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“Hong Kong Cantonese Tone Contours” © Robert S. Bauer

“On the ‘inverted’ double object construction” © Sze-Wing Tang

“Postverbal KEOI as a marker for nonasserted bounded clauses” © Patricia Yuk-Hing Man

“Possessive constructions, classifiers and specificity in Cantonese” © Patrizia Pacioni


“First auxiliaries and modality in child Cantonese” © Colleen Wong

“Expanding the scope of the sentence-final position: postposed modals in Cantonese” © Dana S. Bourgerie
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Acknowledgements

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Preface

Wa! Cantonese jau5 grammar ge3 me1?
‘What, you mean Cantonese has grammar?’ (A Hong Kong undergraduate)

The student’s response to a question on Cantonese grammar -- by no means unusual -- illustrates the widespread preconception that Cantonese has no grammar to call its own. Speakers of Cantonese tend to believe that only written Chinese, or Mandarin, has grammar, while Cantonese is distinguished from Chinese only by pronunciation, idiom and usage. Even among linguists the view persists that the Chinese ‘dialects’, while differing widely in phonology, somehow share the same grammatical structure. Reflecting the prevailing view, the field of Chinese linguistics has so far been based to a large extent on Mandarin data. In recent years, however, research has begun to consider Chinese grammar in a comparative perspective. It has become clear that differences in structure between Chinese dialects (or Sinitic languages) have often been underestimated, and that Cantonese is especially distinctive in this respect. At the same time, Cantonese language and culture have gained in prestige, helping to make their study attractive to scholars and students.

The Linguistic Society of Hong Kong has played a significant role in this resurgence of interest, beginning with the first International Conference on Cantonese and other Yue Dialects co-sponsored by the Society in 1987. Most of the papers collected here have their origin in LSHK events, such as the Annual Research Forum and the syntax and semantics workshop held in 1994; others have been written and presented elsewhere by overseas members of the Society who have worked in Hong Kong at some time in their careers. We hope that these papers will demonstrate the rich wealth of grammatical structure in Cantonese, much of which still awaits detailed exploration. Reflecting this situation, the papers presented here are primarily descriptive in orientation; we look forward to the appearance of more theoretically oriented work on Cantonese in the near future.

Some of the papers address established distinctive features of Cantonese grammar, such as the double object construction analysed by Tang Sze-Wing and the syntax of classifiers whose role in possessive constructions is described by Patrizia Pacioni. Another highly distinctive feature is the postverbal usage of the pronoun keoi discussed by Patricia Man. Robert Bauer’s contribution brings experimental data to bear on the complex phonetic reality behind the familiar tonal categories. The papers by K.K.Luke and Owen Nancarrow focus on the syntax and semantics of modal auxiliaries, making use of corpus data. The syntax of modals is also a concern of Dana Bourgerie’s paper on the ‘afterthought’ construction, a feature of colloquial speech rarely noted in grammatical descriptions.

A further development during the 1990s in which LSHK members have been actively involved has been the investigation of the acquisition of Cantonese as a first language. The fruits of the Cancorp child language corpus project are represented here by Colleen Wong’s contribution on the development of modality in child Cantonese. This line of work promises to enrich the data base for the field of child language acquisition, which has been dominated by findings from English and other European languages.
The present volume adopts the LSHK romanization system, *JyutPing* (a truncation of *Jyut6jiyu5 Ping4jam1*, ‘Cantonese pinyin’, coined by Caesar Lun). The lack of a standard system of romanization has long hampered research and teaching involving linguistic analysis of Cantonese -- an issue brought to the society’s attention by Cheung Kwan Hin at the LSHK’s 1991 Symposium on the Teaching of Linguistics in Chinese Communities. This problem, and the possible solutions to it, were discussed at a workshop held at the City Polytechnic of Hong Kong in 1992. Subsequently a working party chaired by Dr. Cheung set out to devise a scheme which would serve a variety of functions. As well as teaching and research, the system needed to be practical for computer applications, thus ruling out the popular Yale system which requires diacritics not available on the standard keyboard or as ASCII characters. The new system was adopted by LSHK and first presented at the 4th International Conference on Cantonese and other Yue Dialects in December 1993. A *JyutPing* handbook and glossary was published by the Society in 1997. *JyutPing* has proved to be a flexible and versatile system: for example, users are at liberty to use or omit tone markings according to the purposes for which it is used. We hope that this book will contribute to the promotion of *JyutPing* and greater standardization of usage which will facilitate research on Cantonese.

We would like to thank our reviewers for their thorough critical commentaries on the contributions, and the audiences, both within and outside the LSHK, whose feedback has contributed to the development of these papers. We are also grateful for the support which the Society’s publication programme has received from the Freemason’s Fund for East Asian Studies.

Stephen Matthews
University of Hong Kong
1.1 Introduction: Standard Cantonese tone categories

Among the southern Chinese dialect families Yue is noted for having a large number of tones. The devoicing of voiced obstruent initials during the Ancient Chinese period neatly split the Cantonese tone system into upper (Yin) and lower (Yang) registers which thus still preserve the Ancient Chinese distinction. Phonetic descriptions of standard Cantonese have typically recognized nine tone categories but only six or seven basic tones: the High, Mid, and Mid-Low tones on morphosyllables ending in the stop consonants \(-p\), \(-t\), \(-k\) have usually been treated as more or less similar to the High, Mid, and Mid-Low level tones that occur on open morphosyllables and morphosyllables closed by the nasal consonants \(-m\), \(-n\), \(-ŋ\) (cf. Cheung Y-s. 1969:82, 106; Yuan 1983:181; Zeng 1986:xiii; Zee 1991:48). Whether the system comprises six or seven tones depends on whether or not the speaker uses only the High Level tone or both the High Level and High Falling tones. Table 1 below presents the Cantonese tone categories with their traditional English and Chinese names and numbers and the tone contours as represented by Chao tone letters and illustrated by lexical examples with their English glosses. The tone values assigned to the contours are those given by Chao (1947:24) for the Guangzhou variety.

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1.2 Hong Kong and Guangzhou tone contour systems

An implicit assumption underlying descriptions of Cantonese tones is that the Guangzhou tone contour system is identical to the Hong Kong system. While this is generally true, the two systems differ in at least one respect, i.e., how Guangzhou and Hong Kong speakers use the two contours of High Level ˥˥˥ and High Falling ˥˧ which have split the Yin-ping category into Upper and Lower divisions. Zeng (1986:xiii) has observed that "Cantonese spoken in Hong Kong prefers High Level. High Falling is usually heard in Guangdong Cantonese". While Zeng's statement is certainly true as far as it goes, in fact High Falling and High Level occur in both varieties. However, variation in the social distribution as well as in the functional relationship of the two tones now distinguishes the two speech communities. As a result, the status and description of the two tones have differed among Cantonese linguists as Lin (1994:87) has noted in his literature review.

1.3 Relationship of High Level and High Falling tones in Guangzhou

The lexical distribution of the High Level and High Falling tone contours in standard Cantonese has been conditioned by two factors. The first is tonal environment with the High Falling tone contour assimilating to High Level when it occurs before another High Falling or High Level tone (Chao 1947:26). The second factor is word-class membership as established by Zong (1964) in his very comprehensive investigation into the relationship of these two tones. High Level generally occurs on concrete nouns as a so-called pǐn-jūn 變音 'changed tone' discussed further below; High Falling, which is usually considered to be the basic tone, occurs on abstract nouns and other word classes, such as verbs, stative verbs, classifiers, etc. Tonal assimilation and derivation through tone change are two different linguistic processes which both yield the High Level tone contour.

In the course of my acoustic study of the Cantonese tones I have worked with two Guangzhou speakers for whom the High Falling tone contour which has a long, steep fall (I would describe it as ˥˧ or ˥˨) stands in sharp, unmistakable contrast to the High Level tone contour. In a recording session with one of my Guangzhou subjects, a retired professor of Cantonese linguistics who was consciously aware of the difference in the lexical distribution of the two tone contours, she precisely contrasted them and drew my attention to how and why they were different. The other Guangzhou speaker, a male postgraduate student in physics about 35 years of age, knew nothing of linguistics, yet he also distinguished between the High Falling and High Level tones in a generally systematic fashion. Working with just two speakers obviously has its limitations, yet I believe
my observations generally concur with the traditional description of this tone. Further, subsequent analysis of recordings made with two speakers, one aged 43 from Guangzhou and the other aged 49 from Hong Kong (the speaker was born in China but grew up in Hong Kong from about age 3) has produced similar findings for both these high tones.

1.4 High Level and High Falling tones in Hong Kong

How these two tones have developed in Hong Kong is an interesting sociolinguistic question but we still lack a detailed answer. Following up on Zong’s analysis, Y-s. Cheung (1969) claimed that the same distinction between High Falling and High Level described for Guangzhou generally applied to Hong Kong as well. His article made no explicit statement about the speaker(s) he had consulted, and one assumes that he based his research on his own speech. In a recent personal communication (May 1996) he stated that he distinguishes between High Level and High Falling tones. In his 1972 grammar of Hong Kong Cantonese H-n. Cheung (1972:6) stated that the High Level and High Falling tones had already become two independent tone categories. He described in some detail findings from Y-s. Cheung’s study, and his acceptance of them suggests that he must have made the same tonal contrasts in his own speech. In Hong Kong in May 1996 the author recorded H-n. Cheung with the WINCECIL program (described below) and found that he does indeed contrast the High Level and High Falling tones. The group of speakers Fok worked with in her 1974 acoustic study on Hong Kong Cantonese tones had both High Level and High Falling tone contours. For example, her Figures 4, 16, 19, and 20 (pp. 141, 150, 153, 154, respectively) include sharply falling Yin-ping tone contours (to which I would assign the Chao tone letter value ˥1 or ˥2) for both male and female speakers, and one of her female subjects represented by Figure 15 (p. 149) had a relatively level Yin-ping tone contour of ˥5. Both Lau (1977) and Kwan (1990) systematically distinguished the two tones in their Hong Kong Cantonese-English dictionaries. However, at some point in time the High Falling tone began losing favor among some Hong Kong speakers with High Level replacing it. Zee (1991:48) in his phonetic sketch of Hong Kong Cantonese listed High Level as the basic lexical tone and referred to the High Falling as its variant which only occurs on certain utterance-final particles.

My own acoustic work on Hong Kong Cantonese has been with six speakers who were born and raised in Hong Kong, and none of them distinguish between the High Falling and High Level tone contours. Four speakers seem to have only High Level, while two speakers have both High Falling and High Level. One of these speakers may use High Falling before
pause but High Level elsewhere; the other speaker uses the two tones in random variation. On the basis of Cantonese-English dictionaries which recognized the two tones in their romanization systems and on my very limited acoustic analysis of one Hong Kong speaker who distinguishes between both tones, I believe there are other speakers in Hong Kong who do the same. Furthermore, on the basis of previous studies of Hong Kong Cantonese, such as Cheung (1969) and Yu (1979), there can be no question that at an earlier period speakers in both Hong Kong and Guangzhou used the two tones in the same way. However, eventually the two communities began to diverge. It is my impression that a good portion of the Hong Kong Cantonese-speaking population under (at least) age 50 no longer distinguishes between High Falling and High Level but uses only the High Level tone contour. However, the sociolinguistic situation is complex: some speakers use the two tone contours in free variation, some use them in certain syntactic environments, and some speakers semantically contrast them just as do Guangzhou speakers.

1.5 Loss of High Falling tone contour in Cantonese dialects

In a recent acoustic study measuring the tone contours of five Guangzhou speakers, Shi (1993:3) found that four speakers had the High Falling tone contour (which he described as \(\acute{\n}\)) but one had the High Level tone contour. In a very interesting study into the sociolinguistic distribution of the High Falling and High Level tone contours in Guangzhou Cantonese, Lin (1987, 1994) examined their use in the speech of 19 subjects whose ages ranged from 14 to 65. He found that his older subjects over age 35 consistently assigned High Level to concrete nouns and High Falling to words belonging to other classes. A few of his younger subjects, however, either used only High Level or both High Level and Falling in variation with High Level favored. Lin also noted that in the Cantonese spoken in Shenzhen, Siuhing, and Macao High Level has already replaced High Falling (he made no reference to Hong Kong). He concluded that Guangzhou is also headed in the same direction of replacing High Falling with High Level.

1.6 Tonal divergence between Hong Kong and Guangzhou

That the Hong Kong and Guangzhou varieties of Cantonese differ in such particular aspects as tone contours should not come as a surprise to us. On the one hand, Cantonese speakers from Guangzhou (and other cities and towns of Guangdong and Guangxi) have been emigrating to Hong Kong from the start of its founding as a British colony, and many Cantonese speakers from Hong Kong have been returning to Guangdong to visit their
relatives, study, and do business, etc.; the combination of heavy cross-
border traffic with the continuous arrival of Cantonese-speaking emigrants
has insured that the Hong Kong and Guangzhou varieties have not
diverged far from each other. On the other hand, however, each
community's unique combination of historical, political, social, and
linguistic factors have determined that Hong Kong and Guangzhou have
been traveling down relatively separate and distinctively different roads of
development; these factors have also been shaping their respective forms of
Cantonese.

2.1 Variation in descriptions of Cantonese tone values

Not every scholar has agreed with the tone values given for some tone
categories in Table 1. For example, while it is generally agreed that the
contour of Mid-Low Rising (Yang-shang) is indeed low and rising, its tone
value has varied: Chao (1947:24) and Zee (1991:47) assigned the mid-low
to mid tone letter 23 to the contour, but Yuan (1983:185) and Zeng
(1986:xiii) both described it as low to mid, 13. A somewhat different set
of tone values has been given by Yue-Hashimoto (1972:92) who
represented some of the contours as slightly higher than in Table 1 above;
in particular, she claimed that Mid-Low Rising has a mid-low to mid-high
rising contour of 24, Mid Level (Yin-qu) has a mid-high level contour of
44, and Mid-Low Level (Yang-qu) has a mid level contour of 33. She
also recognized that Mid-Low Falling (Yang-ping) has two variant
contours, mid-low falling to low 21 and mid-low level 22.

Most published sources have agreed that the High Rising (Yin-shang)
tone has a contour of mid rising to high or 35. However, both Zee
(1991:48) and Shi (1993:3) have described this contour as starting at mid-
low and rising to mid-high or 42. Recently, Kei et al (1996) in an acoustic
study of 56 Hong Kong speakers established that this contour does indeed
start at mid-low but rises to high and is best represented with Chao tone
letter 25. My own tone contour measurements to be presented below
provide additional evidence in support of this contour of mid-low rising to
high.

Contrary to the statement by Zeng (1986:xiii) that "words ending in p,
t, k are always spoken in level tones," the contours associated with the
three stopped (Ru-sheng) tone categories tend to be falling as can be seen
from Figures 2c, 3, 4, and 5 in the Appendix. Yue-Hashimoto (1972:93)
has also observed that the contours are falling. The stopped tone contours
included in Fok's 1974 study (Figures 6, 9, 15, 16, 17, 19, pages 142, 143,
149, 150, 151, 152, 153]) show varying degrees of fall.
2.2 Tone values of two *pin-jêm* 變 音 'changed tones'

In addition to the six basic tones in Guangzhou Cantonese as indicated in Table 1 above, there are the two so-called *pin-jêm* 變 音 'changed tones', High Level and High Rising, which function in word derivation and carry the meaning "that familiar thing (or person, less frequently action) one often speaks of" (Chao 1947:34). The High Level or High Rising *pin-jêm* replaces the original tone on the morphosyllable and changes its meaning. Following the practice established by Chao, I indicate modification by the High Level or High Rising *pin-jêm* by attaching to the end of the morphosyllable a raised circle or asterisk, respectively. In this study two address terms were used to elicit the High Level and High Rising *pin-jêm*, viz., *ar-jê:* 阿姨 'auntie' and *ar-jê:* 阿二 'Number Two servant'. In the first item the Mid-Low Falling tone contour ordinarily occurs on the morphosyllable *jê:* 姊 'mother's younger sister' but in the address term it becomes High Level. The root of the second item *jê:* 二 'two' usually takes the Mid-Low Level tone contour but in the address term it becomes High Rising.

For those speakers who do not distinguish between High Falling and High Level but have only High Level, this tone contour occurs on morphosyllables belonging to the Yin-ping category in Table 1 as well as on morphosyllables belonging to other tone categories which have acquired it through word derivation. For those speakers who do distinguish between High Level and High Falling, then the High Level *pin-jêm* (Gao-sheng bian-diao 高升變調) corresponds to the Upper Yin-ping tone category in Table 1 and is not limited to morphosyllables belonging to Yin-ping.

Chao described the tone value of the High Level *pin-jêm* as 155 but attributed two tone values to the High Rising *pin-jêm*, viz., 425 and 135, which depended upon whether the morphosyllable's original tone was one of the three low (Yang) tones which had a starting point of 2 or the Mid Level (Yin-qu) with a starting point of 3; e.g., 相 [sɔːŋ133] 'appearance' was said to have the mid to high rising *pin-jêm* of 135 as in 照相 [tʃiːw133 sɔːŋ135] 'to take a photograph', while 上 [sɔːŋ122] was said to have the mid-low to high rising *pin-jêm* of 425 as in 和上 [wɔːŋ sɔːŋ125] 'monk'. However, Chao also pointed out that speakers did not always keep this difference but also used 425 on morphosyllables with Mid Level as their basic tone.

Yue-Hashimoto (1972:93) has stated that the High Level *pin-jêm* is "similar to the Yin-ping [High Level] tone, 155" and that the High Rising *pin-jêm* "is similar to the Yin-shang [High Rising] tone." The latter statement implies that the High Rising and the High Rising *pin-jêm* tone contours are both 135. However, as we will see below, the High Rising
tone contour is exactly the same as the High Rising pīn-jī ōn tone contour on morphosyllables belonging to the Mid Level (Yin-qu), Mid-Low Rising (Yang-shang), Mid-Low Level (Yang-qi), and Mid-Low Falling (Yang-ping) tone categories — both are /25.

Apparently following Yuan (1983:187), Zeng has described the "tone pitch" of the High Level pīn-jī ōn as being "slightly higher than High Falling", and the tone value of the High Rising pīn-jī ōn as "a little higher than Middle Rising" [= High Rising in terminology used here] which he represented as /35. This impressionistic description suggests that the highest points of the two pīn-jī ōn tone contours are systematically higher than those of the regular High Falling/High Level and High Rising tone contours. We will return to this point in the discussion below.

