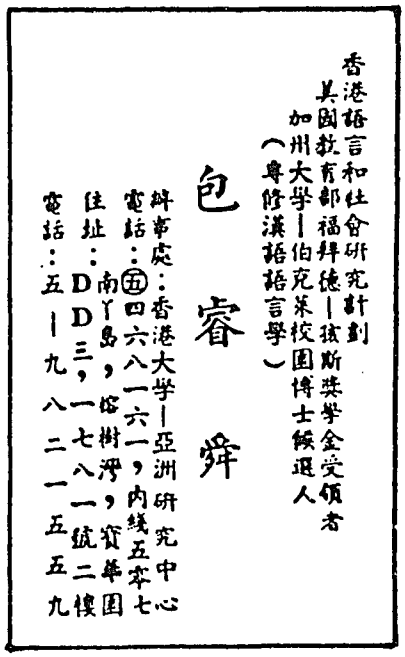
Robert S. Bauer

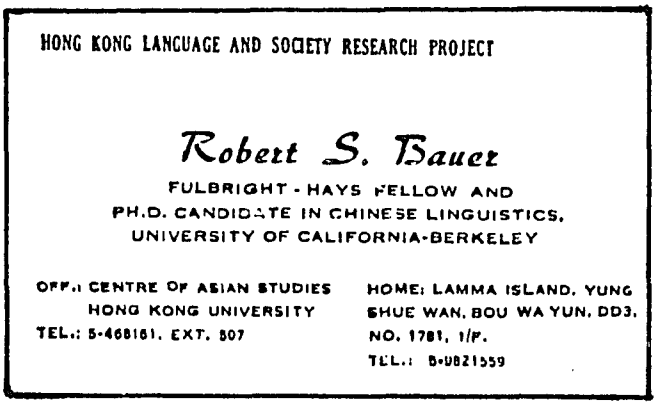
包睿舜

香港語言和社會研究計劃主任

一九八一年六月十五日

4. Researcher's Name Card





5. Student's Subject Data Sheet

學生訪問資料卷

姓名_____ 性別____ 年齡____ 地址_____ 電話_____

出生地點_____ 如不在香港出世，幾歲來香港？_____

學校／學院_____ 讀幾年級_____

父親出生地點_____ 母親出生地點_____

父親教育程度(所讀最高班級)_____ 母親教育程度_____

父親職業_____ 母親職業_____

你家住的房子屬於(請圈上適當數字)：

1、私人樓宇　4、政府屋邨　7、其他_____(請說明)

2、賃租屋　5、木屋區

3、公司宿舍　6、政府宿舍

除了廣東話之外，你會說其他方言嗎？___會　___不會

如果會的話，請圈上適當數字：

1、普通話 (國語)　5、中山話　9、順德話　13、其他_____(請說明)

2、上海話　6、潮州話　10、東莞話

3、台山話　7、客家話　11、石岐話

4、新會話　8、三水話　12、鶴山話

你和家人平時說甚麼方言？_____

請圈上甚麼時候最方便你接受訪問：

星期一　二　三　四　五　六　日　　早上　下午　晚上

6. Parent's Subject Data Sheet

家長訪問資料卷

姓名_____性別____ 年齡____ 地址_____ 電話_____

出生地點_____ 如不在香港出世，幾歲來香港？____

教育程度(所讀最高班級)_____ 職業_____

配偶出生地點_____ 如不在香港出世，幾歲來香港？____

配偶的教育程度_____ 配偶的職業_____

你家住的房子屬於(請圈上適當數字):

1、私人樓宇　　4、政府屋邨　　7、其他_____(請說明)

2、廉租屋　　5、木屋區

3、公司宿舍　　6、政府宿舍

除了廣東話之外，你會說其他方言嗎？____會　____不會

如果會的話，請圈上適當數字：

1、普通話(國語)　　5、中山話　　9、順德話　　13、其他_____(請說明)

