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Lexical Diffusion in Hong Kong Cantonese:
"Five" Leads the Way

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Currently, in Hong Kong Cantonese there are several sound changes underway, one of which is the change of the syllabic velar nasal to the syllabic bilabial nasal, /ŋ/ → /m/.¹ On the basis of my observations of this sound change while conducting fieldwork in Hong Kong, I believe I have identified the phonetic origin of the sound change, the particular morpheme with which the change began, the relative schedules of change of several morphemes of the word class, and the different stages of development of various segments of the speech community which have been affected by the sound change.

The model of sound change within which I will describe the observed sound change is based on the theory of lexical diffusion first proposed by Wang (1969). This theory recognizes that sound change proceeds through time and that this process can be viewed 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 speaker to speaker within 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, Cheng and Wang 1970, Hsieh 1973, Wang and Cheng 1970). The present paper, however, departs from this general trend by applying the theory of lexical diffusion to the synchronic study of a particular sound change now in progress in the Cantonese dialect spoken in Hong Kong.

Of particular relevance to the microstudy of these three dimensions of synchronic sound change are data-gathering techniques developed in sociolinguistic investigations of American English first described by Labov (1966) and subsequently applied by Shuyet al. (1968). Sociolinguistic sampling and interviewing permit the sociolinguist

to observe sound change as if under a microscope by bringing into sharp focus the development of the sound change within the lexicon and its distribution across subgroups of speakers.

For my study of sound change in Hong Kong Cantonese, I gathered a sample of 75 subjects who ranged in age from 15 to 75. The subjects were not randomly selected, and the sample can best be described as a judgmental sample. Labov has suggested that the most efficient procedure to select a sociolinguistic sample " . . . is to graft the linguistic study on to an earlier sociological study, and conduct a secondary survey of a portion of the earlier sample" (Labov 1966b:7). Unfortunately, a pre-selected sample of subjects was unavailable in Hong Kong, and, in fact, the sociological study of characteristics that identify social classes in Hong Kong has never been done. Faute de mieux, I selected a sample which spanned a fairly wide range of social class backgrounds and age groups representative of the Hong Kong-born population. All but seven subjects are Hong Kong-born, and these seven were born in Canton or its vicinity and moved to Hong Kong at age ten or younger. As indicated in Table 1, the sample includes 42 men and 33 women whose occupations include school principal, teacher, office worker, housewife, student, construction worker, bank clerk, engineer, barber, welder, office machine operator, retired nurse, dock worker, etc.; their years of formal schooling² range from 16 for university graduates to less than six. That this sample is sufficiently large and socially diverse provides the research design of the study with its external validity and permits the results obtained from the sample to be reliably extended to the whole of the Hong Kong speech community.

The linguistic interviews, all of which were conducted by this researcher, comprised two parts: an informal section in which the subject was engaged in casual conversation for the purpose of producing spontaneous speech; and a formal section in which the subject read a story written in colloquial Cantonese and three word lists. In the story and word lists were embedded words which would elicit the phonological variable under investigation.³

The three dimensions of the change from syllabic velar nasal to syllabic bilabial nasal to be analyzed in this study are 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.

In Standard Cantonese of Hong Kong there is only one morpheme pronounced with the syllabic bilabial nasal: it is pronounced / m̩ / and means "no, not"; it is often

Table 1. Social Characteristics of Subjects: Sex, Age, Occupation, Education

| 16 years university degree | 14-15 years technical/adv trainng | 12 years high schl form 6 | 11 years high schl form 5 | 10 years high schl form 4 | 9 years middle schl form 3 | 6 or less elem schl |
|----------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------|
| FEMALES | | | | | | |
| 23-teacher | 22-secretary | 23-typist | 16-student | 16-student | 18-sprmk | 35-housewfe |
| 25-teacher | 24-teacher | 24-unvrsty | 18-student | 37-housewife | stocker | 42-housewfe |
| 26-teacher | 26-acntng asstnt | secrtry | 24-typist | wife | 30-ofc mchn operator | 42-housewfe |
| 28-teacher | 40-housewife | wife | 24-typist | | 73-retired | 44-housewfe |
| 35-school principal | 28-librarn | | 25-office custdn | | bsnswman | 47-housewfe |
| 68-retired bsnswoman | | | 25-typist | | 75-retired nurse | 47-housewfe |
| | | | 35-housewife | | | 52-housewfe |
| MALES | | | | | | |
| 24-graduate student | 24-unvrsty mntnce worker | 18-student | 16-student | 16-student | 15-constrcn worker | 18-constrcn worker |
| 27-teacher | 26-engineer | 18-student | 18-student | 16-student | 19-constrcn worker | 18-constrcn worker |
| 28-teacher | 27-advertsn artist | 20-student | 21-ofc clrk | 17-student | 19-constrcn worker | 26-welder |
| 34-teacher | | | 36-ofc clrk | 17-student | 19-constrcn worker | 44-porter |
| 40-laboratory technician | | | 37-ofc clrk | 18-student | 19-ofc boy | 45-dock worker |
| | | | 44-housing est mgr | 20-film devlopr | 21-barber | 52-bank worker |
| | | | 49-self-emp bsnsmn | 27-air con mntnce worker | 23-furniture painter | manual worker |
| | | | 51-bank clk | | 30-ofc clrk | 60-apt bldg watchman |
| | | | | | 55-sales-clerk | |