3.1 Cantonese tone values and fundamental frequency

There are essentially two methods available to us for resolving the question of the values of the Cantonese tone contours: The first is for the analyst to have extremely sensitive ears with which he or she can reliably perceive and discriminate tone contours. The second and more objective method is to use a pitch extractor or a computerized form of one which can produce on the computer screen a measurable visual display of fundamental frequency, the acoustic correlate of lexical tone.

All human vocal tracts conform to the same basic model regardless of the sex or ethnicity of the speaker (cf. Catford 1982:21-23). But as we know, voices vary tremendously in their pitch and quality. In comparing tone contours of the same speaker or of different speakers, we must bear in mind that several specific factors affect fundamental frequency (the number of complete openings and closings of the vocal cords). Among these factors are the size of the vocal cords and the vocal tract, tension of the vocal cords, and volume of air-flow from the lungs, to name three (Ladefoged 1993:251).

First, fundamental frequency varies considerably among men, women, and children; in general most women and children have higher voices than most men because their smaller vocal tracts which include shorter vocal cords produce higher frequencies. As a result, tone contours of most women and children tend to be higher than those of most men. Second, a speaker does not pronounce a word with the same fundamental frequencies on every occasion of its utterance, because the tension of the vocal cords and the volume of expelled air differ from one time to another. Consequently, varying tone contours can be associated with the same word. Third, the speaker's emotional states of anger, excitement, relaxation, etc. can significantly raise or lower fundamental frequency by
increasing or decreasing the tension of the vocal cords and the volume of air expelled from the lungs. However, in spite of all these physical variables that influence fundamental frequency, all speakers of the same tone language still preserve the general shapes of their language's tone contours and the relative distances that separate them, and in so doing they are able to maintain the intelligibility of their utterances for their hearers.

3.2 Acoustic analysis of tone contours with WINCECIL

The computerized spectrographic program WINCECIL (the acronym stands for Computerized Extraction of Components of Intonation in Language for Windows) was designed by the Summer Institute of Linguistics to provide the linguist with a relatively convenient and accurate procedure for measuring fundamental frequency. WINCECIL produces a linear display on the computer screen that corresponds to changes over time in the fundamental frequency of the speaker's voice. Any point along the line can be measured in units of hertz (Hz). In the present study WINCECIL has been applied to the analysis of Hong Kong Cantonese tone contours. Four speakers, two females and two males who were born and raised in Hong Kong and whose ages ranged from 25 to 49, served as the main subjects for this study; a third male speaker also contributed some tone contours. The two female subjects, HKF1 and HKF2, were 49 and 36 years of age, respectively; male subject HKM1 was about 25 years of age, HKM2 was 28, and HKM3 was 36.

Figures 1 through 7 which are collected in the Appendix present the fundamental frequency displays produced by the WINCECIL program for these five subjects. WINCECIL was used to analyze recorded speech samples which had been made with a tape recorder and the WINCECIL program itself. Included in the list of Chinese characters was a series of words on the same syllable ji: but varying in tone (the ji:-syllable tone paradigm has been presented as Table 1). Reading from the list of Chinese characters, the subjects pronounced each lexical item three times in citation form with neutral expression.

3.3 Comparison of tone contours

The tone contours given in Figures 1 through 7 are not based on averages of fundamental frequencies but are the actual computer displays generated from particular utterances of the speakers. I regard these tone contours as being generally representative of their respective tone categories. The comparison of two or more contours belonging to the same tone category and produced by the same speaker or by different speakers clearly shows that they can vary in Hz values, although the general shape of the contour
tends to remain relatively constant. Even when the speaker is repeating the same word with neutral expression, tone contours still differ in their Hz values. The speaker may be subconsciously aiming at a fundamental frequency target but is not always able to hit it (s/he may overshoot or undershoot). This makes the comparison of tone contours a difficult task, but the difficulty can be overcome to some extent by collecting a number of tokens of contours from the same tone category and identifying the general Hz range within which they occur. We then find a good correspondence in the Hz values of contours belonging to the same tone category.

3.4 Structure of tone contours

The linear movement of a tone contour sequentially includes its (1) onset or beginning point, (2) a fall or dip and/or (3) a rise to its maximum point or peak which then also becomes the endpoint, and for some contours (4) a fall to the endpoint (in some cases this final fall in the contour may correspond to a glottal stop). A dip is lower than an onset, but a peak may be lower than an onset and vice versa. To facilitate the analysis and comparison of tone contours for the same subject and across subjects, we can divide the contour into three sections of initial, medial, and final; the onset and dip occur within the initial, the peak in the medial, and the endpoint in the final sections. However, the correspondence between the three sections and the three or four major points of the contour must depend on the actual shape of a particular contour. The Hz values of contour onsets and peaks for eight tone categories (High Level, Mid-Low Falling, High Rising, Mid-Low Rising, Mid Level, Mid-Low Level, High Level pin-jēm, and High Rising pin-jēm) have been listed in Table 2. Inspection of the contour displays shows that the initial part of their shapes may be relatively simple in which case the contour directly rises or falls from its onset. For example, in Figure 2a.4 for Speaker HKF1 the Mid-Low Rising (Yang-shang) tone contour on jī: 'ear' starts at 185.0 Hz and then directly rises to its peak of 237.2 Hz.

A contour may also be complex with the initial part of the contour falling after the onset, then rising, and then falling again. For example, in Figure 2a.2 for Speaker HKF1 the Mid-Low Falling tone contour on jī: 'suspicious' begins with an onset of 186.6 Hz and then rises to a peak of 206.3 Hz before it falls quite low to its endpoint of 143.1 Hz. Most of the contours for the five subjects belong to the complex type. For some contours the onset may be followed by one or more relatively small rises or falls, and then the contour makes a large rise or fall; in such cases, the small changes in Hz values are ignored in favor of the major rise or fall. For example, in Figure 2a.6 for Speaker HKF1 the Mid-Low Level tone
Table 2. Onsets and peaks (in Hz) of Cantonese tone contours for five Hong Kong speakers (from Figures 2a, 2c, 3, 4, 5, 7).

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Onset</th>
<th>Peak</th>
<th>Onset</th>
<th>Peak</th>
<th>Onset</th>
<th>Peak</th>
<th>Onset</th>
<th>Peak</th>
<th>Onset</th>
<th>Peak</th>
<th>Onset</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKF1</td>
<td>253.0</td>
<td>293.2</td>
<td>186.6</td>
<td>206.3</td>
<td>201.2</td>
<td>299.9</td>
<td>185.0</td>
<td>237.2</td>
<td>228.3</td>
<td>242.8</td>
<td>201.6</td>
<td>223.1</td>
</tr>
<tr>
<td>HKF2</td>
<td>250.0</td>
<td>292.3</td>
<td>223.0</td>
<td>231.9</td>
<td>222.5</td>
<td>285.2</td>
<td>211.6</td>
<td>251.1</td>
<td>245.4</td>
<td>267.4</td>
<td>228.4</td>
<td>234.3</td>
</tr>
<tr>
<td>HKM1</td>
<td>181.0</td>
<td>193.1</td>
<td>120.3</td>
<td>126.4</td>
<td>122.6</td>
<td>194.6</td>
<td>114.5</td>
<td>157.5</td>
<td>155.5</td>
<td>154.2</td>
<td>139.4</td>
<td>135.6</td>
</tr>
<tr>
<td>HKM2</td>
<td>152.1</td>
<td>169.1</td>
<td>123.4</td>
<td>120.5</td>
<td>121.5</td>
<td>179.0</td>
<td>119.0</td>
<td>139.5</td>
<td>136.3</td>
<td>134.6</td>
<td>122.0</td>
<td>118.5</td>
</tr>
<tr>
<td>HKM3</td>
<td>195.0</td>
<td>219.9</td>
<td>155.8</td>
<td>149.6</td>
<td>147.3</td>
<td>218.0</td>
<td>145.8</td>
<td>199.3</td>
<td>187.0</td>
<td>176.4</td>
<td>166.5</td>
<td>153.1</td>
</tr>
</tbody>
</table>

- Tone Categories:
  1. High Level Tone
  2. Mid-Low Falling Tone
  3. High Rising Tone
  4. Mid-Low Rising Tone
  5. Mid Level Tone
  6. Mid-Low Level Tone
  7. High Level Tone
  8. High Rising Tone
  9. High Level Tone
  10. High Rising Tone

- Speaker Codes:
  HKF: Hong Kong Female
  HKM: Hong Kong Male

- Tone Colors:
  Ying-ping diao - 阴平调, Yellow
  Yang-ping diao - 阳平调, Yellow
  Yin-shang diao - 阴上调, Orange
  Yang-shang diao - 阳上调, Orange
  Yin-qu diao - 阴去调, Green
  Yang-qu diao - 阳去调, Green
  Gao-ping bian-diao - 高平变调, Cyan
  Gao-sheng bian-diao - 高升变调, Cyan
contour on ɔː ʰ 'two' starts at 201.8 Hz, falls to 200.6 Hz, rises to 202.4 Hz, falls again to 200.5 Hz, and then rises to its peak of 223.1 Hz. These small changes between the onset and the peak have been disregarded in recording Hz values in the tables.

4.0 Correspondence between F0 and Chao tone letters

Within certain limits the Chao tone letter notation has served linguists well as a handy tool for representing the general shapes of contours in tone languages, such as Cantonese and other varieties of Chinese. Obviously, with only five subdivisions of the speaker's F0 (fundamental frequency) range permitted by the tone letter system, one cannot demand fine accuracy from these symbols. We must accept that the underlying five-point scale is a flexible one; each of the five subdivisions corresponds to a band of Hz values that may expand or contract. For Cantonese the peaks of the High Level, High Rising, High Rising Changed, and High Stopped tone contours set the upper limit of the speaker’s contour range, while the endpoint of the Mid-Low Falling tone contour marks the lower limit of the contour range (endpoints for the Mid-Low Falling tone contour have been listed in Table 6). The other tone contours then fall within this broad range. For example, as we can see from Figures 2a.3, 2c.10, 6b.3, and 6b.4 for Speaker HKF1 the upper range for the High Rising and High Rising pin-jêm tone contour lies between the peak of 286.1 Hz on sɔː ʰ ʰ 'think' and the peak of 301.1 Hz on ɔː ʰ ʰ in a:-jiː ʰ ʰ 阿 二 'Number Two (servant)'; in Figures 2a.1, 2c.9, and 6b.4 the peaks of the High Level and High Level pin-jêm tone contours range between 278.1 Hz on kêj in sɔː ʰ ʰ-kêj 相機 'camera' and 306.7 Hz on jìː in ar-jîː ʰ ʰ 阿 姨 'auntie'; however, in Figure 2b.7a the highest peak of 317.2 Hz occurs with the High Stopped tone contour on jêk 益 'benefit'.

4.1 High Level and High Falling tone contours

As stated above, the Hong Kong speakers consulted for this acoustic study do not distinguish between High Level and High Falling tone contours; four speakers use only High Level on all words belonging to the Yin-ping tone category regardless of its word class, and one speaker uses both High Level and High Falling in random variation. Nonetheless, I believe there are some speakers in Hong Kong who do make semantic contrasts between these two tone contours just as Guangzhou speakers do. However, since I have not been able to locate and record such speakers from Hong Kong, I have included material from one Guangzhou speaker in order to illustrate the semantic contrast between the High Level and High Falling tone contours.
Figure 1a clearly illustrates the contrastive use of the two tone contours by Speaker GZF1, who is from Guangzhou and about 65 years of age: in Figure 1a.1 the High Falling tone contour with its unmistakable steep drop occurs on the verb pòw 煲 'to cook in a pot' in the short clause pòw fān 煲 飯 'to cook rice in a pot'; in Figure 1a.2 the High Level pin-jēm tone contour with its flat w-shape remains high throughout its duration on the concrete noun pòw 煲 'a pot' in the compound noun fān-pòw 飯煲 'rice-cooker'. In another pair of contrastive examples (the tone contours are not included in the Appendix) this speaker used the High Falling tone contour on the stative verb hāi̯g 香 'fragrant' in the noun hāi̯g-mēj 香味 'fragrance, sweet smell' but the High Level pin-jēm tone contour on hāi̯g which functions as a concrete noun in mēn-hāi̯g 蚊香 'mosquito coil'.

Figure 1b presents the tone contour displays of two grammatically contrasting but homophonic pairs of words belonging to the Yin-ping category for Speaker HKF2. She uses the High Level tone contour without regard to word class; there is no tonal contrast between the concrete noun sām 衣 'clothes' and the numeral sām 三 'three' or the concrete noun tshōn 蔥 'onion' and the verb tshōn 冲 'to wash'; all items take the High Level tone contour.

In the speech of Speaker HKM2 the High Falling and High Level tone contours occur in random variation without regard to word-class membership. In Figures 1c.1-4 we observe that he used both tones on the same concrete nouns: sèm and sēm 心 'heart' and sām and sān 'mountain'. He also said both pòw and pòw 煲 (tone contours not given) and stated there was no difference in their meaning; for this speaker they are simply two variant forms of the same word functioning as both a noun and a verb meaning 'pot' and 'to cook in a pot'. His variable use of the two tones is rather like this writer's variable pronunciation of apricot as either [e-pʰɻə-kʰəɻ] or [æ-pʰɻə-kʰəɻ]; the variation in pronunciation does not correspond to any difference in meaning nor does it correlate with the formality of the speech situation.

Inspection of the contours associated with the High Level tone in Figures 1, 2a, 3, 4, 5, and 7 indicate that the contour can actually take a range of shapes that include a plateau, flattened w or u, flattened s turned horizontally, and hump shape. Three of the Hong Kong speakers have similar hump-shaped contours on jī 衣 'clothes'.

4.2 High Level pin-jēm

The contours labeled High Level pin-jēm in Figures 1a, 2c, 3, 4, 5, and 7 closely resemble the contours of the regular High Level tone, and I conclude that for these Hong Kong speakers who do not distinguish
between High Level and High Falling tones there is no significant difference between the so-called level tones in either the shape or height of their contours. Table 3 compares the peak values of the High Level and High Level *pin-jēm* tone contours for the five Hong Kong speakers. While these values occur within the same general range, at the same time we observe that the peak of the High Level tone contour is higher than that of the High Level *pin-jēm* tone contour for two speakers but the reverse occurs for three speakers.

4.3 High Rising tone contour: a re-evaluation

Table 1 includes one Chao tone letter value which does not accurately represent its corresponding tone contour, namely, 135, although it has been traditionally used in almost all descriptions of Cantonese tones to represent the High Rising tone contour. On the basis of my F0 measurements, I believe that the High Rising tone contour is more appropriately symbolized by tone letter 425 which indicates that the contour starts at mid-low and rises to high. Matthews and Yip (1994:22) is the only published work with a description of Cantonese tones in which attention is drawn to the fact that both the High Rising and Mid-Low Rising tone contours have similar onsets (they referenced an unpublished acoustic study by Zee), and they would apparently agree that the High Rising tone contour is 425. One purpose of the present study is to provide acoustic evidence to verify unequivocally that the value of the High Rising tone contour is indeed 425.

To see that this is the case let us compare the Hz values of the onsets for the Mid-Low Falling, High Rising, Mid-Low Rising, Mid Level, and Mid-Low Level tone contours. Table 2 lists these values for tone contours on the corresponding morphosyllables of *jī* 'suspicious', *ji*: 椅 'chair', *jī*: 耳 'ear', *jī*: 二 'two', and *jī* 意 'idea' for four speakers and *sēnj* 常 'often', *sēnj* 想 'think', *khej* 佢 'he, she', *sēnj* 相 'appearance', and *sēnj* 尚 'not yet' for one speaker. If High Rising were to begin at mid-point 3 as does Mid Level, then the corresponding Hz values of both tone contours should be about the same. However, from our comparison we find that for all five subjects the onset values of Mid Level are higher than the onset values of High Rising (Yin-shang) and the series of Mid-Low (Yang) tones; as a result, the initial section of the High Rising tone contour more closely resembles the initial parts of the Mid-Low Falling, Mid-Low Rising, and Mid-Low Level tone contours than it does the initial part of the Mid Level tone contour. However, as mentioned above, very often an onset is followed by a dip, and for the High Rising tone contour its low dip and following rise appear to be more important to its identity than its onset. Table 3 lists the dip values of the High Rising (HR), High Rising *pin-jēm*
HRC, and Mid-Low Rising (MLR) tone contours. In comparing these values, we note that the dip values of all three rising tones for each speaker correspond closely and that they occur within the speaker’s mid-low range: HKF1: HR 201.2 Hz, HRC 198.4 Hz, MLR 185.0 Hz; HKF2: HR 206.6 Hz, HRC 204.8 Hz, LR 208.2 Hz; HKM1: HR 121.6 Hz, HRC 127.9 Hz, MLR 114.5 Hz; HKM2: HR 113.6 Hz, HRC 114.2 Hz, MLR 109.4 Hz; HKM3: HR 136.0 Hz, HRC 142.6 Hz, MLR 145.8 Hz.

As for the tone letter value of the High Rising tone contour’s peak, comparison of the Hz values for peaks of the High Level (HL) tone contour with those of the High Rising (HR) tone contour in Table 2 shows that they tend to be fairly close for each speaker: HKF1: HL 293.2 Hz and HR 299.9 Hz; HKF2: HL 292.3 Hz and HR 285.2 Hz; HKM1: HL 193.1 Hz and HR 194.6 Hz; HKM2: HL 169.1 Hz and HR 179.0 Hz; HKM3: HL 219.9 Hz and HR 218.0 Hz. If we represent the peak of the High Level tone contour with tone value 5, then we must use the same tone value for the peak of the High Rising tone contour. We thus have a tone letter value of 425 for the High Rising tone contour.