2、上海話　　6、潮州話　　10、東莞話

3、台山話　　7、客家話　　11、石岐話

4、新會話　　8、三水話　　12、鶴山話

你和家人平時說甚麼方言？_____

請圈上甚麼時候最方便你接受訪問：

星期一　二　三　四　五　六　日　　早上　下午　晚上

7. Subject Data Sheet

訪問資料卷

姓名_____ 性別___ 年齡___ 地址_____ 電話_____

出生地點_____ 如不在香港出世，幾歲來香港？_____

教育程度(所讀最高班級)_____ 職業_____

已婚___ 未婚___ 離婚___ 配偶的職業_____

配偶出生地點_____ 如不在香港出世，幾歲來香港？_____

父親出生地點_____ 母親出生地點_____

父親教育程度(所讀最高班級)_____ 母親教育程度_____

父親職業_____ 母親職業_____

你家住的房子屬於(請圈上適當數字)：

1、私人樓宇 4、政府屋邨 7、其他_____(請說明)

2、廉租屋 5、木屋區

3、公司宿舍 6、政府宿舍

除了廣東話之外，你會說其他方言嗎？___會 ___不會
如果會的話，請圈上適當數字：

1、普通話 (國語) 5、中山話 9、順德話 13、其他_____(請說明)

2、上海話 6、潮州話 10、東莞話

3、台山話 7、客家話 11、石岐話

4、新會話 8、三水話 12、鶴山話

你和家人平時說甚麼方言？_____

8. Cantonese Interview Questions

香港生活

你喺香港邊區出世㗎？
你喺香港邊區長大㗎？
你而家喺邊度住？

喺嗰度住有啲乜嘢好處呀？
喺嗰度住有冇害處或者唔方便㗎既嘢？
喺你住嗰區有啲乜嘢地方需要改善㗎架？
你覺得住喺香港好唔好呀？
如果你有一個機會改善你住嗰區，你會點樣改善呀？
你同你嘅隔離鄰舍都相處得好唔好呀？
除左你住呢區之外呢，你有有喺香港其他啲地區住過呀？
香港有邊啲方面你最鐘意㗎？
香港有邊啲方面你最唔鐘意㗎架？
你覺得香港人係唔係好自私？
香港最熱鬧係邊條街呀？
你有冇覺得喺香港呢達地方住係比較特別啲嘅呢？
就係話住喺世界上其他啲地方唔會有喺香港住嘅樣嘅經驗？
以你所記得嚟講，香港呢幾年改變得多唔多呀？
你覺得香港係進步咗或者退步咗呀？
你注唔注意香港市政局嘅事呀？
你覺得喺香港去玩嘅機會同埋愉樂嘅地方，運動場，公園，多唔多呀，好唔好呀？
如果你係一個市政局議員，你會點樣改善香港嘅情形呀？
如果你有一個冇住過香港嘅朋友想嚟呢度住，你話佢會唔會住得開心呀？
你點解有嘅樣嘅感覺呀？
呢區叫做乜嘢名呀？
……係由邊條街去到邊條街呀？
香港最迫嘅地方係邊條街呀？

旅行經驗
你有冇喺香港以外啲地方住過呀?
你有冇去過外地旅行呀?
去過邊度地方呀?
去咗個度幾耐呀?
你想唔想搬去香港另外一個地方住呀?
你想唔想搬去另外一個國家住呀?

工作
你做啲乜嘢工作呀?
你鐘唔鐘意你嘅工作呀?
你喺邊度返工呀?
你踏吧哽或者揸車呀?
嗰樣返工方唔方便呀?

建築地盤工作
今年香港發生咗好多地盤嘅意外;睇弟報紙嘅報導,
我哋知道喺地盤做嘢係比較危險啲嘅?
你覺得喺地盤做嘢點危險法呀?
你估點解會發生地盤嘅意外呢?
你自己有冇試過喺地盤發生意外呀?
嗰件事係點樣㗎?

生活危險經驗
你細個嗰陣時有冇試過差啲就死嘅事情?
你幾年有冇試過差啲就死嘅事呀?
你有冇經驗過乜嘢危險嘅事,差啲連命都冇埋?
你有冇見過鬼呀?