written with the Cantonese character 唔.⁴ The syllabic velar nasal morpheme class includes about a half dozen or so readily recognized words:

| | |
|-----------------------------|-------------------|
| 五 /ŋ/ "five" | 蜈 /ŋ/ "centipede" |
| 伍 /ŋ/ "column" or "surname" | 誤 /ŋ/ "mistake" |
| 午 /ŋ/ "noon" | 悟 /ŋ/ "awake" |
| 吳 /ŋ/ "surname" | |

Only the four words on the left occur with any frequency in the spoken language, while the three words on the right belong primarily to written Chinese. I base this statement on my transcriptions of the spontaneous speech sections of 33 interviews. In 31 of 33 interviews the velar or bilabial nasal occurred at least once. In 27 interviews only the word "five" occurred, in two only the word "noon," and in two others both these words occurred. Although the two surnames did not occur in this section of the interviews, it can be assumed that since there are many people in Hong Kong with these two surnames, the two morphemes must occur in speech with relatively high frequency. As a result of the change to the bilabial nasal, this class has been gaining morpheme members at the expense of the velar nasal class which is in the process of disappearing altogether from Hong Kong Cantonese.

In attempting to discover the phonetic origin of this sound change, I found two sources of evidence which indicate that the change began first with the word "five" because it acquired an alternative bilabial phonetic variant. In looking through Cantonese dictionaries, syllabaries, and studies of Cantonese phonology published over the last 40 years, I found only one dictionary, published in 1977, which records both the syllabic velar nasal and the syllabic bilabial nasal pronunciations for "five" (Lau 1977:538). No other words belonging to the velar nasal class are so listed. Since dictionaries tend to recognize a new pronunciation after a lapse of years or decades from the time of its introduction into a language, this dictionary entry of the bilabial nasal variant for "five" suggests that the change may be of fairly recent origin. The second source of evidence for "five" comes from the direct observation of speakers' linguistic behavior. In transcribing the spontaneous speech sections of interviews, I noticed that informants who regard the syllabic velar nasal as the correct form, and used it exclusively in the formal contexts of the interview,

nevertheless sometimes produced the bilabial nasal in particular phonetic environments. When "five" co-occurs with neighboring labial segments, it often assimilated to the bilabial nasal as the result of progressive and regressive labial assimilation. The following instances of labial assimilation for "five" were observed:

五文 /m̩ mân/ "five dollars"
 十五 /sǎp m̩/ "fifteen"
 五百 /m̩ pāk/ "five hundred"
 五十 /m̩ sǎp/ "fifty"
 五頁 /m̩ jíp/ "five pages"
 五年班 /m̩ nìn pān/ "fifth year (in school)"

That this sound change should begin with the high frequency word "five" is not unusual: it confirms an observation made almost a hundred years ago by Hugo Schuchardt, a 19th Century critic of the neogrammarians, who pointed out 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). Over the last few years various studies by lexical diffusionists have recognized the importance of word frequency as a factor in sound change, i.e., the most frequently occurring words are typically the ones first affected by the sound change. Among these studies are Hooper (1976) schwa deletion in English; Phillips (1980) raising of /a/ before nasals in Old English; Ogura (1982) vowel shortening in Modern English; and Mohr (1980) development of early Modern English [ū] to [u], [U], and [ʌ].