4.4 Confirmation of 425 from other studies on Cantonese tones

In the most recent study Kei et al (1996) measured the tone contours of 56 Hong Kong speakers with the Visipitch. Results from their study (p. 18) indicate that both the Mid-Low Rising and High Rising tone contours start at about the same mid-low point but the first rises to mid and the second to high; they conclude that the Mid-Low Rising tone contour is best represented as 423 and the High Rising tone contour as 425. Previously published acoustic studies of Cantonese tones have produced measurements of fundamental frequency which could have led to the same conclusion that the High Rising tone contour is 425, but for whatever reason the investigators chose to interpret the contour in the traditional way as 435. For example, Yue-Hashimoto (1972:122-125) listed the fundamental frequency onsets and dips for a series of Cantonese morphosyllables which she herself had pronounced and then measured. Table 4 below lists averaged values of onsets and dips of her tone contours on morphosyllables from the relevant High (Yin) and Mid-Low (Yang) tone categories.
<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Dip Peak</th>
<th>Dip Peak</th>
<th>Dip Peak</th>
<th>Dip Peak</th>
<th>Dip Peak</th>
<th>Dip Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>135.8 199.3</td>
<td>140.2 142.6 216.1</td>
<td>136.0 218.0</td>
<td>223.6 243.5</td>
<td>219.9</td>
<td>7</td>
<td>219.9</td>
</tr>
<tr>
<td>190.4 139.5</td>
<td>113.6 117.9 170.3</td>
<td>114.2 173.3</td>
<td>173.3</td>
<td>169.1</td>
<td>5</td>
<td>169.1</td>
</tr>
<tr>
<td>114.5 157.5</td>
<td>191.6 194.6 184.8 183.9</td>
<td>121.7</td>
<td>176.3</td>
<td>176.3</td>
<td>191.1</td>
<td>4</td>
</tr>
<tr>
<td>191.6 277.9</td>
<td>66.2</td>
<td>64.1</td>
<td>64.1</td>
<td>66.2</td>
<td>66.2</td>
<td>66.2</td>
</tr>
<tr>
<td>220.1 260.9</td>
<td>210.1 188.4 217.3 217.3</td>
<td>240.8 240.8</td>
<td>240.8</td>
<td>240.8</td>
<td>240.8</td>
<td>240.8</td>
</tr>
<tr>
<td>208.2 251.1</td>
<td>202.4</td>
<td>202.4</td>
<td>202.4</td>
<td>202.4</td>
<td>202.4</td>
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<tr>
<td>183.0 237.2</td>
<td>180.3 286.1</td>
<td>180.3</td>
<td>286.1</td>
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<tr>
<td>201.2 299.9</td>
<td>197.3 290.8</td>
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<td>290.8</td>
<td>290.8</td>
<td>290.8</td>
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</tr>
<tr>
<td>306.7 393.2</td>
<td>306.7</td>
<td>306.7</td>
<td>306.7</td>
<td>306.7</td>
<td>306.7</td>
<td>306.7</td>
</tr>
</tbody>
</table>

Table 3: Comparison of peaks of High Level and High-Low Level FM and tone contours (values in Hz).
Table 4. Yue-Hashimoto's averaged F0 onsets and dips of tone contours for five tone categories (1972:122-124).

<table>
<thead>
<tr>
<th>Tone Contour</th>
<th>F0 Onset</th>
<th>F0 Dip</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Mid-Low Falling</td>
<td>腰平</td>
<td>235.7 Hz</td>
</tr>
<tr>
<td>3. High Rising</td>
<td>陰上</td>
<td>242.0</td>
</tr>
<tr>
<td>4. Mid-Low Rising</td>
<td>陽上</td>
<td>247.5</td>
</tr>
<tr>
<td>5. Mid Level</td>
<td>陰去</td>
<td>269.6</td>
</tr>
<tr>
<td>6. Mid-Low Level</td>
<td>腰去</td>
<td>252.9</td>
</tr>
</tbody>
</table>

We observe the average F0 onset of 242.0 Hz for the High Rising tone contour is significantly lower than the average F0 onset of 269.6 Hz for the Mid Level tone contour which has traditionally been represented with a Chao tone letter value of 33 (but 44 by Yue-Hashimoto 1972:92). If High Rising were to begin at the same mid-level point as Mid Level, then its F0 onset would need to be much higher in order to put it in the neighborhood of 270 Hz. The average value of 242.0 Hz for High Rising falls well within the range of the average F0 onset values of the other Mid-Low (Yang) tone contours whose onsets have been represented as mid-low or 2: cf. Mid-Low Falling with 235.7 Hz, Mid-Low Rising with 247.5 Hz, and Mid-Low Level with 252.9 Hz. We also note the very close dip values of High Rising and Mid-Low Rising tones, 237.5 Hz and 239.3 Hz, respectively, which correspond with measurements from the present study. Although Yue-Hashimoto's onset values are higher than those of the two female speakers in this study, yet the relative distances separating contours of tone categories closely correspond among the three female speakers.

Vance (1977:96) reanalyzed Yue-Hashimoto's fundamental frequency data for the purpose of deciding whether Chao or Yue-Hashimoto had been more accurate in representing Cantonese tone values with Chao tone letters. His conversion of Yue-Hashimoto's average F0 values to the Chao 5-point scale for the tone contours are listed in Table 5 below:

Table 5. Conversion of Yue-Hashimoto's average F0 values to 5-point scale (Vance 1977:96).

<table>
<thead>
<tr>
<th>Tone Category</th>
<th>Tone Value on 5-point Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. High Falling</td>
<td>下陰平</td>
</tr>
<tr>
<td>2. Mid-Low Falling</td>
<td>腰平 5.0 - 3.2</td>
</tr>
<tr>
<td>3. High Rising</td>
<td>陰上 1.9 - 1.0</td>
</tr>
<tr>
<td>4. Mid-Low Rising</td>
<td>陽上 2.4 - 4.4</td>
</tr>
<tr>
<td>5. Mid Level</td>
<td>陰去 2.2 - 3.1</td>
</tr>
<tr>
<td>6. Mid-Low Level</td>
<td>腰去 3.3 - 2.8</td>
</tr>
</tbody>
</table>
In Vance's analysis the High Rising tone contour begins at 2.4 which lies well below the Mid Level tone contour's starting point of 3.3 but is just above the Mid-Low Rising tone contour's starting point of 2.2. Vance concluded that "Chao's tone-letter description [of Cantonese] reflects F0 more accurately" than Yue-Hashimoto's.

Fok (1974) presented the results of her detailed acoustic study of Cantonese tones and reproduced the tone contours of five subjects (her Figures 15 through 19, pp. 149-153). Comparison of the starting points of the contour displays associated with the High Rising and Mid Level tones indicates that High Rising begins below Mid Level and in the same general vicinity of the other Mid-Low (Yang) tones.

Shi (1993) measured the fundamental frequencies of five Guangzhou speakers and then converted these values to the five-point scale. According to his findings, the High Rising tone contour begins quite low at 1.5 which is the same starting point as the Mid-Low Falling tone contour (by comparison Shi recognized that the Mid Level tone contour begins at 2.5 but represented it with Chao tone letter 133 in the traditional way). He represented the High Rising tone contour in tone letter notation as 424 just as Zee (1991:47) has also done. Although I am happy to see that these two researchers have recognized the mid-low onset/dip for the High Rising tone contour, my own findings (Bao 1997, Bauer and Benedict 1997) indicate that the peak/endpoint is high. However, I can understand why they have described it as 4; I have noticed that sometimes the peak/endpoint of the High Rising tone contour does not always extend to the upper limit of the speaker's F0 range but may terminate at a point between mid and high. At this time I cannot offer a completely satisfactory explanation for why the High Rising tone's peak/endpoint seems to vary between mid-high and high; however, I suspect it may result from the influence of neighboring tone contours. I have noticed that when said in isolation words with High Rising tone typically have a high peak/endpoint, but sometimes when they are preceded or followed by another tone contour the peak/endpoint may reach only to mid-high.

Despite these acoustic measurements that show High Rising (Yin-shang) tone starts below Mid Level (Yin-qu) and at about the same value as Mid-Low Rising, High Rising is still being represented with Chao tone letter 135 in descriptions of Cantonese tones in such recent excellent publications as a Cantonese language textbook (Zhi 1992:4) and a comprehensive study of Cantonese phonology, grammar, and lexicon (Li et al 1995:29). It is the view of this writer that it is high time for Cantonese linguists to reassess the value of the High Rising tone contour and accept that it is most accurately
represented as 425. At the same time, the tone value of the High Rising *pin-jēm* contour should also be considered in relation to that of the regular High Rising tone, so that their homophony can be clearly recognized and unambiguously represented with the same tone letter value of 425.

4.5 High Rising *pin-jēm* 響音 'changed tone'

We can observe the change from the original Mid-Low Level tone contour on *ji:* 二 'two' to the High Rising *pin-jēm* tone contour in the vocative address term *ar-ji:* 阿 二 'Number Two (servant)' which was elicited from four subjects (Figures 2c.10, 3.10, 4.10, 5.10). In addition to this item, the High Rising *pin-jēm* also occurred in the address term *ar-tshěn* 阿陳 'Chen!' (derived from an original Mid-Low Falling tone on *tshēn*) which was elicited from Speaker HKF1 (Figure 6b.3) and in *sēn-kēj 相機 'camera' (derived from an original Mid Level tone on *sēn*) which was elicited from Speakers HKF1 (Figure 6b.4) and HKM3 (Figure 7.10). Comparison of High Rising *pin-jēm* tone contours with regular High Rising tone contours establishes that they are exactly the same. Table 3 lists the dip and peak values of High Rising, High Rising *pin-jēm*, and Mid-Low Rising tone contours. In section 4.3 above we compared the dip values of these three rising tone contours and observed that they occur within the same mid-low range. The same is true for the other words with High Rising *pin-jēm*. Although the basic tone contour on *sēn* 相 'photograph' is mid 433, the High Rising *pin-jēm* (HRC) tone contour on *sēn* in the compound noun *sēn-kēj 相機 'camera' is not 435 but 425, the same as the High Rising (HR) tone contour on *sēn* 想 'think' as indicated by the fairly close correspondence in their dip values: HKF1: HR 180.3 Hz, HRC 202.4 Hz; HKM3: HR 136.0 Hz, HRC 142.6 Hz. These values all occur within the speakers' mid-low range.

Comparison of peaks for the High Rising (HR) and High Rising Changed (HRC) tone contours shows they extend into the same high range for each subject: HKF1: HR 299.9 Hz and HRC 301.1 Hz; HKF2: HR 285.2 Hz and HRC 283.8 Hz; HKM1: HR 194.6 Hz and HRC 184.3 Hz; HKM2: HR 179.0 Hz and HRC 170.3 Hz; HKM3: HR 218.0 Hz and HRC 216.1 Hz.

The tone value for the peak of the High Rising *pin-jēm* tone is also 5.

When asked if the High Rising and High Rising *pin-jēm* contours are the same or different, all subjects state they are the same. On the basis of measurements of the tone contours, we can reliably conclude that the High Rising and High Rising *pin-jēm* contours are indeed identical.
4.6 Mid-Low Falling: J21, J22, or J11?

In most descriptions of Cantonese tones (e.g., Yuan 1960:183; Yue-Hashimoto 1972:92; H-N. Cheung 1972:5; Gao 1984:7; Zee 1991:47; and Matthews and Yip 1994:23), there is general agreement that the contour of the Mid-Low Falling (Yang-ping) tone falls from mid-low to low and is symbolized as J21. Matthews and Yip (1994:23) have pointed out that as this tone contour falls into the speaker's lower F0 range it may be accompanied by creakiness (produced by the vocal cords slowly vibrating at one end) in some speakers, typically males. Some scholars have also recognized a variant low level tone contour, but they have disagreed about the height of its tone value which varies between J22 and J11. Table 6 below lists the onsets, peaks, and endpoints of Mid-Low Falling tone contours on morphosyllables ŋí: 疑 'suspicious' and saiŋ 常 'often' from Figures 2a, 3, 4, 5, and 7.

Table 6. Onsets, peaks, and endpoints (in Hz) for contours of Mid-Low Falling tone 阳平调 (Yang-ping diao) for five Hong Kong speakers.

<table>
<thead>
<tr>
<th>Speaker:</th>
<th>Onset</th>
<th>Peak</th>
<th>Endpoint</th>
<th>Peak-Endpoint Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKF1</td>
<td>186.6 Hz</td>
<td>206.3 Hz</td>
<td>143.1 Hz</td>
<td>63.0 Hz</td>
</tr>
<tr>
<td>HKF2</td>
<td>223.0</td>
<td>231.9</td>
<td>184.9</td>
<td>47.0</td>
</tr>
<tr>
<td>HKM1</td>
<td>120.3</td>
<td>126.4</td>
<td>97.1</td>
<td>29.3</td>
</tr>
<tr>
<td>HKM2</td>
<td>123.4</td>
<td>120.5</td>
<td>94.3</td>
<td>26.2</td>
</tr>
<tr>
<td>HKM3</td>
<td>155.8</td>
<td>149.6</td>
<td>94.8</td>
<td>54.8</td>
</tr>
</tbody>
</table>

The Hz values in the table (and the contours themselves) indicate the endpoints of Mid-Low Falling tone contours may fall fairly low in relation to onsets and peaks: two female speakers and one male speaker have long, steeply falling contours. For Speakers HKM1 and HKM2 onsets and peaks are already quite low, so the fall of the endpoints is not as great. Variation in the extent of the contour's fall has probably led to variant tone values: a tone contour with a shallow fall would be perceived as low and relatively level.

4.7 Mid-Low Rising: L13 or L23?

It has already been pointed out above that some scholars have described the value of the Mid-Low Rising (Yang-shang) tone with Chao tone letter L13. However, my measurements of tone contours tentatively suggest to me that L23 more accurately represents the value of this tone contour for some speakers. The endpoint of the Mid-Low Falling (Yang-ping) tone contour marks the bottom of the scale with a tone value of 1. If the Mid-Low Rising tone contour starts in the low range, then the Hz value of its
onset/dip should be close to the endpoint of the Mid-Low Falling tone. Table 7 below lists endpoints of contours for the Mid-Low Falling tone, onsets or dips (whichever are lower) of contours for the Mid-Low Rising and Mid-Low Level tones, and the differences between these values.

Table 7. Comparison of endpoints and onsets of contours for three Mid-Low (Yang) tone categories across five Hong Kong speakers.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Endpoint</th>
<th>Onset/Dip</th>
<th>Difference</th>
<th>Onset/Dip Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKF1</td>
<td>143.1 Hz</td>
<td>185.0 Hz</td>
<td>41.9 Hz</td>
<td>200.5 Hz</td>
</tr>
<tr>
<td>HKF2</td>
<td>184.9</td>
<td>208.2</td>
<td>23.3</td>
<td>228.4</td>
</tr>
<tr>
<td>HKM1</td>
<td>97.1</td>
<td>114.5</td>
<td>17.4</td>
<td>135.6</td>
</tr>
<tr>
<td>HKM2</td>
<td>94.3</td>
<td>109.4</td>
<td>15.1</td>
<td>117.4</td>
</tr>
<tr>
<td>HKM3</td>
<td>94.8</td>
<td>145.8</td>
<td>51.0</td>
<td>152.1</td>
</tr>
</tbody>
</table>

Comparison of these three sets of values indicates that endpoints of the Mid-Low Falling tone contours fall below the onsets or dips of the Mid-Low Rising and Mid-Low Level tone contours for all speakers. We note that the differences between the Mid-Low Falling tone contour endpoints and the Mid-Low Rising tone contour onsets/dips vary from 51 Hz for Speaker HKM3 to 15.1 Hz for HKM2. Given that neither Mid-Low Rising or Mid-Low Level onsets/dips closely correspond to Mid-Low Falling endpoints, I believe that 423 rather than 413 is the more accurate tone value for the Mid-Low Rising tone.

4.8 Mid-Low Level

As noted above, Mid-Low Level tone is given Chao tone letter 422. Table 8 below lists the Hz values of onsets, peaks, and endpoints associated with Mid-Low Level tone contours from Figures 2a, 3, 4, 5, and 7.

Table 8. Comparison of onsets, peaks, and endpoints of contours for Mid-Low Level tone 陽去調 (Yang-qu-diao) for five Hong Kong speakers.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Onset</th>
<th>Peak/Dip</th>
<th>Endpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKF1</td>
<td>201.6 Hz</td>
<td>223.1 Hz</td>
<td>208.4 Hz</td>
</tr>
<tr>
<td>HKF2</td>
<td>228.4</td>
<td>234.3</td>
<td>227.4</td>
</tr>
<tr>
<td>HKM1</td>
<td>139.4</td>
<td>135.6</td>
<td>127.5</td>
</tr>
<tr>
<td>HKM2</td>
<td>122.0</td>
<td>111.7</td>
<td>117.2</td>
</tr>
<tr>
<td>HKM3</td>
<td>166.5</td>
<td>152.1</td>
<td>144.0</td>
</tr>
</tbody>
</table>
Comparison of these sets of values for Mid-Low Level tone contours across the five speakers indicates that endpoints tend to be lower than onsets or peaks for four of the five speakers. A distinctive characteristic of the Mid-Low Level tone contour is the gradual fall toward its end.

4.9 Stopped Tone Contours

Traditionally, morphosyllables ending in the stop consonants \(-p, -t, -k\) have been collected together in the Ru-sheng tone category. In most Chinese dialects such as Cantonese which preserve these ancient endings the height of the tone contour corresponds to the historical distinction between voiceless and voiced initial consonants of morphosyllables in the standard language, with those in the two Upper (Yin) categories descended from voiceless initials and those in the Lower (Yang) category from voiced initials. As already mentioned in the introduction, the correspondence in the heights of the High Stopped, Mid Stopped, and Mid-Low Stopped tone contours with those of the High Level, Mid Level, and Mid-Low Level tone contours, respectively, has traditionally been recognized in descriptions of Cantonese tones. In Cantonese the distribution of morphosyllables associated with standard Chinese characters as their reading pronunciations in the three Ru-sheng categories is conditioned by vowel length: morphosyllables with short vowels occur with the High (shang Yin-ru) and Mid-Low (Yang-ru) tones, while standard morphosyllables with long vowels occur with the Mid (xia Yin-ru) and Mid-Low (Yang-ru) tones. However, morphosyllables from the colloquial stratum can occur with all three tones, regardless of their vowel length. Although the stopped tone contours are shorter in duration than the corresponding level tone contours (durations of tone contours in milliseconds are listed under the corresponding contour displays in the Appendix), they are still tones, nonetheless. Lau (1977:xiv) has incorrectly stated that these tone categories which he referred to as High Clipped, Middle Clipped and Low Clipped were not really tones but "clipped sounds".