打交，遊戲

以你嘅經驗嚟講呀，香港啲後生仔打交多唔多呀？
有啲乜嘢原因令佢地要打交呀？
點解香港啲後生仔會打交呀？
你嗰班朋友有冇同人打交呀？
你自己有冇試過同人打交呀？
你有冇見過一個人俾人打得好犀利呀？
佢點樣㗎？
你有冇同一個比你大啲嘅人打過交呀？
情形係點樣㗎？
你哋啲班朋友平日玩啲乜嘢遊戲呀？
。。。係點樣玩㗎？
有幾多人可以玩㗎？
你有冇養過狗呀，猫呀，啲敢樣嘅寵物呀？

露營

你有冇去過露營呀？
去邊度呀？
去咗嗰度幾多日呀？
去露營你通常會帶啲乜嘢嘢呀？
你鐘意有幾多人同你一齊去呀？
你鐘意同點樣嘅人去露營呀？
譬如話，佢哋使唔使識煮飯，識彈結他，或者唔係幾囉嗦㗎？
你喺露營嗰陣時有冇經驗過乜嘢特別嘅事呀？

哲學

以你既睇法黎講呀，一個成功嘅人係點樣㗎？
如果你可以改變你嘅生活呢，譬如話，再讀書或者再搵嘢做，你會點樣呢？
如果你有好多錢，就係話，你想有幾多就有幾多，你會用嗰啲錢做啲乜嘢呀？

娛樂活動

你鐘唔鐘意睇電視廣播嘅體育節目呀?
你最鐘意睇的乜嘢電視節目?
你鐘意睇的乜嘢體育節目呀?
你鐘唔鐘意睇賽馬?
你賭唔賭馬呀?
你有冇贏過馬呀?
你贏咗幾多錢呀?
你贏咗最多錢係幾多錢呀?
你有冇輸咗好多錢?
輸咗幾多錢呀?

教育

你喺邊度讀書呀?
你以前喺邊度讀書呀?
你讀啲的乜嘢書呀?
畢業咗之後呢，你希望做啲的乜嘢工作呀?
嗰種工作要做啲的乜嘢㗎?
做嗰種工作需要訓練幾耐呀?
你有冇見過一個成日鬧人嘅先生呀?
佢點解會鬧人呀?
你有冇俾先生鬧過?
會唔會係因爲你嘅錯?
同你最好嘅先生，佢個人係點樣㗎?
點解你會咁鐘意佢?
你有冇會過一個先生呀?
點解會佢呀?
啲學生有冇試過整蠱先生呀?
你啲同學之中，有冇一個好蝕𥄫?
啲同學點解覺得佢好蝕呢?
你嘅學校係幾點鐘返學㗎?
你嘅學效係幾點鐘放學㗎?
放咗學之後呢，你啲同學做啲的乜嘢呀?

冤枉

你有冇試過俾人冤枉呢？
你有冇試過俾的朋友或者你哋同學、屋企人冤枉呢？
嗰件事係點樣㗎？
呢排有冇乜嘢事令你覺得好討厭、好無耐性、或者好猛爭呀？

節日習慣

你屋企點樣慶祝舊曆新年？
你哋有冇啲特別哋風俗習慣，就係話隔離嗰啲人就冇呢啲習慣？
你哋點樣慶祝中秋節呀？

住醫院

你有冇住過醫院呀？
點解你要住醫院呀？
醫院嗰度點樣呀？

朋友

你有冇好鐘意同某特別哋一班朋友來往呀？
你以前有冇特別同一班人來往呀？
嗰啲的人有幾多歲呀？
你而家重有冇同嗰啲的人來往呀？
喺你嗰班朋友之中，有冇一個人係做你哋哋領袖㗎？
就係話其餘啲的人係聽佢哋說話、認爲佢係嗰班人哋既大哥頭牙？
嗰個個人係點樣㗎？
佢會唔會係最醒目、最大隻嗰個個呀？
其他人可唔可以加入你班朋友裡面呀？
佢哋點樣加入㗎？