Before analyzing the second dimension of the sound change to syllabic bilabial nasal, i.e., the lexical dimension, the spread of the change from one morpheme to another within the morpheme class, it is better suited to our purpose to first focus attention on the social dimension of the change, i.e., its distribution across subgroups of the linguistic sample. On the basis of their linguistic behavior with respect to the change, the sample can be subdivided into three groups: 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 the formal section of the interview; second, speakers who show variation between the two forms of the nasal for one or more words of the word class; and third, speakers who have undergone a complete change to the syllabic bilabial nasal for all lexical items in the word class.

For this discussion, we will only consider the responses of subjects in the formal section of the interview, reading the story and the word lists. Figure 1 shows how subjects are distributed in these three groups according to sex, age, and the percent of the bilabial nasal that occurred. In the first group there are 24 subjects who use only the syllabic velar nasal. As can be seen, this group consists primarily of older members of the sample: 14 men and women aged 44 and over belong to this group. Four men between ages 34 and 40 are in this group as well, but not women of the comparable age group, who show variation between the two forms of the syllabic nasal. The remaining four men and two women between the ages of 20 and 28 in this group have received between 12 and 16 years of formal schooling: this suggests they are found here because their high level of education has made them more familiar with the standard pronunciation.

The second group includes 39 subjects who use both the syllabic velar nasal and the syllabic bilabial nasal. The scattergram clearly shows that women between the ages of 16 and 42 use a higher percentage of the bilabial nasal than most men of the same age group who also have variation. For this group educational level is not a sufficient predictor of linguistic behavior, since female high school teachers who have the highest educational level may use a higher percentage of the bilabial nasal than less-educated female office workers of the same age group. The men in this group between the ages of 23 and 30 tend to be more conservative in their use of the bilabial nasal than women of the same age group even though the men are less educated. For this group of six men the percent of the bilabial nasal ranges from 20% to 80% with an average of 38%; their years of schooling range from 4 to 15 with an average of 10.3. For 12 women of the same age group the percent of the bilabial nasal ranges from a low of 6% to a high of 94% with an average of 43%; years of schooling range from 9 to 16 with an average of 12.7. This tendency for Cantonese-speaking young women to lead in the use of the innovative form in the context of formal, i.e., careful, speech contrasts remarkably with Labov's findings. According to Labov, "... 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).

The third group is made up of 12 speakers for whom there is a complete change to the syllabic bilabial nasal. This group includes 11 men and one woman. The scattergram indicates that all but one of the male subjects are