Inspection of the stopped tone contours in the Appendix indicates that the contours generally take rising-falling shapes for the four speakers although the extent of the rise and fall varies among tone categories and speakers. Table 9 below lists the onsets, peaks, and endpoints of contours associated with the three stopped tone categories and the three corresponding level tone categories. In comparing the Hz values of the contours across the two sets of tone categories, we observe that the overall
<table>
<thead>
<tr>
<th>Tone Category</th>
<th>Speaker: Onset Peak End</th>
<th>Onset Peak End</th>
<th>Onset Peak End</th>
<th>Onset Peak End</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. High Level</td>
<td>HKF1 253.0 293.2 283.2 295.1 317.2 309.5 228.3 242.8 237.5 220.8 259.1 247.0 201.6 223.1 208.4 212.3 227.0 206.5</td>
<td>HKF2 250.0 292.3 275.3 267.7 289.7 264.5 245.4 267.4 248.0 234.7 255.7 233.1 228.4 234.3 227.4 222.4 228.8 223.6</td>
<td>HKM1 181.0 193.1 180.5 157.4 182.4 168.4 155.5 154.2 153.2 149.8 150.2 142.3 139.4 135.6 127.5 142.8 145.0 124.4</td>
<td>HKM2 152.1 169.1 163.9 160.5 172.7 169.3 136.3 134.6 129.4 145.5 136.3 137.3 122.0 118.5 117.2 126.0 125.8 118.9</td>
</tr>
</tbody>
</table>
heights of the tone contours generally occur within similar frequency ranges.

5. Conclusion

This paper has presented four principal observations from the acoustic analysis of Cantonese tone contours: First, the five Hong Kong speakers in this study do not distinguish between the High Level (shang Yin-ping) and High Falling (xia Yin-ping) tone contours; four speakers appear to have lost the High Falling tone contour and only use the High Level tone contour in the citation form of words, while one subject has High Falling in free variation with High Level. Second, the High Rising (Yin-shang) tone contour is not 135 as has been indicated in almost all published sources on standard Cantonese but is actually 25; its contour begins at a mid-low point (which is the same as for the Mid-Low Rising tone contour) and rises to high. Third, the contour of the High Rising pin-jêm on all morphosyllables of any tone category begins at a mid-low point and rises to high, i.e., 25, and is virtually identical to the regular High Rising tone contour. And fourth, the Chao tone letter value of the Mid-Low Rising (Yang-shang) tone contour is 23 and not 13.

I will end with one final point. Even though it is now claimed that the High Rising and High Rising pin-jêm contours are identical, their descriptions in the 1940s provide us with evidence that they were different at that time: both Benedict (1942:27) and Chao (1947:24) described the High Rising tone contour as starting at a mid point and rising to high or 135, and the High Rising pin-jêm tone (termed Mid Rising tone by Benedict) as starting at a mid-low point and rising to high or 25. However, Chao (1947:34-35) also had observed that for some words which belong to the Mid Level (Yin-qu) tone category and had a rising contour as the product of the pin-jêwu morphological process there were two variant tone contours: (1) mid to high 135, and (2) mid-low to high 25. In regard to the perception of the tones, Benedict noted that both the High Rising and High Rising pin-jêm were easily confused because their starting points were fairly close together. Speakers and listeners must have decided that the fine difference at the beginning of the two tone contours was not significant and disregarded it. This would then have led to the merger of the High Rising and High Rising pin-jêm contours. At any rate, given the past difference and variation in these two tone contours and their present identity, one is led to the conclusion that at some time in the past 50 years or so the difference between the High Rising and High Rising pin-jêm tone contours became neutralized so that they both merged to 25. This paper suggests
that future descriptions of the Cantonese tone contours should catch up with this important development.

Author's Note: This paper was written before the publication of Bauer and Benedict (1997) and Bao (1998); Chapter 2 of the 1997 study analyzed in detail the tonal systems of Hong Kong and Guangzhou Cantonese, while Chapter 3 and Bao (1998) described phonetic variation between the High Falling and High Level tone contours of Hong Kong speakers.

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Appendix, Cantonese Tone Contour Displays

Figure 1a. Speaker GZF1 semantically contrasts High Falling and High Level Changed tone contours.

Figure 1b. Speaker HKF2 uses only the High Level tone contour on all words belonging to the Yin-ping tone category regardless of their grammatical function.

Figure 1c. Speaker HKM2 uses both High Falling and High Level tone contours in free variation with no semantic distinction between them.
Figure 2a. Tone contours on open syllable ickets for Speaker HKF1, a 49-year-old female born and raised in Hong Kong.
Figure 2b. Tone contours on stopped syllables for Speaker HKF1, a 49-year-old female born and raised in Hong Kong.

Figure 2c. Contours for High Level Changed Tone and High Rising Changed Tone on open syllable ji; originally with Low Falling and Low Level Tones, respectively, for Speaker HKF1, a 49-year-old female born and raised in Hong Kong. (Vertical line through contour indicates approximate end of first syllable and beginning of second).
Figure 3. Tone contours for Speaker HKF2, a 36-year-old female born and raised in Hong Kong.
Figure 4. Tone contours for Speaker HKM1, a male about 25 years of age born and raised in Hong Kong.
Figure 5. Tone contours for Speaker HKM2, a 28-year-old male born and raised in Hong Kong.
Figure 6a. Comparison of Low Rising and High Rising tone contours for Speaker HKF2.

Figure 6b. Comparison of High Rising and High Rising Changed tone contours for Speaker HKF1.
Figure 7. Tone contours on *sαŋ* for Speaker HKM3, a 36-year-old male born and raised in Hong Kong. For better comparability tone contours on *sǎn* 間 'extinguish' and *khōy* 佢 'he, she' have been substituted for *sαŋ* 商 'merchant' and *sαŋ* 上 'ascend'.
ON THE ‘INVERTED’ DOUBLE OBJECT CONSTRUCTION

SZE-WING TANG

1. Introduction
It has long been observed by the traditional Chinese grammarians and Chinese dialectologists that the indirect object can follow the direct object without any dative marker in Cantonese. This ‘inverted’ word order of double object constructions has been taken to be one of the major syntactic characteristics of Cantonese. In this paper, I examine the classification of verbs used in the dative constructions in Hong Kong Cantonese and prepare an account where I relate the word order of double object constructions to the thematic properties of the dative verbs. I argue that the ‘inverted’ double object construction is only possible with the verbs that assign a Goal thematic role to the indirect object. In particular, I argue that the ‘inversion’ structure is derived from the prepositional dative construction with a null dative marker under certain conditions. I provide phonological evidence to support this analysis. I also argue that typological variation with respect to the word order of double object construction is the result of lexical and thematic variation.

This paper is organized as follows. Section 2 examines the classification of dative verbs in Cantonese. In section 3, I discuss the thematic properties of dative verbs and their relation to the dative constructions. In section 4, I argue that the so-called ‘inversion’ structure should be treated on a par with the prepositional dative construction. I then propose that the ‘inversion’ structure is derived from prepositional dative construction with a null dative marker and present phonological and syntactic evidence in support of this hypothesis. Typological variation will be investigated in section 5.

2. Dative verbs and their classification
2.1. The patterns of dative construction in Cantonese
The so-called dative constructions typically consist of a direct object (DO) and an indirect object (IO). Since Cantonese does not mark these two objects morphologically to signal the grammatical function they have in the sentence, such function is generally expressed by the word order in which the two objects surface and by the use of the dative markers. The meaning of the objects also helps distinguish which NP is the direct object and which one is the indirect object. The one which refers to an inanimate object is generally interpreted

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1 Cantonese romanizations here follow the Linguistic Society of Hong Kong Cantonese Romanization Scheme. Tones are represented as follows: 1: high level, 2: high rising, 3: mid level, 4: low falling, 5: low rising and 6: low level. The following abbreviations are used in giving glosses for Cantonese examples: Cl: classifier, Dat: dative marker, Exp: experiential aspect marker, Mod: modifier marker; Part: particle, Perf: perfective aspect marker. 3sg: third person singular pronoun.
as the direct object while the one which refers to an animate object is usually interpreted as the indirect object. In this paper, I will focus on the three patterns of dative constructions in Cantonese shown in (1).

(1) a. PDC: V DO dative marker IO  
b. DOC: V IO DO  
c. IDOC: V DO IO

(1a) is the prepositional dative construction (PDC). The structure in (1b) is the so-called double object construction (DOC) in which the direct object follows the indirect object. The structure in (1c) is the ‘inverted’ double object construction (IDOC) where the direct object precedes the indirect object without any intervening dative marker. In the next subsection, I will classify the dative verbs with respect to these three patterns of dative constructions and further explore the characteristics of double object constructions in Cantonese drawing from the insights of earlier studies.

2.2. Toward a classification of dative verbs
Though many Cantonese verbs can take both a direct and an indirect object, they display very different properties with respect to the patterns of dative construction illustrated in (1). In this section, I present a classification of these verbs and argue that they can be classified in five different groups on the basis of their syntactic and thematic properties.

2.2.1. The ‘give’ verbs
This type of verbs includes verbs such as: bei² ‘to give’, sing² ‘to give (as a present)’, sung³ ‘to give (a present)’, and zoeng² ‘to award’. What is common of all the verbs in this group is that the interpretation of the indirect object is that it is the intended possessor of the direct object. In general, these verbs allow the PDC and IDOC patterns. DOC is possible, but it is not too natural.

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2 The definitions of ‘direct object’ and ‘indirect object’ here follow Huang (1959). Interestingly, when both the direct object and the indirect object are animate without any dative marker, such as (i), the interpretation is ambiguous, although some speakers still consider the reading where Siu-Ming is the direct object and Ling-Ling is the indirect object to be the salient one.

(i) Ngo² bei²-zo² Siu²-ming⁴ Ling⁴-ling².
   I give-Perf Siu-Ming Ling-Ling
   'I gave Siu-Ming to Ling-Ling.' or 'I gave Siu-Ming Ling-Ling.'

3 Following Lau (1972), Bennett (1978), Tang (1992), Wong (1994), Xu and Peyraube (1997) among others, I assume that the Cantonese dative markers are prepositions. There are two dative markers in this language: bei² and gwo³. Bei² is the most widely used dative marker. Comparatively, the acceptability of the dative marker gwo³ is rather low. Therefore, for the ease of presentation, I only discuss the dative marker bei² in this paper. For discussion of gwo³, see Tang 1992. Lai⁴ is also documented as a dative marker in Cantonese in Wisner 1906, Chan 1951, and Yuen 1958. Many speakers, however, consider the use of this dative marker to be unnatural in the modern Hong Kong Cantonese. I will not discuss constructions using this marker in this paper.

As the grammaticality judgment show, among the examples (2a-c), (2a) is the most natural word order. Though (2b) is grammatical, some speakers consider it to be slightly unnatural. It seems that the acceptability of (2b) and other IDOC sentences depend on semantic and phonological factors as well as on functional factors, such as the speed of speech, the heaviness of the objects, etc. Among all the verbs included in this group, the verb bei2 ‘to give’ deserves special attention. What is peculiar to this verb is that it is phonologically identical to the dative marker bei2 ‘to’. When the verb bei2 ‘to give’ is used, it contrasts with the other verbs in that IDOC seems to be the preferred pattern by some speakers who consider (3a) not as natural as (3b). In this regard, Shimizu (1972) points out that the reason why there is a preference to use (3b) instead of (3a) in sentences with the verb ‘to give’ is to avoid repetition of bei2.

Note further that the acceptability of (2c) and (3c) is subject to a number of additional restrictions. In particular, these sentences seem to be natural only in a context in which the direct object is rather heavy or is the focus of the sentence (Yuan et al 1960, Kwok 1971, Peyraube 1981, Matthews and Yip 1994). In unmarked cases, DOC with the ‘give’ verbs is not as natural as IDOC.6

2.2.2. The ‘send’ verbs
The ‘send’ verbs include, among others, the following predicates: bunl ‘to move’, daai3 ‘to bring’, dai6 ‘to hand to’, deng3 ‘to pelt’, gaau1 ‘to deliver’, gaap3 ‘to lift food with

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5According to Bruche-Schulz and Peyraube (1993), some speakers use the IDOC pattern in the context of ‘losing temper’ or ‘intimacy’. However, it seems to me that IDOC can also be used in an unmarked context.
6There are some idiom-like DOC expressions which do not have a PDC or IDOC counterpart, such as bei2 nei5 seon2sam1 ‘let you put confidence in somebody (lit. ‘to give you confidence’)’, and waan4 ngo5 cing1baak6 ‘to indemnify me for defamation (lit. ‘to return me stainless’).
chopsticks’, *gei*³ ‘to send’, *lau*⁴ ‘to reserve’, *ling*¹ ‘to carry with hand’, *lo*² ‘to bring’, *maai*⁵ ‘to sell’, *paai*³ ‘to deliver’, *tek*³ ‘to kick’, and *wui*⁶ ‘to remit’. With this type of verb, the direct object is transferred from somewhere to the indirect object.

(4) a. Siu²-ming⁴ *gei*³-*zo*² *jat*¹-*fung*¹ seon³ bei² ngo⁵. (PDC)
   Siu-Ming send-Perf one-Cl letter Dat I
   ‘Siu-Ming sent a letter to me.’

b. */?Siu²-ming⁴ *gei*³-*zo*² *jat*¹-*fung*¹ seon³ ngo⁵.
   Siu-Ming send-Perf one-Cl letter I
   (IDOC)

c. *Siu²-ming⁴ *gei*³-*zo*² ngo⁵ *jat*¹-*fung*¹ seon³.
   Siu-Ming send-Perf I one-Cl letter
   ‘Siu-Ming sent me a letter.’
   (DOC)

These verbs allow the PDC pattern, as in (4a). In general, as (4b) illustrates, IDOC is not allowed with these verbs. All speakers consider (4c) to be ungrammatical.

2.2.3. The ‘fry’ verbs
The ‘fry’ verbs include *caau*² ‘to fry’, *jing*² ‘to photocopy’, *pai*¹ ‘to cut’, *sai*² ‘to wash’, *tong*³ ‘to iron’, *waak*⁶ ‘to draw’, *zam*¹ ‘to pour’, *zik*¹ ‘to knit’, *zing*² ‘to make’, *zok*³ ‘to compose’, and *zyu*² ‘to cook’. All these verbs are verbs of creation. The indirect object is interpreted as the beneficiary of the event expressed by the verb.

(5) a. Ling⁴ *ling*² *caau*²-*zo*² *jat*¹-*dip*⁶ coi³ bei² ngo⁵. (PDC)
   Ling-Ling fry-Perf one-Cl vegetable Dat I
   ‘Ling-Ling fried vegetable for me.’

b. */?Ling⁴ *ling*² *caau*²-*zo*² *jat*¹-*dip*⁶ coi³ ngo⁵. (IDOC)

   Ling-Ling fry-Perf one-Cl vegetable

c. *Ling⁴ *ling*² *caau*²-*zo*² ngo⁵ *jat*¹-*dip*⁶ coi³.
   Ling-Ling fry-Perf I one-Cl vegetable
   (DOC)

This type of verbs allows the PDC pattern, as in (5a). Some speakers marginally allow IDOC. For example, (5b) is quite unnatural. DOC with this kind of verb is ungrammatical, as illustrated in (5c).

2.2.4. The ‘pluck’ verbs
The ‘pluck’ verbs include *coeng*² ‘to snatch’, *gaan*² ‘to choose’, *maai*⁵ ‘to buy’, *ling*¹ ‘to take’, *lo*² ‘to get’, *tau*¹ ‘to steal’, and *zaak*⁶ ‘to pluck’. These verbs are mainly verbs of obtaining. The indirect object in PDC can be interpreted as beneficiary but it is interpreted as the source in DOC configuration.

(6) a. Ngo⁵ *zaak*⁶-*zo*² sap⁶ *jat*¹-*zi*¹ mui⁴ gwai⁶ faa¹ bei² keoi⁵. (PDC)
   I pluck-Perf eleven-Cl rose Dat 3sg
   ‘I plucked eleven roses to him/her.’

b. */?Ngo⁵ *zaak*⁶-*zo*² sap⁶ *jat*¹-*zi*¹ mui⁴ gwai⁶ faa¹ keoi⁵.
   I pluck-Perf eleven-Cl rose 3sg
   (IDOC)
As illustrated in (6a), these verbs allow PDC. The acceptability of the IDOC pattern exemplified in (6b) in general is low. Though these verbs may allow DOC, as in (6c), they give a completely different interpretation: in particular, in which the indirect object is interpreted as the source.7

2.2.5. The 'teach' verbs

Finally, this type of verbs includes ceng2 gaau3 'to inquire', gaau3 'to teach', haau2 'to test', kaau4 'to request', and man6 'to ask' etc.8 They describe the acquisition of information, communication, and the transfer of ideas. Unlike other dative verbs, the 'teach' verbs do not allow PDC or IDOC. Only the DOC pattern is grammatical.

Interestingly, if the direct object of gaau3 'to teach' is related to tricks, such as saam2 sau2 'tactic', ziu1 'trick', the three patterns PDC, IDOC as well as DOC are acceptable, as indicated in (8).

7Yuan et al (1960) point out that the indirect object in (6c) can be genitivized as a modifier of the indirect object without changing the basic meaning; if this is correct, (6c) is not a DOC.
8Cheung (1972:85) treats dong3 'consider' on a par with the 'teach' verbs. For example,

(i) Ngo5 dong3 keoi5 hou2-jan4 tim1.
    I consider 3sg good-person Part
    'I consider him/her a good fellow.'

However, unlike typical dative verbs, dong3 'consider' does not denote an action of transfer or an action of benefit. The 'consider' type verbs should be analyzed differently from the dative verbs. See Tang 1997 for detailed discussion in Mandarin Chinese.
In fact the choice of the direct object in PDC and IDOC in (8) is very restricted. It seems that it is an idiomatic usage which may be a ‘residue’ of Old Chinese.9

2.2.6. Summary
Based on the above discussion, the five types of dative verbs can be further classified as three main categories: (a) verbs that allow the PDC, IDOC as well as DOC patterns, i.e. the ‘give’ verbs, (b) verbs that only allow PDC, i.e. the ‘send’, ‘try’ and ‘pluck’ verbs; and (c) verbs that only allow DOC, i.e. the ‘teach’ verbs. With respect to the three patterns of dative constructions, then the dative verbs in Cantonese can be classified as in table (9). The classification is based on whether or not they fit into the various patterns of dative constructions discussed above.