語言意見

而家我想同你傾下有關香港嘅廣東話嘅問題：

你覺得自己講嘅廣東話係標唔標準㗎？

你自己嘅廣東話講得正唔正呀？

你覺得自己嘅廣東話發音正唔正呀？

你鐘唔鐘意香港人講說話嘅方法？

請你講得詳細啲，邊一方面係你鐘意㗎？

邊一方面係你唔鐘意㗎？

你鐘唔鐘意聽香港人講俗既說話，譬如話，有冇攪錯呀？係咁先，呢啲俗嘅講法？

按照你嘅睇法黎講，香港人講廣東話講得正唔正？

你鐘唔鐘意你自己講說話嘅方法？

你鐘唔鐘意你嘅仔女講說話嘅方法？

你有冇改變自己講說話嘅方法？

就係話，你有冇試過聽到第二啲人講說話嘅發音同你有啲唔同，你就以爲佢哋嘅發音係啱嘅，所以就跟住佢哋改咗自己嘅讀音呢？

你會唔會話香港嘅廣東話同廣州嘅廣東話有啲唔同呢？

兩個地方嘅廣東話有啲乜嘢唔同呢？

你覺得香港嘅廣東話有冇發音嘅標準？

香港嘅邊啲人係講最標準嘅廣東話呢？

你有冇啲朋友識講潮州話，台山話，上海話，客家話？

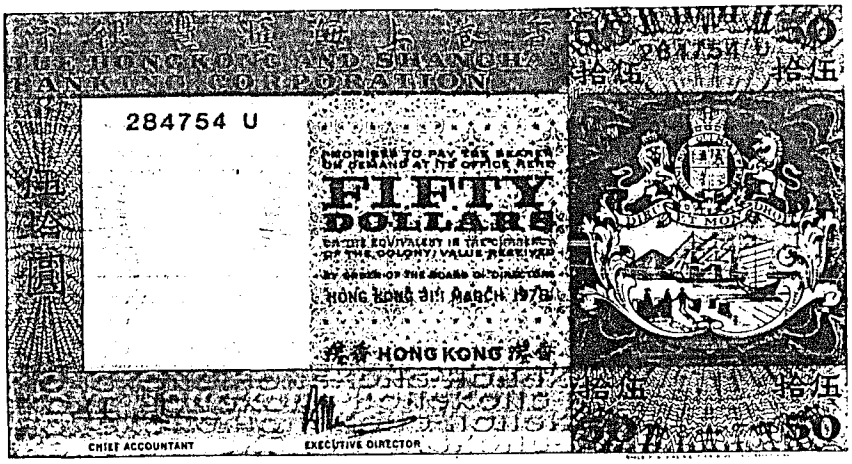
如果你碰到一個你唔識讀嘅漢字，你有乜嘢辦法可以知道嗰個字嘅讀法呢？

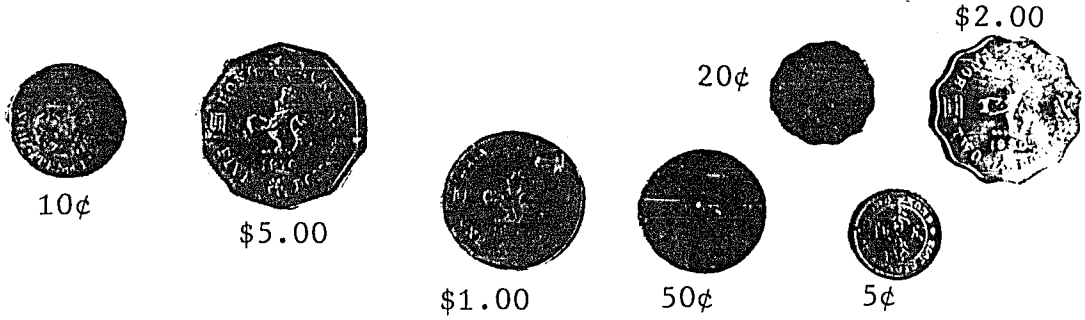
而家我想請你睇呢的童謠。你細個嗰陣時有冇唱呢個童謠　請你幫我讀出嚟：

請你睇呢個廣東話嘅故仔，請幫我讀出嚟：

請你幫我讀出呢啲字嚟：

9. Hong Kong Money Card





月光光

月光光，
照地塘，
年卅晚，
摘檳榔。
檳榔香，
摘子薑；
子薑辣，
買蘭突。
蘭突苦
買豬肚。
豬肚肥，
買牛皮。
牛皮薄，
買菱角。
菱角尖，
買馬鞭。
馬鞭長，
起屋樑。