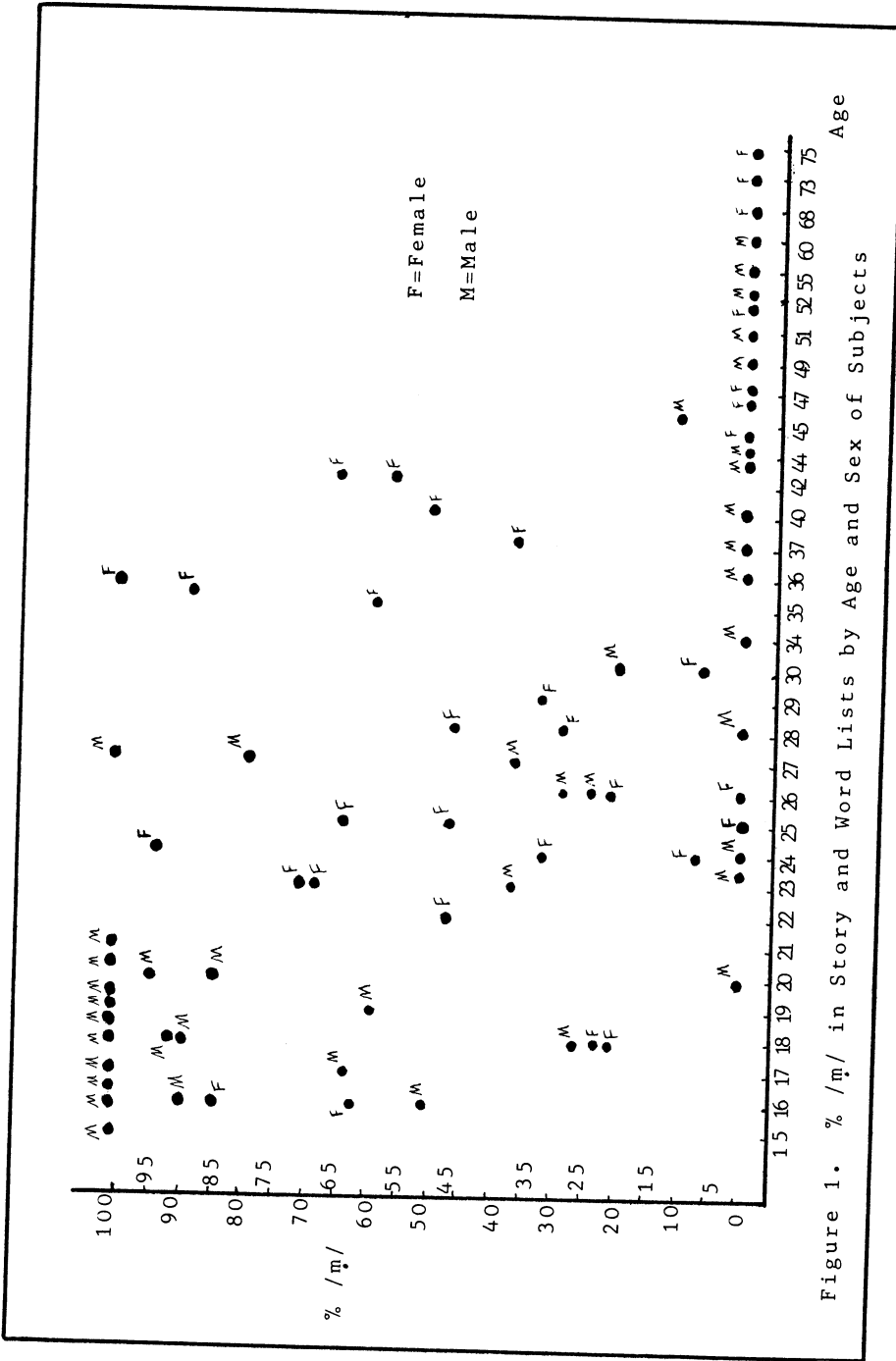


Figure 1. % /m/ in Story and Word Lists by Age and Sex of Subjects

between the ages of 15 and 21. The occupations represented by this group include clerk, construction worker, barber, student; this group has completed an average of 9.8 years of formal schooling. The 27 year-old man with a university degree and the 35 year-old housewife were both born in Canton and moved to Hong Kong at an early age, the man at age 6 and the woman at age 10. Their place of birth may be a factor in making their use of the variable more advanced than other subjects of similar age and social background.

The lexical dimension of this sound change to the bilabial nasal is concerned with how the change has affected the three common morphemes of the word class, "five," "noon," and "surname [with the low falling tone]." Are these three words developing with different or similar schedules of change? The evidence to follow indicates 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. Consequently, we concentrate our attention on the second group of speakers described earlier who have variation. Subjects pronounced the three words in three word lists with each word occurring at least twice in the three lists. There were 11 patterns of linguistic variation with respect to the three words, as shown in Table 2 below. By computing the number of informants 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. This situation is vividly represented in Figure 2, % Change to /m/ of Three SC /ŋ/-Class Morphemes for Word List Style. Out of the 39 subjects 13 or 33% show a complete change to the bilabial nasal for "five"; ten subjects or 26% use the bilabial nasal for "noon"; but only five subjects or 13% have it 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, 9 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." This data and that presented earlier for the phonetic origin of /m/ arising from labial assimilation strongly support the conclusion that the change to /m/ began first with "five", which has led the way for the /ŋ/-class morphemes in the change to /m/ since more speakers use /m/ for "five" than for "noon" or "surname."

This sociolinguistic microstudy of /ŋ/ → /m/ indicates that the mechanism for implementing this change still

| Number of speakers with this pattern | ŋ, ɱ Patterns of Variation | | |
|---|----------------------------|-------------|----------------|
| | 五 "five" | 午 "noon" | 吳 "surname" |
| 9 | ŋ | ŋ | ŋ |
| 4 | ɱ | ɱ | ɱ |
| 4 | ɱ | ɱ | ŋ/ɱ |
| 2 | ɱ | ŋ/ɱ | ŋ/ɱ |
| 3 | ɱ | ŋ/ɱ | ŋ |
| 4 | ŋ/ɱ | ŋ | ŋ |
| 5 | ŋ/ɱ | ŋ | ŋ/ɱ |
| 2 | ŋ/ɱ | ŋ/ɱ | ŋ |
| 1 | ŋ/ɱ | ɱ | ŋ/ɱ |
| 4 | ŋ/ɱ | ŋ/ɱ | ŋ/ɱ |
| 1 | ŋ/ɱ | ɱ | ɱ |

Table 2.