(9) Dative constructions and dative verbs in Cantonese

<table>
<thead>
<tr>
<th></th>
<th>‘give’</th>
<th>‘send’, ‘fry’, ‘pluck’</th>
<th>‘teach’</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDC</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>IDOC</td>
<td>OK</td>
<td>*/?</td>
<td>*</td>
</tr>
<tr>
<td>DOC</td>
<td>?</td>
<td>*</td>
<td>OK</td>
</tr>
</tbody>
</table>

As shown in table (9), all dative verbs but the ‘teach’ verbs allow PDC. The occurrence of IDOC is very restricted. In general, it is limited to the ‘give’ type verbs. As for the DOC pattern with the ‘give’ verbs, its occurrence in Cantonese is restricted to those cases where the direct object is heavy or stressed. In the discussion in the next section, I will focus on IDOC in Cantonese and try to link the syntactic properties of each of these types of verb to the internal thematic structure of these dative verbs.

3. Thematic roles and dative constructions
What is clear from the discussion above is that, in general, only the ‘give’ verbs allow IDOC in Cantonese. Why are the ‘give’ verbs so special? In opposition to the rest of the verbs, the ‘give’ verbs are verbs of change of possession. Moreover, the ‘send’ verbs are verbs of sending and carrying or verbs of throwing, the ‘fry’ verbs are verbs of creation, the ‘pluck’ verbs are verbs of removing, and the ‘teach’ verbs are verbs of communication.10 Thus, it is only the ‘give’ type verbs that are verbs of change of possession. In other words, only verbs that denote a change of possession allow the IDOC pattern. The restrictions on the IDOC pattern are derived from the semantic properties of dative verbs.

Such a distinction suggests that the availability of the different patterns of dative construction in (1a–c) may be related to the thematic structure of the verbs. The thematic role assigned to the indirect object by the ‘give’ verbs is Goal. With the ‘give’ verbs, the indirect object is the intended possessor of the direct object. In contrast with this, thought the thematic role assigned to the indirect object by the ‘send’ verbs could be interpreted as Goal, these verbs are fundamentally spatial, but not possessional.11 In the dative

9 The pattern ‘teach DO dative marker IO’ can be traced back to Shangshu. See Peyraube 1988.
10 See Levin 1993 for a similar classification of verbs in English.
11 See Jackendoff 1990b:§9 for related discussions in English.
constructions, the ‘send’ verbs indicate change in location. Consequently, the thematic role assigned to the indirect object by the ‘send’ verbs should be distinguished from that assigned by the ‘give’ verbs. For ease of exposition, I will tentatively assume that the thematic role that the indirect object of the ‘send’ verbs bears is a complex role composed of Goal and Location. As for the ‘fry’ and ‘pluck’ verbs, they denote an action which can be regarded as being done for someone’s benefit. The thematic role that the indirect object of the ‘fry’ and ‘pluck’ verbs bears is best interpreted as Benefactive. The thematic role assigned by the ‘teach’ verbs to the indirect object could be analyzed as either Patient or Source. In other words, in contrast with the rest of dative verbs, the ‘give’ verbs only assign the thematic role Goal to the indirect object. In this vein, based on our observations of the grammaticality of DOC, I state the following descriptive generalization for Cantonese.

(10) An ‘inverted’ double object construction is grammatical only if the dative verb assigns only the thematic role Goal to the indirect object.

In conclusion, IDOC is acceptable in Cantonese only if the dative verbs belong to the ‘give’ type, i.e. verbs that assign only Goal to the indirect object.

4. The ‘inversion’ structure and the null dative marker hypothesis
In this section, I will first review various hypotheses of the formation of IDOC in Cantonese and point out their weaknesses. I will then present an alternative analysis of the phenomena. In particular, I will argue in favor of a null dative marker approach where IDOC is derived from PDC with a null dative marker.

Cheng (1988) proposes that IDOC and some of the DOC have different structures. In particular, she argues that IDOC with the verb bei² ‘to give’ is derived from (11a), where the verb bei² ‘to give’ will move to the upper empty V position.

(11) a. [VP [V e ]] [VP DO [V· bei² IO ]]  (IDOC in Cantonese)
b. [VP [V e ]] [VP DO [V· gei IO ]]  (DOC in Mandarin)
c. [VP [V e ]] [VP IO [V· song DO ]]  (DOC in Mandarin)

She assumes, on the other hand, that the structures of the double object construction with the verbs gei ‘to give’ and song ‘to give (a present)’ in Mandarin are represented as in (11b) and (11c) respectively. In (11c), the verb song ‘to give (a present)’ moves to the empty V position while in (11b) the V reanalyzes as V and moves to the empty V position because gei ‘to give’ does not have ‘full verbal property’. The reason why the V in (11a) cannot reanalyze as a V is due to its [+V] feature. For the sake of argumentation, let us assume that it is correct. However, in (11a-c), if, as Cheng proposes, dative verbs assign Theme to DO and Goal to IO, the question then arises: Why do the dative verbs bear the thematic hierarchy ‘Theme > Goal’ in (11a) and in (11b) but ‘Goal > Theme’ in (11c)? This analysis seems quite problematic under UTAH, the Uniformity of Theta Assignment Hypothesis (Baker 1988) widely assumed in current syntactic theory.

One way to solve this problem would be to assume that IDOC is derived from DOC by object shift: either by leftward movement of the direct object or by rightward
movement of the indirect object. Though this proposal could avoid the violation of UTAH, the problem now is how those speakers who accept IDOC can derive this ‘inversion’ structure from the ungrammatical DOC examples with the ‘send’, ‘fry’ and ‘pluck’ verbs. As pointed out by Zhan (1981:§4) and Xu and Peyraube (1997), if the assumption that IDOC is derived from DOC by means of object shift is correct, we would wrongly generate those ungrammatical IDOC examples with the ‘teach’ verbs; for instance, the asymmetry relation between (7b) and (7c). Consequently, unless we stipulate that in Cantonese grammar object shift is obligatory in DOC with the ‘send’, ‘fry’ and ‘pluck’ verbs and it is forbidden in DOC with the ‘teach’ verbs, the object shift approach is both too weak and too powerful at the same time. This approach will not be adopted in this paper.

I would like to propose that these problems can be solved if we adopt the null dative marker approach suggested by Qiao (1966), Shimizu (1972), Bennett (1978), Tang (1992), Bruche-Schulz and Peyraube (1993), Xu and Peyraube (1997), among others. According to this approach, IDOC is derived from PDC with a null dative marker. In other words, the underlying structure of IDOC will be the same as PDC, as indicated in (12) where ‘∅’ is a null dative marker.

\[
\begin{align*}
(12) & \quad a. \quad V_{[NP DO]}[PP_{[P \text{bei}^2]}[NP IO]] \\
& \quad b. \quad V_{[NP DO]}[PP_{[P \text{∅}]}[NP IO]]
\end{align*}
\]

In (12), DO and IO will be assigned thematic roles Theme and Goal respectively. In this case, the thematic hierarchy is ‘Theme > Goal’ and UTAH will not be violated. Violation of UTAH is not a problem anymore.

As I argue next, there is empirical evidence in support of analysis along these lines and in particular in support of the postulation of the null dative marker. For one thing, this empty position is ‘observable’ phonologically. In this regard, Qiao (1966:§34) reports that there is usually a pause between the direct object and the indirect object in IDOC. Consider the examples in (13). If we compare these two examples, we notice that in (13a) there is a pause (indicated by ‘/’) between the direct object g02-bun2 z16din2 ‘that dictionary’ and the indirect object Siu-Ming. In contrast with DOC in (13b), the pause in (13a) is clearer and longer. Instead of a pause, for many speakers, the last syllable of the direct object z16din2 ‘dictionary’ in (13a) can be lengthened; in this regard, (13a) thus contrasts with (13b), where lengthening of the last syllable of the indirect object Siu-Ming in (13b) is not natural.

---

12Huang and Zhan (1983) seem to suggest that IDOC is formed by postponing the indirect object. Killingley (1993) suggests that DOC is the ‘normal’ word order for Cantonese and IDOC is formed by shifting the objects. Thanks to Steve Matthews for pointing out the work by Killingley to me.

13It does not matter in the discussion whether the null dative marker is formed by deleting the phonological features in the PF component or such phonological information is already encoded in the lexical entry. Furthermore, the details of the structure of PDC and IDOC are omitted in (12). See Tang 1992, Xu and Peyraube 1997 for discussion in Cantonese in terms of Larsonian VP-shell.
The pausing and the final lengthening in (13a) suggest that the syntactic structure of (13a) and that of (13b) is different. This could be accounted for under Selkirk's (1984) Silent Demibeat Addition hypothesis. Let us suppose that IDOC contains an NP and a PP whereas DOC contains two NPs. A partial structure of (13a) and that of (13b) would be as in (14a) and (14b) respectively, where \( \emptyset \) stands for the null preposition.

(14) a. \( \ldots \) dictionary \( J_N \) NP \( [[[ \emptyset ]_P [ \text{Siu-Ming}]_N]_N]_NP \) PP

b. \( \ldots \) Siu-Ming \( J_N \) NP \( [[[ \text{Cantonese}]_N]_N]_NP \)

According to Selkirk's Silent Demibeat Addition hypothesis, a silent demibeat is added at the end of the metrical grid that is aligned with some syntactic categories.\(^{14}\) Following this hypothesis, then, since the two objects in (14a) are separated by an NP boundary and a P, two silent demibeats will be assigned to the position between dictionary and \( \text{Siu-Ming} \) in (14a), one after the NP and one after the empty P,\(^{15}\) whereas only one demibeat will be assigned to the gap between \( \text{Siu-Ming} \) and Cantonese in (14b). This is shown in the representations of metrical grid alignment in (15), where \( x \) represents a silent beat. These silent grid positions are either realized as a pause or associated with the final syllable to form final lengthening giving representation to syntactic timing.\(^{16}\) Thus, we expect to find a pause between the direct object and the indirect object in IDOC.

(15) a. \( \ldots \) dictionary \( xx \) Siu-Ming \( xx \)

b. \( \ldots \) Siu-Ming \( x \) Cantonese \( x \)

Supporting evidence for the null dative marker hypothesis comes from the fact that most speakers accept IDOC when the dative verb is \( \text{bei}^2 \) 'to give'. Since the dative marker \( \text{bei}^2 \) shares the same phonological features with the dative verb \( \text{bei}^2 \) 'to give', the strategy of using a null dative marker might be due to identity avoidance. Recall that IDOC, for example (16b), is always preferred to PDC such as (16a) to avoid phonological identity when the verb is \( \text{bei}^2 \) 'to give'.

\(^{14}\)These include (a) a word, (b) a word that is the head of a nonadjunct constituent, (c) a phrase, and (d) a daughter phrase of S. She stipulates that if a word is a phrase, it will not receive two demibeats but only one.

\(^{15}\)My analysis seems contrary to Selkirk (1984:§6.2), according to which the application of Silent Demibeat Addition is restricted to lexical categories which would seem to exclude prepositions. This is not necessary a problem. The status of prepositions is sometimes unclear. Abney (1987:§2.3) points out that prepositions straddle the line between functional and lexical categories and they could be underspecified. Fukui (1986:§2fn5) further suggests that the status of prepositions may be subject to parametric variation. I assume that prepositions are lexical categories in Cantonese.

\(^{16}\)See Selkirk 1984:§6 for detailed discussion.
(16) a. \( (?) \) Ngo\(^5 \) bei\(^2\)-zo\(^2\) jat\(^1\)-zi\(^1\) bat\(^1\) bei\(^2\) keoi\(^5\). \((=3a)\)
    
    I give-Perf one-Cl pen Dat 3sg

    ‘I gave a pen to him/her.’

b. Ngo\(^5 \) bei\(^2\)-zo\(^2\) jat\(^1\)-zi\(^1\) bat\(^1\) keoi\(^5\). \((=3b)\)
    
    I give-Perf one-Cl pen 3sg

Under the minimalist conception of language, linguistic expressions are the optimal realizations of the interface conditions at the interface levels PF and LF, where ‘optimality’ is determined by the principles of derivational economy (Chomsky 1993 et seq). Let us assume that the dative marker has to be null in order to satisfy some PF interface conditions. Suppose that the avoidance of phonological identity is one of those PF interface conditions.\(^{17}\) The derivation of (16a) is deviant since it cannot satisfy the interface conditions, typically at the PF component. If that turns out to be correct, an optimal output would be a structure in which the dative marker is null when it is required for PF convergence. One piece of evidence to show that PF convergence is the driving factor comes from the facts that, as the distance between the two phonologically identical bei\(^2\)s increases, the grammaticality of this type of example improves. This is illustrated in (17).\(^{18}\)

(17) a. Ngo\(^5 \) bei\(^2\)-zo\(^2\) bun\(^2\) jung\(^6\) Zung\(^1\)man\(^2\) sc\(^2\) ge\(^3\) jyu\(^5\)faat\(^3\) syu\(^1\) bei\(^2\) keoi\(^5\).
    
    I give-Perf Cl use Chinese write Mod grammar book Dat 3sg

    ‘I give a grammar book written in Chinese to him/her.’

b. \( (?) \) Ngo\(^5 \) bei\(^2\) bun\(^2\) syu\(^1\) bei\(^2\) keoi\(^5\).
    
    I give Cl book Dat 3sg

    ‘I give a book to him/her.’

c. \( ? \)Go\(^2\)-bun\(^2\) syu\(^1\), ngo\(^5 \) bei\(^2\)-zo\(^2\) e, bei\(^2\) keoi\(^5\).

    that-Cl book I give-Perf Dat 3sg

    ‘As for that book, I gave it to him/her.’

d. \( * \)Go\(^2\)-bun\(^2\) syu\(^1\), ngo\(^5 \) wui\(^5\) bei\(^2\) e, bei\(^2\) keoi\(^5\).

    that-Cl book I will give Dat 3sg

    ‘As for that book, I will give it to him/her’

In (17b), the two bei\(^2\)s are separated by a two syllable noun phrase. Compared with (17b), (17a) in which an aspect marker and a heavy noun phrase intervene between the two bei\(^2\)s sounds much better. (17c) and (17d) are examples of topicalization;\(^{19}\) though (17c) in which the two bei\(^2\)s are separated only by an aspect marker is still intelligible, it does not sound very natural. (17d), where the two homophonous bei\(^2\)s are adjacent to each other at PF, is bad. If the overt dative marker is replaced by a null dative marker in (17c) and in

\(^{17}\)This constraint could be some version of OCP discussed in McCarthy 1986, Yip 1988, among others.

\(^{18}\)Thanks to Moira Yip for drawing my attention to these examples.

\(^{19}\)Topicalization of the indirect object in other non-identical dative cases is possible. For example,

(i) Go\(^2\)-bun\(^2\) syu\(^1\), ngo\(^5 \) wui\(^5\) sung\(^1\) e, bei\(^2\) keoi\(^5\).

    that-Cl book I will give Dat 3sg

    ‘As for that book, I will give it to him/her’
(18) a. Go²-bun² syu¹,i, ngo⁵ bei²-zo² e₁ ə keoi⁵.
    that-Cl book I give-Perf (Dat) 3sg
    ‘As for that book, I gave it to him/her.’

b. Go²-bun² syu¹,i, ngo⁵ wui⁵ bei² e₁ ə keoi⁵.
    that-Cl book I will give (Dat) 3sg
    ‘As for that book, I will give it to him/her’

The relevant point being made here is that the violation of phonological identity is gradient depending on the distance between the two bei²'s and dative marker has to be null when the two homophonic bei²'s are too close to each other at PF. Consequently, the occurrence of the null dative marker is for PF convergence.

Evidence from quantification of saai³ further shows that the indirect object in IDOC should be a PP. Saai³ ‘all, each’ is a quantifier which requires that the element associated with it be divisible/plural (Lee 1994, Tang 1996).

(19) a. *Ngo⁵ bei²-saai³ ni¹ fung¹ seon³ [bei² keoi⁵ dei⁶]. (PDC)
    give-all this Cl letter Dat they
    ‘I have given (*all) this letter to (*all) of them.’

b. *Ngo⁵ bei²-saai³ ni¹ fung¹ seon³ [keoi³ dei⁶]. (IDOC)
    give-all this Cl letter they

c. Ngo⁵ man⁶-saai³ [keoi³ dei⁶][ni¹-di⁴ man⁶ tai⁴]. (DOC)
    ask-all they this-Cl question
    (i) ‘I have asked all of them these questions.’
    (ii) ‘I have asked them all these questions.’

In (19a) and (19b), since the direct object ni¹ fung¹ seon³ ‘this letter’ is unable to be divided into parts in that context, it cannot be associated with saai³. Even though the indirect object keoi⁵ dei⁶ ‘they’ is divisible/plural, saai³ cannot be associated with it. The unacceptability of (19a) and (19b) is due to the violation of the divisibility requirement of quantification of saai³. On the other hand, saai³ can be associated with either the indirect object or the direct object in DOC, as shown in (19c). Assuming that saai³ cannot be associated with indirect (prepositional) internal arguments (Tang 1996), these examples strongly suggest that IDOC should go with PDC such that the indirect object in IDOC is analyzed as a PP.

If the null dative marker approach is correct, the null dative marker in IDOC is an empty category, which is required by the Empty Category Principle, the ECP, to be properly governed. Recall that IDOC is unacceptable if the verb does not assign Goal to the indirect object. This seems to suggest that verbs that can assign Goal behave as a proper governor for an empty category in the dative marker position if proper government

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20I put aside the question how the effects of the ECP are derived, given that ‘government’ has been eliminated (Chomsky 1993 et seq), and continue to use the term ‘ECP’ informally in our discussion.
is defined in terms of subcategorization dependent upon thematic role assignment (Stowell 1981).\textsuperscript{21} The null dative marker has to be properly governed by a verb that subcategorizes for a Goal argument. If the null dative marker cannot be properly governed, IDOC is ungrammatical.

Suppose the above analysis is correct. Three related questions arise at this point: First, why is it only the verbs that subcategorize for a complement to which they assign Goal that can be a proper governor for the null dative marker? Second, how can we explain why some speakers may allow the IDOC pattern with the dative verbs other than the ‘give’ verbs? Third, suppose that the null dative marker is formed by phonological deletion. How is dative marker deletion related to the semantic interpretation if it is merely a phonological operation?