屋樑高，
買張刀。
刀切菜，
買籠蓋。
籠蓋圓，
買隻船。
船漏底，
浸死兩個番鬼仔。
一個藩頭，
一個浸底。
一個里埋門扇底，
一個變成條油炸鬼。

11. Story

過新年

以香港嘅歷史嚟講，呢一百幾十年都受到歐洲文化嘅影响。香港雖然係一個已經西化咗好耐嘅社會，但係我哋香港人仍然慶祝幾個中國傳統嘅節日。因為傳統中國社會嘅基石基係農民，所以傳統嘅節日多數係同農民嘅生活有關係嘅。譬如話，中秋節本來係秋天嘅時候豐民慶祝豐收。舊曆新年係春天嘅節日：冬天已經過咗，農民就要去耕田。新年節係歡迎春天返嚟。我哋喺香港重紀念我哋嘅祖先：喺清明節嘅時候我哋去掃墓拜祭祖先。重有呢，我哋亦紀念出名嘅中國歷史人物：端午節就係紀念古代愛國詩人屈原；舊曆五月五日我哋又食粽又睇龍船。

講到中國傳統嘅節日令我諗返起我細個嗰陣時喺廣東省，台山縣過新年嘅情形。我屋跧過新年有啲特別嘅習慣同埋啲迷信嘅嘢添！

新年係拜年嘅日子。嗰幾日我哋去探我哋嘅親戚朋友。我哋細路哥嗰陣時好鍾意去拜年，因為大人俾利是我哋。我重記得我嘅表哥，叫做吳廣雅，雖然係一個流鼽鼽嘅王佬五，但係佢重攞倒啲利是添！

諗起新年令我好肚餓。新年我哋會食各種特別嘅食物：譬如，魚，柑橘，花生，髮菜，蠔豉，生菜，蓮子；因為呢啲食物嘅名係代表好意頭，就係「有餘有利，金吉，長生，發財，好市，生財，連生貴子」，等等。

新年有兩種動物代表勇猛同埋強壯：就係獅子同龍。因為鬼好怕佢哋，所以佢哋間接保護人。新

年嗰幾晚，街道好熱鬧。有人趁喺街邊睇啲後生仔燒炮仗同埋舞獅舞龍。啲獅同龍好似毛蟲或者蜈蚣一樣。又長，又多腳，彎彎曲曲嘅。我重記得我第一次睇見舞獅覺得好驚。嗰陣時我係五歲倒，因為好矮，所以睇唔到嘢，阿爸舉起我嚟睇舞獅。獅子行過嚟好近我，近到可以摸得倒佢。我睇見佢兩隻眼，圓碌碌，光棯棯，就以為佢係怪物，結果好驚。等我長大咗之後先至知道獅頭嘅裡便有電燈。我哋亦見到啲後生仔一路跟住隻獅子一路燒炮仗，神同人都好鍾意聽炮仗嘅聲，但係惡鬼就會俾呢啲聲嚇到走開。連我呢個細路仔都有啲驚。

喺中國每個屋企嘅廚房都有個神保護屋企嘅人。佢叫做灶君。廚房裡便重有佢嘅畫像。到年尾年廿四人人都要拜灶君。喺呢個夜晚黑灶君會上天對玉皇大帝報告每個屋企嘅人所做嘅好壞同壞事。因為我哋希望佢會講好嘅說話，所以我阿媽俾啲甜嘅嘢佢食。佢攞一碗糖水，點隻手指，擦啲糖水喺灶君畫像嘅口唇上便。噉樣佢會淨係講好聽嘅說話，新年就會行運喇。啱啱夠午夜嗜，阿爸就擰咗灶君嘅畫像出去外便，燒着佢。灶君就會上天喇！

郭先生　　禮拜五

你哋　　廣東省

過馬路　　客廳

牛仔褲　　外國人

佢姓吳　　年紀

南部　　文憑

肯定　　戶口

活動　　女仔

牛奶　　狂風

眼鏡　　音樂

法國　　惡鬼

農場　　我哋

西湖　　歐洲

曾太太　　梗係

屋企　　電燈

13. Word List II (single character)

靚	肯	惡
矮	光	誤
擰	年	鬧
顏	歐	貴
牛	廣	弧
傌	我	香
互	你	眼
活	午	鬼
筆	省	喘
外	農	礦
果	朋	關
娘	女	雅
鄭	過	國
五	愛	吳

14. Word List III (Minimal pair)

艱	關	吳	唔	藍	男
較	夠	個	過	萬	問
猪	知	女	旅	許	佢
行	閒	貴	計	朋	貧
理	你	趕	講	師	書
還	橫	廣	港	宏	雲
君	跟	五	午	債	制
很	肯	諾	落	新	生
鈎	歐	光	江	找	走
年	連	敢	減	郭	角
嘔	儒	團	田	農	龍