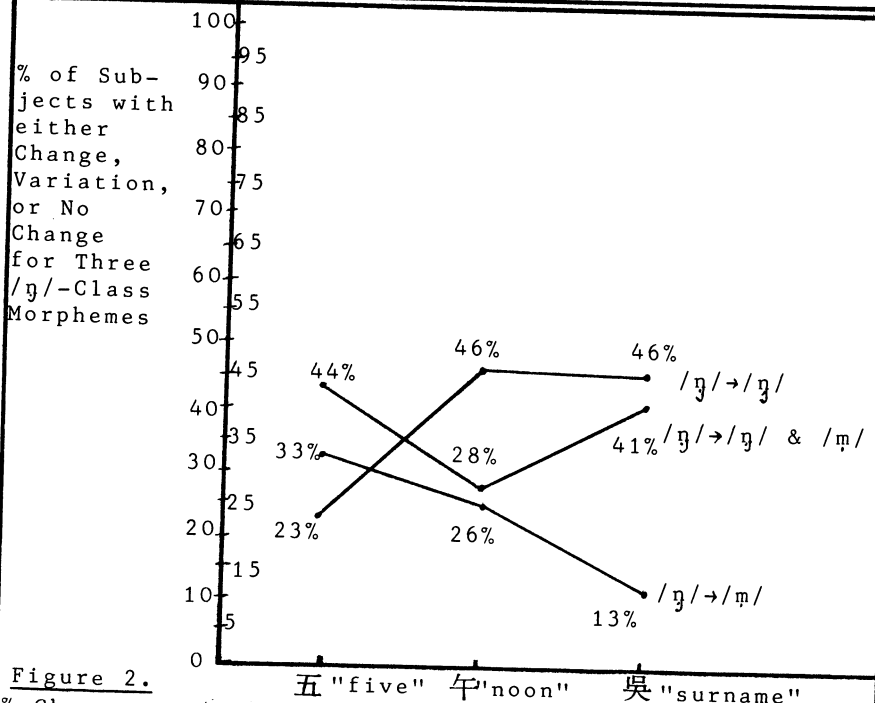


Figure 2.

五 "five" 午 "noon" 吳 "surname"
 % Change to /ɱ/ of Three Standard Cantonese /ŋ/-Class Morphemes for Word List Style (Subjects with Variation in Story and/or Word Lists)

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). Close observation of individual speakers in the Hong Kong speech community strongly suggests that this change first began with the word "five", which developed the syllabic bilabial nasal as a phonetic variant as the result of labial assimilation. Contrary to Hockett's assertion, this study demonstrates that sound change in progress is not too slow or too fast to be directly observed (Hockett 1958:444-45). Analysis of the sociolinguistic sample reveals that this change has run its course, i.e., is a completed one, for many young men in their late teens and early 20's. Men and women in their 20's show considerable variation between the standard form and the variant, with young women more advanced in their use of the bilabial nasal than men of their age group. Older male speakers are relatively unaffected by the change, although variation extends to women in their 30's and early 40's. In addition, for speakers who have variation, the word "five" is more advanced in its development toward the syllabic bilabial nasal than the words "noon" or the "surname [with the low falling tone]."

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Notes

1. The change /ŋ/ → /m̩/ was first mentioned in Bauer 1979. Other sound changes in progress in Hong Kong Cantonese include the following: /kw-/ → /k-/_ɔ̃(C); /n-/ → /l-/; /ŋ-/ → /ʔ-/; /-ŋ/ → /-n/; /w-/ → /v-/; /k'-/ → /h-/ for 佢 "he."
2. Two female subjects, aged 42 and 47, never attended school and declined to read the written instruments saying they could not read. Their families had not sent them to school because of the belief that girls did not need an education.

3. For the two women unable to read, their use of the variable was determined by other means, viz., counting to ten (the variable for "five" occurs once), naming ten pieces of Hong Kong money (three of which elicit the variable for "five"), and using the variable in their spontaneous speech.

4. Cantonese tone marks used in this paper indicate tones as follows:

| | | | | |
|---|-------------------------|---|----|-----|
| ˆ | High Level/High Falling | ↗ | 55 | ↘53 |
| ˆ | Mid Rising | ↗ | 35 | |
| ˆ | Mid Level | ↔ | 33 | |
| ˆ | Low Falling | ↘ | 21 | |
| ˆ | Low Rising | ↗ | 12 | |
| ˆ | Low Level | ↔ | 22 | |

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