To answer the first question, as a tentative solution, I would like to propose that the indirect objects that do not bear Goal are not actually assigned a thematic role in the conventional sense. Let us examine the dative verbs that allow the PDC pattern, namely the ‘give’, ‘send’, ‘fry’, and ‘pluck’ verbs.\textsuperscript{22} The grammaticality test in (20)-(23) clearly shows that in contrast with the rest of the verbs, only the ‘give’ verbs are genuine ditransitive verbs that subcategorize for an indirect object. (20) in which the indirect object is missing sounds peculiar in an out-of-the-blue context. Contrary, (21), (22) and (23) where the indirect object is missing are perfectly grammatical even though they are given in isolation without any prior discourse.

\begin{align*}
(20) & \quad \text{*Ngo}^5 \text{bei}^2-zo^2 \text{jat}^1-bun^2 \text{syu}^1. \quad \text{(the ‘give’ type)} \\
& \quad \text{I give-Perf one-Cl book} \\
& \quad \text{*I gave a book.} \\
(21) & \quad \text{Siu}^2-\text{ming}^4 \text{gei}^3-zo^2 \text{jat}^1-\text{fung}^1 \text{seon}^3 \quad \text{(the ‘send’ type)} \\
& \quad \text{Siu-Ming mail-Perf one-Cl letter} \\
& \quad \text{‘Siu-Ming mailed a letter.’} \\
(22) & \quad \text{Ling}^4-\text{ling}^2 \text{caau}^2-zo^2 \text{jat}^1-\text{dip}^6 \text{coi}^3 \quad \text{(the ‘fry’ type)} \\
& \quad \text{Ling-Ling fry-Perf one-Cl vegetable} \\
& \quad \text{‘Ling-Ling fried vegetable.’} \\
(23) & \quad \text{Ngo}^5 \text{zaak}^6-zo^2 \text{sap}^6\text{jat}^1-zi^1 \text{mui}^4\text{gwai}^3\text{fai}^1 \quad \text{(the ‘pluck’ type)} \\
& \quad \text{I pluck-Perf eleven-Cl rose} \\
& \quad \text{‘I plucked eleven roses.’}
\end{align*}

Since the ditransitive verb \textit{bei}^2 ‘to give’ in (20) subcategorizes for two internal arguments, the omission of the indirect object without prior context is ungrammatical. In fact, the ‘send’, ‘fry’, and ‘pluck’ verbs are transitive verbs that only subcategorize for one complement. Hence, (21), (22) and (23) are perfect. To derive the dative constructions,

\begin{itemize}
\item \textsuperscript{21} According to Stowell (1981:§6), \(\alpha\) properly governs \(\beta\) if and only if \(\alpha\) governs \(\beta\), and \(\alpha\) is lexical, and \(\alpha\) is co-indexed with \(\beta\), in which co-indexing is defined by means of thematic role assignment.

\item \textsuperscript{22} The indirect object of the ‘teach’ verbs can be omitted, as noted by the anonymous reviewer.
\end{itemize}

(i) \quad \text{Ngo}^5 \text{gaan}^3 \text{Gwong}^2\text{dung}^1\text{wai}^2 \quad \text{‘I teach Cantonese.’}

Since the ‘teach’ verbs do not allow IDOC, they will not be considered in the discussion.
the theta-grid of those transitive verbs, such as the ‘send’, ‘fry’, and ‘pluck’ verbs, has to be expanded, for example, by Argument Augmentation, developed along the ideas in Grimshaw 1989, Larson 1988, 1990, and Jackendoff 1990a, by which thematic roles will be added to the theta-grid of the verb. If the ‘added’ indirect object is an adjunct in some sense, the null preposition cannot be properly governed and thus the IDOC pattern is not allowed.

The second question is why some speakers may allow the IDOC pattern with non-‘give’ verbs. I suppose that Goal assignment and subcategorization for complements are subject to dialectal variation: For some of the dative verbs, the transfer of possession may result in change in location or some benefactive motions. Those speakers who have a ‘liberal’ judgment may then have the possibility to allow some non-‘give’ verbs to subcategorize for two complements and to assign Goal to the indirect object. If the dative marker is null, the empty category can be properly governed and IDOC is allowed. This might explain the degree of marginality of IDOC which, as I have noted above, seems to be subject to some degree of variation.

Let us assume that the formation of the null dative marker in IDOC is merely a phonological operation. We may wonder why phonological operations affect the semantic interpretation and why they are subject to syntactic constraints such as the ECP if we assume that there are no interactions between PF and LF (Chomsky 1993). There seem to be some possible lines to solve this problem. One line of research is to assume that the ECP applies also at PF and that empty categories must be properly governed at PF (Aoun et al 1987). Another possible solution is to assume that there is a link between some level within PF and LF (Chomsky 1995: fn31). One may assume that dative marker deletion takes place in the overt syntax, but we have to explain how the outputs of this operation are subject to general conditions. An alternative possibility is that in the IDOC pattern, the null dative marker is a phonologically non-overt affix which undergoes incorporation or conflation in syntax. Under this approach, the ECP effects exhibited by the IDOC pattern may follow from conditions on movement, which seems to be a desirable approach to pursue, given that ‘government’ has been eliminated (Chomsky 1993 et seq). Due to limited space, I leave this possibility for my future research.

To sum up, I have argued that the proposal that IDOC is derived from PDC with a null dative marker is on the right track and presented empirical evidence in support of this assumption. I have also derived the constraints on the occurrence of the null dative marker from some general principles, such as the ECP and the thematic structure of the predicates. If that turns out to be the case, we need not stipulate any language particular operations to explain the ‘inverted’ dative structure in Cantonese and our analysis does not induce too much computational complexity. This should be a desirable move.

5. Typological variation: a perspective
I have argued that IDOC in Cantonese is derived from PDC with a null dative marker; further I have proposed that the null dative marker is subject to the ECP and that the empty dative marker should be properly governed by a verb that subcategorizes for a complement to which it assigns Goal. These properties would be of limited interest if they

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23I am indebted to Myriam Uribe-Etxebarria (personal communication) for this suggestion.
only applied to Cantonese. What is interesting from this phenomena is that, in fact, its scope seems to be larger than that. In what follows, I address the issue of the typological variation in the word order of double object constructions. The discussion here will be restricted to Chinese dialects.

The data discussed in the following table (24) are from Gan, Hakka, Hui, Jin, Mandarin, Min, Wu, Xiang, and Yue, the major Chinese language families. The words listed in the second column are the corresponding forms of the verb ‘to give’ in those dialects. The third column shows the acceptability of IDOC in those dialects. As the table shows, among the Chinese dialects, only Huizhou, Meixian, Leihua, Shanghainese, Changsha, and Cantonese allow IDOC.

(24) The verb give and IDOC in Chinese dialects

<table>
<thead>
<tr>
<th></th>
<th>to give</th>
<th>IDOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gan (Anyi)</td>
<td>tʰau</td>
<td>*</td>
</tr>
<tr>
<td>Hakka (Huizhou)</td>
<td>pi</td>
<td>OK</td>
</tr>
<tr>
<td>Hakka (Meixian)</td>
<td>pun</td>
<td>OK</td>
</tr>
<tr>
<td>Hui (Xinjing)</td>
<td>te</td>
<td>*</td>
</tr>
<tr>
<td>Jin (Taiyuan)</td>
<td>gei</td>
<td>*</td>
</tr>
<tr>
<td>Mandarin (Beijing)</td>
<td>gei</td>
<td>*</td>
</tr>
<tr>
<td>Min (Fuqing)</td>
<td>kʰy?</td>
<td>*</td>
</tr>
<tr>
<td>Min (Leihua)</td>
<td>pun</td>
<td>OK</td>
</tr>
<tr>
<td>Min (Taiwanese)</td>
<td>ho</td>
<td>*</td>
</tr>
<tr>
<td>Wu (Shanghainese)</td>
<td>bɔʔ</td>
<td>OK</td>
</tr>
<tr>
<td>Xiang (Changsha)</td>
<td>pa</td>
<td>OK</td>
</tr>
<tr>
<td>Yue (Cantonese)</td>
<td>bei</td>
<td>OK</td>
</tr>
</tbody>
</table>

If we study the verb ‘to give’ in those dialects carefully, the verb ‘to give’ can be classified in two different groups with respect to the grammaticality of IDOC. In particular, in those dialects that allow IDOC, the verb ‘to give’ is a ‘real’ ditransitive verb diachronically. For example, the history of bei (畀) in Cantonese can be traced back to the 14th-11th century BC (Qiu 1980), where this lexical item was used as a ditransitive verb. The verb pi in Huizhou dialect can be represented by the same character used in Cantonese (Liu 1991). It is thus highly possible that pi and bei are cognate morphemes. As for the Shanghainese verb bɔʔ, its origin is not clear, but it might be cognate with the Cantonese bei (畀) since the rhyme of this word ended in a dental-alveolar stop, *-t-, in the Archaic Chinese (Guo 1986:86) and the diachronic sound change from a dental-alveolar stop to a glottal stop, *-t>-ʔ, in Shanghainese can be supported by other examples. If the hypothesis that Shanghainese bɔʔ and Cantonese bei are cognate is correct, then

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24 Pinghua, one of the Chinese language families, will not be discussed due to insufficient information.
26 For example, bɔʔ 'nose' follows the sound change rule (*-t>-ʔ).
Shanghainese bəʔ ‘to give’ might have originated from a ditransitive verb. Moreover, Leihuia *pun* and Meixian *pun* are represented by the same character 分 (Yuan et al. 1960, Dai et al. 1994). The ditransitive usage of this word has been documented in the 6th century AD.²⁷

Summarizing, in all these dialects where IDOC is allowed, the verb ‘to give’ has a diachronic source from a ditransitive verb. Keeping this in mind, let us now consider the verb ‘to give’ in those dialects that do not allow IDOC, such as *thau* in Anyi, *te* in Xiuning, *gei* in Taiyuan and Beijing, *kʰyʔ* in Fuqing, and *ho* in Taiwanese. What all these verbs have in common is that they are historically derived from transitive verbs. For example, in Anyi and Fuqing, *thau* (訥) and *kʰyʔ* (乞) can also be used as verbs of deprivation. It has also been argued that in the northern dialects, *gei* (給) is historically derived from the transitive verb *qi* (乞) ‘to beg’, which is the same character used in Fuqing dialect (Zhang 1989). The origin of the verb *te* in Xiuning could be a transitive verb *chi* (持) whose original meaning is ‘to hold’ (Hirata 1994). As for the origin of *ho* in Taiwanese, one possibility is that *ho* and the verb ‘to beg’, such as the word *kʰyʔ* (乞) ‘to give/to beg’ used in Fuqing dialect, are cognate (Tsao and Cheng 1992).

If the hypothesis regarding the relation between the acceptability of IDOC and the source of the verb ‘to give’ is on the right track, it is only when the verb ‘to give’ is derived from a ditransitive verb historically that the IDOC pattern is allowed. This can hardly be a coincidence and consequently provides further support for an analysis along the lines I have defended in this paper.

Let us assume that in those dialects IDOC is also derived from PDC with a null dative marker, as what we have seen in Cantonese. Recall that it is ditransitive verbs that subcategorize for a complement to which they assign the thematic role Goal. In those dialects that allow IDOC, the verb ‘to give’ subcategorizes for two complements historically. If the null dative marker is subject to the ECP defined in terms of subcategorization and thematic role assignment, then the null dative marker can occur only if it can be properly governed by a verb that subcategorizes for a Goal argument. In those dialects that the verb ‘to give’ is derived from a transitive verb which does not subcategorize for a Goal argument, the occurrence of the null dative marker will cause a violation of the ECP and consequently IDOC will not be allowed.

If the analysis presented here is correct, the grammaticality of IDOC is subject to the ECP and depends on the thematic properties of the dative verbs. In regard of dialectal/typological variation, I would like to suggest that the thematic properties of the dative verbs are subject to parametrization. From a minimalist point of view, the ‘syntactic’ difference with respect to the word order of the double object constructions is reducible to a lexical and thematic difference in the nature of the dative verbs. Choice of parametric options and language variation are thus determined by the lexicon. How to make the parameter-setting precise in formal terms is not trivial, although it is not implausible. A comprehensive typological study of natural languages is necessary, but it would go beyond the scope of this paper. I only keep to an informal sketch here and leave it for future research.

²⁷The origin of pa in Changsha dialect is not clear. It could be cognate with Cantonese *bei* and Shanghainese *bəʔ*. Due to insufficient data, I leave this question open here.
6. Concluding remarks
We have seen that in Cantonese, the dative verbs that permit IDOC are those verbs that subcategorize for a complement to which they assign the thematic role Goal. This suggests that there is a close relationship between the grammaticality of IDOC and the thematic properties of the dative verbs.

I have also proposed that Cantonese IDOC is derived from PDC by using a null dative marker. The dative marker will be null to satisfy PF interface conditions, such as the avoidance of phonological identity. The occurrence of the null dative marker is subject to the ECP: the null dative marker has to be properly governed by the verb that subcategorizes for a Goal argument. This analysis accounts for a number of properties displayed by IDOC.

As research proceeds, it becomes clear that with regard to the word order of the double object constructions, the dialects/languages differ in the contents of their lexical items. Dialectal/typological variation can be reducible to lexical variation. If this is correct, language variation is reduced to variation in the properties of lexical items. Though my research project here is far from conclusive, there seems to be a promising prospect of studying cross-dialectal/typological variation in terms of syntax-morphology interface along the lines of a minimalist approach.

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Postverbal KEOI as a marker for nonasserted bounded clauses

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In Cantonese as in Mandarin the third person pronoun, in the same phonetic form, may be used with both animate and inanimate referents. When it refers to inanimate objects, it is often used in the object rather than the subject position (Chao 1968: 633, Matthews & Yip 1994:82). However even in the postverbal position, the use of the third person pronoun with inanimate referents is rather restricted. In (1-2), it would be odd for the pronoun to be interpreted as having an inanimate referent. Such oddity is not explained by verb semantics alone, since the predicates in (1-2) can take inanimate objects readily, as shown in (3-4).

(1) ngo tai-gin keoi.
1sg see 3sg
'I see him/her/??it.'

(2) jan-zyu zong-dou keoi.
careful bump-into 3sg
'Be careful not to bump into him/her/??it.'

(3) ngo tai-gin jat dou mun.
1sg see one CL door
'I see a door.'

(4) jan-zyu zong-dou zoeng toi.
careful bump-into CL table
'Be careful not to bump into the table.'

In this paper we will discuss some semantic constraints on the use of the third person pronoun ‘keoi’ in the postverbal position with inanimate referents. The account will also be extended to cover the non-referential use of the pronoun. Our target of investigation is the use of ‘keoi’ in sentences like (5):

(5) ngo soeng jau hak dou mun tung go coeng keoi/*keoidei.
1sg want paint black CL door and CL window 3sg/3pl
'I want to paint the door and the window black.'

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1 Thanks are due for the comments made by an anonymous reviewer and by Stephen Matthews on an earlier version of this paper. Any remaining errors remain the responsibility of the author.

2 Both ‘keoi’ and ‘ta’ were used in traditional Chinese from the late Tang Dynasty onward (Lu 1984); ‘keoi’, a cognate of ‘kei’ which was originally a demonstrative, was used with both animate and inanimate referents, while ‘ta’, which developed from ‘the other person’, was primarily used with animate referents.
ngo soeng taam haa A-Fai tung A-Gyun keoidei.
1sg want visit DEL A-Fai and A-Gyun 3pl
'I want to visit A-Fai and A-Gyun.'

When following a co-indexed lexical NP, "keoi" serves to intensify the object (Matthews & Yip 1994: 82). This is the case in (5) as in (6). However, only the pronoun used with animate referents inflects for plural. In fact, there are reasons to treat the instances of "keoi" in these two sentences separately. From now on, we will use KEOI to stand for the use of the third person pronoun as in (5), which is the target of our investigation.

The first constraint concerns assertedness: the minimal clause containing KEOI (hereafter KEOI-clause) cannot be asserted. Examples of asserted clauses are simple declaratives (7) and the complement clause of epistemic verbs (8). These stand in contrast with non-asserted clauses such as imperatives (9), interrogatives (10), the antecedent clause of conditionals (11) and the complement clause of deontic verbs (12).

Simple declarative
(7)    A-Fai tai-zo /-gan /-gwo bun syu (*KEOI).
   A-Fai read-PERF/PROG/EXP CL book
   'A-Fai (has) read/is reading/has once read that book.'

complement of epistemic verb
   A-Koeng know A-Fai read-finish CL book
   'A-Koeng knows that A-Fai has finished reading the book.'

imperative
(9)    jau hak dou mun KEOI.
   paint black CL door 3sg
   'Paint the door black.'

interrogative
(10)   bingko jau hak-zo dou mun KEOI a?
   who paint black-PERF CL door 3sg SFP
   'Who painted the door black?'

antecedent clause of conditional
(11)   (jygwo) nei jau hak dou mun KEOI,
   if you paint black CL door 3sg
   fong nei fuk waa zau wui hou can gaa laa.
   put this CL picture then will very match SFP SFP
   'If you paint the door black, it will go very well with this picture.'
complement of deontic verbs
(12) A-Koeng soeng A-Fai jau hak bong coeng KEOI.
    A-Koeng want A-Fai paint black CL wall
    ‘A-Koeng wants A-Fai to paint the wall black.’

Such a constraint is not found with the emphatic pronoun with human referent:

simple declarative
    A-Fai meet-PERF/PROG/EXP A-Koeng and A-Ming 3pl
    ‘A-Fai met/is meeting/has once met A-Koeng and A-Ming.’

complement of epistemic verb
    A-Gyun zi-dou A-Fai meet-PERF A-Koeng 3sg
    ‘A-Gyun knows that A-Fai met A-Koeng.’

The second constraint is about the aspectuality of the clause: KEOI-clause must be bounded. Boundedness is the property of a clause expressing a situation which is measurable on a temporal scale. We find that bounded clauses in Cantonese may compose of a ‘delimiting constituent’ (Tenny 1987), for instance a verbal particle, and a specific object NP (15); or it may combine a generic object NP and the comparative marker ‘di’(17). A clause without object NP may also be bounded as long as a secondary predicate functioning as a measure is present (18).

(15) A-Fai soeng tai bun syu (*KEOI).
    A-Fai want read CL book
    ‘A-Fai wants to read that book.’

(16) A-Fai soeng tai jyun bun syu KEOI.
    A-Fai want read finish CL book
    ‘A-Fai wants to finish reading the book.’

(17) A-Fai soeng sik siu-di jin KEOI.
    A-Fai want eat less-COMPAR cigarette
    ‘A-Fai wants to smoke less.’

(18) A-Fai soeng tau gaau KEOI.
    A-Fai want rest enough
    ‘A-Fai wants to take enough rest.’

Again, the emphatic pronoun with animate referent is not confined to bounded clauses. It can occur in unbounded clauses (as in (19) cf. (20)), in which there is no postverbal constituent to define the temporal scale to measure the situation.

    A-Fai want date A-Gyun 3sg
    ‘A-Fai wants to date A-Gyun.’
(20) A-Fai soeng joek maai A-Gyun keoi.
A-Fai want date also A-Gyun 3sg
ˈA-Fai wants to date A-Gyun also.’

1. assertedness
The proposition expressed in a simple declarative or the complement clause of an epistemic verb is asserted. KEOI is not allowed in these cases.

A-Fai read-PERF/PROG/EXP CL book
ˈA-Fai (has) read/is reading/has once read that book.’

(22)=(8) A-Koeng zi-dou A-Fai tai-juin bun syu (*KEOI).
A-Koeng know A-Fai read-finish CL book
ˈA-Koeng knows that A-Fai has finished reading the book.’

Whether a clause is asserted may be tested by its compatibility with an emphatic construction in Cantonese formed with the discontinuous pair ‘hai ... ge’, serving functions similar to the cleft construction in English (Matthews and Yip 1994 p.307).

The complement clause of an implicative verb, which is presupposed but not asserted, cannot be embedded in ‘hai ... ge’ (23). The complement clause of a deontic verb behaves like the complement clause of an implicative verb, cannot be embedded in ‘hai ... ge’ (24). On the other hand, a simple declarative and the complement clause of an epistemic verb can be embedded in ‘hai ... ge’ (25)-(26).

(23) *A-Fai hou hau-fui hai bun zau zoeng toi ge.
very regret be move away CL table SFP

(24) *A-Fai soeng hai A-Koeng bun zau zoeng toi ge.
want be move away CL table SFP

(25) hai A-Koeng bun zau zoeng toi ge.
be move away CL table SFP
‘It is A-Koeng who moved away the table.’

(26) A-Fai zi-dou hai A-Koeng bun zau zoeng toi ge.
know be move away CL table SFP
ˈA-Fai knows that it is A-Koeng who moved away the table.’

Since declarative and the complement clause of epistemic verbs both belong to epistemic modality, and the KEOI-clause (9-12) are in deontic modality, the constraint appears to be captured in terms of the epistemic-deontic distinction.

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3ˈhau-fui’ (regret) as in (22) being an evaluative predicate should be categorized under the deontic modality in Palmer (1986: 119-121).
A correlation between assertion and modality is also found in English. Matthews (1991) points out that denotic but not epistemic predicates can take infinitive or subjunctive, thus non-asserted clauses, as complement.

(27) I require/order/insist you to be there.
    you be there.

(28) *I think/know/believe you to be there.
    you be there.

On the other hand, epistemic but not deontic predicates can take finite clauses as complement. These finite clauses are all asserted clauses in these cases.

(29) I think/know/believe that he was there.
    that he’s been there.
    that he’d been there.

(30) *I require/order/insist that you were there.
    that you have been there.
    that you had been there.

While in English there is a correlation between assertedness and epistemic modality on the one hand, and nonassertedness and deontic modality on the other, the distribution of KEOI-clause is not satisfactorily explained in terms of the epistemic-deontic distinction. The occurrence of KEOI-clause in interrogatives (10) and conditionals (11) makes it clear that KEOI-clause is not licensed by deontic modality (or non-epistemic modality). In Palmer (1986), interrogative is categorized under the epistemic modality (pp. 78-81), yet he points out that in many languages, the interrogative is formally unrelated to the modal systems and semantically it is more related to discourse than modality (p.31). Like questions, conditionals are closer to epistemic rather than deontic modality since it is factuality and realness of the proposition that is in focus. More precisely, neither questions nor conditionals clearly belong to epistemic or deontic modality. Rather, what is shared across all the contexts allowing KEOI-clause is the property ‘non-assertedness’.

However, not every non-asserted clause can admit KEOI. We will move on to the aspectual constraint on the KEOI-clause.

2. boundedness
KEOI-clause finds correspondence in Mandarin BA-construction, as in (31).

4KEOI-clause and BA-clause are not co-extensive since BA-clause also covers cases with animate object NPs and those with a clause functioning as the perfectivizing expression.
(31) Xiao-Zhang xiang ba shu kan wan.
    want BA book read finish
    'Xiao Zhang wants to finish reading the book.'

Hopper and Thompson (1979) analyze BA-clause as perfective and the object of BA is highly
'affect ed'. They point out that such a perfective clause 'requires a perfectivizing expression
either a perfective particle, or a phrase or a clause specifying the conceptual boundary of the
action'. Perfectivizing expression in a KEOI-clause is manifested as a postverbal constituent,
typically a verbal particle (32). The presence of the perfectivizing expression is obligatory
(33).

(32) = (16)   A-Fai soeng tai jyun bun syu KEOI.
              A-Fai want read finish CL book
              'A-Fai wants to finish reading the book.'

(33) = (17)   *A-Fai soeng tai bun syu (*KEOI).
              A-Fai want read finish CL book
              'A-Fai wants to read the book.'

The idea of perfectivizing expression closely corresponds to the 'delimiting constituent'
discussed in Tenny (1987). In English, verbal particle, resultative predicate and dative object
can all function as delimiting constituents.

(34) Bill ate up the apple.
(35) Martha painted the door black.
(36) Jerry sent a parcel to Jill.

The notion of 'affectedness' is a property of verbs and its grammaticalization is revealed as
the 'delimitedness', roughly the perfectivity, of the clause. Tenny adopts the classic 'in an
hour' test to identify delimited clause. Translated into Cantonese, it is a test on whether a
clause is compatible with a preverbal durational adverbial. The following sentences are read
as imperatives.

(37) hai jat go zung-tau zi-noi tai jyun bun syu (KEOI).
    at one CL hour within read finish CL book
    'Finish reading the book in an hour.'

(38) hai jat go zung-tau zi-noi tai- zo bun syu (KEOI).
    at one CL hour within read-PERF CL book
    'Read the book in an hour.'

(39) *hai jat go zung-tau zi-noi tai-gwo bun syu (KEOI).
    at one CL hour within read-EXP CL book

(40) *hai jat go zung-tau zi-noi tai-gan bun syu (KEOI).
    at one CL hour within read-PROG CL book

(41) *hai jat go zung-tau zi-noi tai syu (KEOI).
at one CL hour within read CL book

It is shown in the ‘in-an-hour’ test that both the progressive marker and the experiential marker are not delimiting constituents, and thus the occurrence of KEOI is forbidden.\(^5\) Only the perfective marker is compatible with boundedness and thus it may function as a delimiting constituent.

Apart from the presence of a delimiting constituent, another feature contributing to the delimitedness of a clause is the presence of a spatially delimited object NP. Such a NP can measure out the clause since spatial delimitedness of an object NP can be translated into temporal delimitedness (Tenny 1987: 113-114).

Aspectuality of the KEOI-clause is largely accounted for by the notion of ‘delimitedness’. Yet the notion fails to account for cases like (42) in which the object NP is generic, therefore, not spatially delimitedness.

(42) A-Fai soeng A-Koeng sik siu di jin KEOI.\(^6\)
    would-like eat less COMPAR cigarette
    ‘A-Fai would like A-Koeng to smoke less.’

Generic NP is not freely allowed in the KEOI-clause. It must go with the comparative predicate. The generic NP here may be analyzed as the ‘path-object’ and the verb in combination with the comparative predicate forms a ‘route verb’ (Tenny 1994:17). In English, a sentence like (43) exemplifies a route verb with path-object:

(43) Bill climbed the ladder.

Path-objects also measures out the event described by the clause (Tenny 1994:17). But unlike the other objects in a delimited verb phrase, path-objects do not undergo change. Tenny (1994) has not discussed the possibility of generic NP as path-object. But as long as the KEOI-clause allows for generic NPs, the specificity requirement on the object NP

\(^5\)(39) is acceptable if ‘gwo’ is interpreted as ‘again’, therefore the sentence can be read as ‘Read the book again in an hour. But this meaning of ‘gwo’ is distinct from the experiential aspect.

\(^6\)‘di’ in (42) cannot be analyzed as a classifier which specifies the following noun (ie. ‘jin’ (cigarette)). If ‘di’ is a classifier in this context, it should be able to be modified by a demonstrative. In fact, these two ‘di’ can co-occur.

(i) *A-Fai soeng A-Koeng sik siu nei/go di jin KEOI.
    want eat less this/that COMPAR cigarette

(ii) A-Fai soeng A-Koeng sik siu di nei/go di jin KEOI.
    want eat less COMPAR this/that CL cigarette
imposed by ‘delimitedness’ has to be abandoned. Now we predict that a clause with non-specific object NP may also take KEOI. This is what we find in the following sentence:

(44) nei si-daan ling zau jat bun syu KEOI laa.
    2sg random bring away one CL book      SFP
    ‘You just pick any one book as you like.’

Although ‘delimitedness’ is too restrictive as an account for the distribution of KEOI, the central idea of being temporally measurable is central to the aspectuality of KEOI-clause.7 We may state (45) as an aspectual characterization of KEOI-clause:

(45) KEOI-clause must be bounded in the sense that the situation described is measurable on a temporal scale.

A secondary predicate in the form of a postverbal constituent suffices to provide a temporal scale for measuring the situation. Since the specificity requirement of object NP can be relaxed as long as the secondary predicate suffices to provide temporal measurement, we expect that clauses without objects should also be able to take KEOI, as long as the predication fulfills (45). This is what we have in (46-47) below:

(46) ngo soeng tau gau KEOI.
    1sg want rest enough
    ‘I want to take enough rest.’

(47) nei mai haam baau KEOI lo.
    2sg then cry full      SFP
    ‘You just cry as much as you like.’

In these sentences, ‘tau’ (rest) and ‘haam’ (cry) do not involve any inherent boundary.8 It is the secondary predicate ‘gau’ (enough) and ‘baau’ (full) which provide a scale of measurement. By taking (45) as an aspectual characterization of the KEOI-clause, we are able to extend our analysis to non-referential use of KEOI. This is what we have done with

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7Alternatively, we may keep the notion ‘delimitedness’ but state that the specificity requirement of the object NP does not apply if the predication involves a ‘path’.

8‘tau’ (rest) can take a temporal NP or a temporally quantified phrase as ‘object’. But ‘tau-gau’ (rest-enough) cannot.

    ngo soeng tau (*gau) ting-jat/saam jat.
    1sg want rest enough tomorrow/three day
    ‘I want to take rest tomorrow/for three days.’

Similarly, ‘ham’ (cry) can take a temporally quantified phrase as ‘object’, but ‘ham-baau’ (cry-full) cannot:

    nei mai haam (*baau) saam jat lo.
    2sg then cry full three day SFP
    ‘You may cry for three days (if you like).’
(46) and (47) in which we can see no possible referent for KEOI.

The non-referential use of the third person pronoun ‘ta’ in Mandarin often involves measurement. This is the case in the following sentences:

(48) wo yao he ta ge tong-kuai. (Chao 1968:320)
    1sg want drink 3sg CL satisfactory
    ‘I want to drink to a thorough satisfaction of it.’

(49) ni mei tian zuo ta yi pian, wo ti ni kan-kan.
    2sg every day write 3sg one piece 1sg for 2sg read-DEL
    ‘You write a piece everyday, and I’ll read it for you.’

The measurement is fixed by the classifier ‘ge’ in combination with the secondary predicate ‘tong-kuai’ (satisfactory) in (48) and the numeral phrase ‘yi-pian’ (one piece) in (48). However, measurement is not always explicitly fixed by constituent other than the third person pronoun itself:

(50) ku ta you shema yong ne?
    cry 3sg have what use SFP
    ‘What’s the use of crying over it?’

There is no secondary predicate nor other measuring phrase to fix the temporal scale of the situation. It is suggested that it is precisely the third person pronoun itself which bounds the situation. In Cantonese, we also find non-referential use of ‘keoi’ in idiomatic expressions:

(51) dung gou cong baan KEOI nam haa la.
    fix up bed board think DEL SFP
    ‘Think about it seriously.’

(52) jam sing KEOI.
    drink win
    ‘Cheers!’

(53) nei sei-zo KEOI, gam ngo dim a?
    2sg die-PERF then 1sg how SFP
    ‘If you die, how am I to live?’

It is no easy to show that KEOI-clause in these idiomatic uses are bounded since the ‘in an hour’ test cannot be applied here. But clearly these KEOI-clauses are non-asserted.

3. concluding remarks
Why does Cantonese have to mark non-asserted bounded clauses?

If we treat bounded situations as either bounded on the left or the right end, situations described in asserted clauses are all bounded since the initial point of the situation is
understood to lie before the speech time.⁹ If asserted clauses are basically bounded, it is natural to expect that nonasserted are unbounded. If such correlations are what Cantonese makes as unmarked cases, what the language needs to mark are only nonasserted bounded clauses.

To suggest that KEOI is a marker for nonasserted bounded clauses does not pre-empt its function as an emphatic pronoun for its preceding object NP. Rather it seems closer to the facts in language use that a particular form is usually assigned more than one function.

References


⁹see definition of ‘boundedness’ in Depraetere 1995.
Possessive constructions, classifiers and specificity in Cantonese

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0. Introduction

Cantonese has a number of classifier constructions (Matthews and Yip 1994, Pacioni 1994). There are a few works that describe Cantonese classifiers (Cheung 1989, Killingley 1983), but none is devoted to analysing possessive constructions and their use of the classifier. The aim of this study is to describe classifiers in possessive constructions in Cantonese, and in particular to explore the differences among the various possessive constructions. We claim that the possessive constructions involving classifiers hinge on specificity. As a result we will show that other possessive constructions, that is constructions involving GE and DI, have other roles: namely GE is an associative marker and DI is a collective marker. While possessive constructions with Classifiers, GE and DI may all imply definiteness, only the construction with classifier is both definite and specific.

The first section of the paper gives an overview of how possessives have been analysed in Cantonese, following the model used for Mandarin Chinese (cf. 1.1). We also discuss possessive constructions containing classifiers in certain other languages, to see whether there are grounds for comparing the possessive constructions with classifier in Cantonese and the so called ‘possessive classifiers’ (cf. 1.2). In the next section (cf. 1.3) we will see classifiers as described so far in the literature. The publication of Greenberg’s work on classifiers, almost a quarter of century ago in 1974, certainly had an impact on the subsequent literature. Therefore typologically oriented papers like those by Seiler, Croft, Craig and Bisang are all related to Greenberg’s paper (1974), as we shall see.

In order to illustrate the role that specificity plays in classifier possessive constructions, a sketch of this semantic phenomenon is presented (cf. 2.0). Then we deal with the Cantonese data and our discussion of them in order to support our claims (cf. 2.1). We can see how findings from recent studies in Cantonese and in child language acquisition of some semantic features support our hypothesis (cf. 2.2). The last section (2.5) attempts to outline what has been said about diachronic issues of possessive constructions involving classifiers.

1.0. Possessives

In this paper we will only focus on the possessive constructions containing a classifier from a semantic perspective, since these constructions and their semantic characteristics have not been the object of a study so far. Therefore, in this section, we will try to give an overview of some of the main issues in the literature concerning possessive NPs in Mandarin Chinese and Cantonese. Then we look at what it can be considered the common features carried by any type of possession in the literature.

This paper does not deal with the distinction between alienable vs. inalienable possession, since it is a culturally based one: that is, what is defined as inalienable in one language might be defined as alienable in another (Craig 1993, Chappell and McGregor 1995). Chappell and McGregor (1995) discuss the typology of (in)alienable possession, including
body part terms and part-whole relationship. Despite these works we still know relatively little about the syntax and semantics of possession on general.

1.1 Possessives in Mandarin Chinese and Cantonese

We shall now sketch the various possessive constructions found in Cantonese and some of the claims which have been made. Below are the principal ways of expressing possession in Cantonese:

a. possessor plus possessed, as in:

(1) ngo5 (ge3) tung4si6
I (GE) colleague(s)
‘my colleague’

b. possessor plus GE plus possessed, as in:

(2) ngo5 ge3 tung4si6
I GE colleague(s)
‘my colleague(s)’

c. possessor plus classifier plus possessed, as in:

(3) ngo5 go3 tung4si6
I CL colleague
‘my colleague’

d. possessor plus DI plus possessed, as in:

(4) ngo5 di1 tung4si6
I DI colleague(s)
‘my colleagues’

In formal Cantonese there is another possible possessive construction using DIK, the Cantonese reading for the Mandarin DE, as in:

(5) ngo5 dik1 jat1 sang1
I DIK one life
‘my whole life’ (Matthews and Yip 1994:107)

---

1 The particle GE can be omitted under certain conditions. A phonological restriction seems to operate here in order to avoid a monosyllabic possessed noun, hence: ngo5 a3-mal ‘my mother’ is acceptable, but ‘*ngo5 mal’ is not (Stonham 1998).
In Mandarin Chinese possessive expressions we only find the marker DE as in (6), the classifier construction being ungrammatical (7):

(6) wo de shu
    I DE book
    'my book'

(7) *wo ben shu
    I CL book

Tang (1990), whose account is often taken as reference when analysing possessives in Mandarin Chinese, gives the following syntactic representation for the classifier phrase (CLP):

(8) DP
    \  /
     D' \ /
     / \ CLP
       D CL'
       / \ CL NP
       / \ Num CL N
       / \ san ben shu
three classifier book
    'three books'

As shown in (1) to (7) above, the constructions described in the literature for Mandarin Chinese are differ substantially from those found in Cantonese. In Mandarin Chinese the possessive constructions are of the type: NP DE N, where DE is the possessive marker (cf. 6), therefore this is what can be compared to the syntactic structure of NP CL N, or NP GE N in Cantonese. According to Tang’s analysis (1990) the classifier is the head of a classifier phrase, the NP in this representation is a classifier complement while the numeral phrase (that is, the numeral plus the classifier) occupies the specifier position. Under this analysis a classifier in Mandarin Chinese is treated as a complex of a numeral plus a classifier. Tang (1990) describes the variable positions of the genitive phrases in terms of movement, that is, in the case of orders like [Determiner - Genitive Phrase - CL - N] it is argued that there is obligatory classifier to determiner movement.

According to Au-Yeung (1997), in Cantonese when a rigid designator like a possessor occupies the SpecC position the possessor can check its [+definite] feature through the Spec-head checking mechanism with the head CL. The feature [+def] is picked up by the lexical classifier from the head CL turning the NP and the classifier definite. This is the representation given by Au-Yeung (1997, 190):
The Cantonese possessive construction involving GE is represented as in the following:

```
(9)  CLP
    / \  
  [+d] Siuming CL'
    / \  
  [+d]CL NP
  bun syu

'Siuming's book'
```

That is, the possessed Noun undergoes head movement to the CL position:

"Due to the lexical government on empty CL⁰, there is an N-to-CL⁰ movement [10]. Since the possessor is a definite in nature, the head CL⁰ agrees with its SpecCL and is specified as [+d] value. After movement N picks up the [+d] value and hence the definite reading of the whole nominal." (Au-Yeung 1997, 194).

While accounting for the definiteness of the possessive phrase, Au-Yeung's analysis does not appear to capture the singular/plural neutrality of the GE constructions: that is, the analysis does not predict the semantic difference between the classifier and GE constructions whereby that with GE is always ambiguous with respect to the singular/plural distinction (see 2.3 below).

1.2. Possessive Constructions and Classifiers

Possessive classifiers have been considered a rather rare phenomenon, primarily to be found in Oceanic (Micronesian) and Native American languages. Their main characteristic is to make explicit the kind of relationship between the possessee and possessor (Lichtenberk 1983, Craig 1993, Croft 1994). They are "the major typological characteristics of Oceanic languages" (Craig 1992, 285), and are "only used with a class of 'alienable' possesives which is culture and language specific" (Craig 1993, 566). Classifiers are also reported to occur in possessive constructions in languages of the Miao-Yao group (Jaisser 1987, Bisang 1993, Aikhenvald 1994). Although some studies on Chinese dialects do mention classifiers being used in possessive constructions in Yue dialects (Hashimoto 1972, Norman 1988), typological works published so far on classifiers have not mentioned their existence in possessive constructions in Cantonese. Bisang, for example, suggests that Hmong, along with a few other
Miao languages, may be the only classifier language in which classifiers occur in possessive constructions (Bisang 1993, 4).

Possessive classifiers as found in Micronesian and American languages have never been compared to investigate what they have in common. Indeed, on closer inspection, they are quite different from classifiers found in possessive constructions in some Asian languages (Lichtendorf 1983, Aikhenvald 1994). To understand what ‘possessive classifiers’ means the following terminological distinction turns out to be helpful:

A Relational classifier specifies or characterises the type of possessive relationship. Relational, or possessive classifiers, also known as attributive classifiers (and sometimes confounded with genitive classifiers discussed below) appear in genitive expressions to characterise the type of possessive relationship of certain alienably possessed nouns. (Aikhenvald 1994, 409). Cahuilla examples from Seiler (1983, 37):

(11) ne-ki?iw-a méñiki
    my-waiting for mesquite beans
    ‘my claim, the mesquite beans’

(12) ne-?ay-a méñiki
    my-plucking mesquite beans
    ‘my (fresh) mesquite beans (on the tree)’

(13) ne-i-a méñiki
    my-picking up mesquite beans
    ‘my mesquite beans (picked from the ground)’.

Genitive classifiers can be used with both alienable and inalienable nouns. Genitive classifiers characterise a possessed object in a possessive construction. The basic difference between relational classifiers and genitive classifiers is that the former are connected with the kind of possessive relationship, while the latter are similar to numeral classifiers in that they ‘piggy-back’ the characteristics of a possessed entity in genitive, or possessive, constructions. The use of genitive classifiers is not restricted to alienable possessed nouns, as is the case with relational classifiers. Both can coexist in a single language (Aikhenvald 1994, 410).

According to this typology, classifiers in possessive constructions in Cantonese should be called genitive, and there are no relational type classifiers in this language, that is, the type of relation between the possessee and the possessed noun is never grammatically marked nor is it involved in the particular classifier used. The genitive constructions are only syntactically similar to the relational classifiers, but semantically quite different.

1.3. Classifiers

The literature on classifiers abounds in monographs on particular languages, but studies focusing on classifiers from a typological and more formal semantic point of view are still scarce. Some basic questions about the classifier’s function in classifier languages are still unresolved issues.

Greenberg (1974) was the first to address typological issues in languages involving classifiers. In his view numeral classifiers are an ‘overt expression’ of quantification: they allow counting by units. Individualization is their main function. The numeral classifier construction
is modelled after the measure construction with mass nouns, and hence arises historically in languages with a previous mass-count noun distinction.

"What is peculiar to" classifier languages is "the overt expression of one particular mode of quantification, namely counting by units. This manner of quantifying is evidently the 'unmarked' method in that, in the absence of an overt indication, unit counting is assumed." (Greenberg 1974, 171)

Some scholars already noticed the special status and therefore such expressions as 'unit counters' or 'individual classifiers' were used for this particular type of expressions. If we reserve the term 'classifier' for those unit counters we can delimit it in terms of overt expression of unit counting, says Greenberg (1974, 172):

"We may say then, that in even the most elaborate system, all the classifiers are from the referential point of view merely so many ways of saying 'one' or, more accurately, 'times one'. The latter is to be preferred because, taken pragmatically, there is a difference between numerals proper and models of quantifying even when the latter involve a number. 'Two dozen' and 'twelve pairs' represent different kinds of quantification acts even though the identity of the final numerical result is guaranteed by the commutative law of multiplication. Hence unit counting is to be distinguished from 'one' as a numeral although the connection between the two is a close one."

In the two decades following, Greenberg's idea of 'individualization' as the main function of classifiers was re-emphasised by other scholars and it was taken as one of the main focuses of typological works on classifiers. Seiler (1986) saw individualization as the common denominator of seemingly disparate phenomena among which are: abstract nouns, classificatory verbs, numeral classifiers, noun classes, number, and proper names. Individualization can be determined functionally as the degree of individuation in the apprehension of objects by means of language into graded continua scales. Seiler argued for the existence of a universal operational dimension in the realm of nominal classification. The invariant preserved throughout the dimension is correlated with a particular function: individuation. Two converse principles constitute the dimension: (a) class formation, and (b) ordering (where numbers are focal instances).

Craig (1992) takes the view of classifier as stated by Functional Grammar, proposing that we basically deal with two categories: entities (mental constructions) and terms (instruments used to refer to entities). Those mental constructions can in turn be subcategorised into three: sets, made of singletons; masses, to be reduced only into other, smaller, masses; and lastly ensembles whose status is neither similar to the first one nor to the second. This third type of noun is only found in classifier languages, where classifiers are used to "individuate objects which are referred to by conceptual generic nouns" (Craig 1992, 279). Moreover classifiers serve to individuate referents, enabling us to count them (ibid. 281). According to Craig we must identify the different types of classifier systems on the grounds of their morpho-syntactic locus. All classifiers share the function of individuating the nouns which they refer to but they are related to different semantic bases for individuation (1992, 290). The primary function of classifiers is 'individuation', that function is what unifies all the types of classifiers systems. In fact, on closer inspection, it appears that one of the major uses of even numeral classifiers is actually strictly one of individuation. It is in fact common to find situations where the number 'one' functions very much like an indefinite determiner. In the Functional Grammar framework, classifiers are term operators of classifier languages that systematically and overtly do categorisation conversions on ensemble nouns, to turn them into
individuated elements. This process of individuation is the most elementary operation that can apply to ensemble/concept nouns; it then feeds into other processes such as quantification, definiteness, deixis and possession.

A common path taken by typologists since the 1980s (Bisang 1993, Croft 1994 and Aikhenvald 1994) has been to split the functions of classifiers, that is, to attribute classifiers different functions according to where they appear, where Greenberg tried to give a more unified account. Thus Bisang (1993) identifies four operations of nominal concretisation as crucial for presenting a typology of classifier languages: individualization, classification, relationalization (possession), and referentialization. Seiler (1980), Craig (1992) Bisang (1993) Croft (1994) and Aikhenvald (1994) all agree on individualization playing a role in classifier languages, but they all state that numerous types of classifier systems must be distinguished.

2.0. Specificity and Related Phenomena.

2.1. Specificity

While specificity is one of the more widely terms used in semantics, there is no unified agreement on what phenomena it involves. Referentiality, identifiability and the reference made to a unique referent the speaker/hearer should have in mind are often claimed to play a key role in the account of specificity.

Examples such as (14) are often taken as definitional:

(14) David wants to invite a clown to his party

The NP [the clown] in a sentence like (14) has two readings:

(14) a a particular actor who plays a clown (specific)

b any actor who can play the clown (non-specific)

(14a) is understood to refer to an uniquely identified individual, while (14b) is understood to mean that the identity of the clown has not been established. Frawley (1992, 69) sees specificity as the reference made by languages:

"to the degree of individuation of an entity. This is specificity, the uniqueness of the entity or, in more philosophical terms, the relative singularity of the denotation". (emphasis in the original)

Moreover it is stressed that the existence of the entity is not involved, instead what is crucial is the uniqueness of the individual relative to some mentally projected universe (Frawley 1992, 71). Concerning the factors which have been postulated as determinants of specificity, Frawley gives an overview of the proposals coming from both the philosophical and the linguistic literature. Both agree that semantic specificity is an independent property mainly inducible from the linguistic and pragmatic context.

In the literature there are several accounts of specificity; some are ‘discourse referents’ oriented, therefore they deal with the notion of the speaker having a referent in mind (Hawkins 1978, 204; LaPolla 1993), while others do not consider the referent in the speaker’s mind to be a criterion (Enç 1991). In such an approach, specificity must be characterised in terms of the relation between the denotation of a NP and the domain of discourse. Identifiability is essentially hearer oriented even though they both stress the referent as crucial and carrying specificity.
One semantic approach to the specific-non-specific opposition acknowledges this distinction within *singular* NPs, both definite and indefinite, between NPs referring to a particular entity and NPs which do not (Carlson and Pelletier 1995):

(15) A lion stood in front of my tent (specific)
(16) A lion has a bushy tail (non-specific)

(examples from Carlson and Pelletier 1995, 14-5)

In addition, the specific/non-specific distinction is considered to be independent of the kind reference/object\(^2\) distinction; with both object predication and reference to kinds it is possible for indefinite NPs to be both specific and non-specific. When using an indefinite NP in the ‘kind’ reading, it refers to ‘some element in this kind of taxonomy’; this will be classification of the italicised NPs according to the authors:

(17) *a lion* has a bushy tail -specific -kind
(18) *Simba* stood in front of my tent +specific -kind
(19) *a cat* show mutations when domesticated -specific +kind
(20) *the lion/ a cat, namely the lion* +specific +kind

(examples from Carlson and Pelletier 1995, 15).

However Carlson et al. are not entirely convinced that there is such a specific/non-specific distinction, since it is very difficult to ‘elucidate in its details’, therefore they rather prefer to remain ‘on a pre-theoretical level’ (Carlson and Pelletier 1995, 14-5). They also claim, drawing a map of cross-classification involving genericity in both NPs and sentences, that non-specific NPs are only found with characterizing sentences, that is generic sentence. If an NP occurs with a characterising predicate, that is a generic predicate, this NP tends to be interpreted as non-specific (Carlson and Pelletier 1995, 16). This typology they outline as follows:

<table>
<thead>
<tr>
<th>Sentence type</th>
<th>NP type</th>
</tr>
</thead>
<tbody>
<tr>
<td>(21) a lion has a name</td>
<td>characterizing</td>
</tr>
<tr>
<td>(22) Samba ate lunch</td>
<td>particular</td>
</tr>
<tr>
<td>(23) Simba roars when he smells food</td>
<td>characterizing</td>
</tr>
<tr>
<td>(24) a predatory cat (usually) is protected by law</td>
<td>characterizing</td>
</tr>
<tr>
<td>(25) the lion vanished from Asia</td>
<td>particular</td>
</tr>
<tr>
<td>(26) the lion roars when it smells food</td>
<td>characterizing</td>
</tr>
</tbody>
</table>

We will see that the singular/plural dichotomy is shared by other scholars and it does carry some consequences for our analysis as well.

Our claim is that specificity has to be accounted for separately from other semantic phenomena in a language. Specificity may not be overtly marked, or specificity might not be compulsorily marked even when it is part of the semantic apparatus of a language. Nouns do carry individuation, but not in every language nor in every context will the fully

\(^{2}\) Note that ‘object’ is used by the authors in a semantic sense: “Object is a semantic notion here describing the ontological status of what is being referred to and does not have anything to do with ‘object’ as a syntactic notion” (Carlson and Pelletier 1995, 2).
individuated noun appear. Definiteness is involved when there is reference to a unique referent which is identified, but it does not imply that the reference is individualised; specificity is the reference made to a unique referent which is individuated, but not identified. Identifiability, a property of definiteness, is mainly hearer-oriented. Individualisation, instead, does not rely so much on the hearer, but rather involves the speaker's intention to convey information. It is the individualisation function, i.e., the distinctive feature carried by specificity, which is crucial for classifiers. In dealing with definiteness the unique referent plus its identification presuppose we know exactly which referent is at issue. Specificity then is a semantic property of things, identification a peculiar of definites and it is not hearer oriented. Specificity can be considered to be "a semantic property *predicated of* things and to be a matter of degree." (Frawley 1992, 73, emphasis in the original).

Specificity is involved when the speaker has in mind a specific member of a particular category, and when the speaker assumes the hearer is able to identify the particular entity. When specificity is involved the speaker does not identify the referent for the hearer. Identification may be guaranteed by virtue of information contained in the utterance itself or by virtue of contextual information. So uniqueness and individualization of the referent seem to play a more important role than identification.

2.3 Cantonese Possessive Constructions and Specificity

We have pointed out that the precise function of classifiers has not yet been fully investigated. While we have known since Greenberg (1974) that 'individualization' is their main function, Greenberg was referring to the occurrence of classifiers with numerals and demonstratives; he only mentioned possessive constructions in Austronesian languages (Greenberg 1974, 191). As we have shown in section 1.2, possessive constructions and classifiers in Austronesian languages are semantically and syntactically quite different from the kind of possessive constructions involving classifiers in Cantonese. We also have seen that genitive classifiers are not well known, neither among typologists nor among linguists working on geographically close areas. There is thus a need to give a more comprehensive description before trying to understand why and from where they arise. Different possessive constructions in a language should be closely analysed in order to find their different functions and distribution.

In this section we will present a description of the distribution of classifiers in possessive constructions in Cantonese. We will show first how it is possible to account for the presence of classifiers with possessive constructions in Cantonese using a semantic account involving the distinction specific vs. non-specific. We will then account for the other possessive constructions involving the markers GE and DI.

Specificity has been observed to be connected with classifiers without providing detailed description of how that affects the usage of classifiers (Bisang 1993, 3; Frawley 1992, 69; Matthews and Yip 1994, 93). As outlined in the previous section, we assume the view of specificity as a semantic device that the speaker has to convey reference to a particular entity. Therefore if the speaker says 'my friend' or 'my colleague' he is referring to a particular one, one whose reference is clear in his mind, although he may not wish to identity the referent, and the hearer may or may not be able to do so. We will now try to see how these criteria can apply to classifiers in possessive constructions in Cantonese.

As noted in 1.2 above, there are several different ways of expressing possession in Cantonese. The relevant options are repeated here:

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3 Cf. 2.6 for Greenberg's historical claims on Possessive Constructions in Micronesian languages.
a. possessor plus GE plus possessed, as in:

(27) ngo5 (ge3) tung4si6
I GE colleague(s)
‘my colleague(s)’

b. possessor plus classifier plus possessed, as in:

(28) ngo5 go3 tung4si6
I CL colleague
‘my colleague’

c. possessor plus DI plus possessed, as in:

(29) ngo5 di1 tung4si6
I DI colleague(s)
‘my colleagues’

The difference between (27), (28) and (29) is that the presence of the classifier signals atomic individuality, atomic countability. The difference between expressions like ‘colleagues’ and ‘three colleagues’, even in non-classifier languages, should be considered. As we can see from the examples above, in Cantonese ‘colleagues’ is expressed by using DI as in (29), while ‘three colleagues’ needs a classifier. If we look at the other examples we can see that (28) is the only one which can unambiguously be interpreted as singular. This is, from a semantic point of view, an important matter.

We assume that possession is a relationship between unique individuals: the possessor and the possessee. We also defined specificity as the reference to a unique referent without identifying it, specificity is also the reference to the degree of individuation of an entity (cf. 2). Then the GE and CL constructions could both appear to be potentially specific, but we will see that only the classifier in possessive construction should be analysed as a truly possessive marker, while GE should be analysed as an associative marker.

The particle GE takes a quite wide range of uses in Cantonese (Matthews and Yip 1994). As the counterpart of Mandarin DE, the particle GE is said to belong to the more formal Cantonese register, therefore it is more likely to appear in radio/TV programs which, to show professionalism, pattern very closely to Standard Written Chinese (Hashimoto 1972; Kwok 1984; Bauer 1988; Matthews and Yip 994, 107, 111; Tsang 1996, 1331-1336). A rule of GE insertion has been recently investigated in numeral, demonstrative and relative clause contexts by several studies which attribute this insertion to language innovation (Luke and

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4 Considering the possessive and other uses of GE, a similar set of constructions is found in Japanese. Horie (1998) points out that the Japanese no has three syntactic functions: a genitive, pronoun, and sentential nominaliser. Interestingly Cantonese GE seems to have a very similar polyfunctionality. Horie analyses the syntactic functions as part of continuum of ontological complexity from first-order entity to second-order entity to third-order entity. This continuum is said to reflect a hierarchy of individuation from the more individuated ontological entity; (person/thing), to the less individuated ontological entity; (event/proposition). It was also used, in late 19th to early 20th centuries, in formal written documents in some types of embedded constructions.
Nancarrow 1993, Matthews and Yip 1994, Tsang 1996). According to these accounts GE can also follow a sortal classifier as in:

(30) sei3 sau2 ge3 man4 jiui4 (example from Tsang 1996)
    four CL GE folk song
    'four folk songs'

It should be noted, however, that only certain constructions can be acceptable when followed by GE: measures, classifiers with numerals other than one, demonstratives, and relative clauses. In contrast, the construction CL plus GE is not acceptable with the number 'one' and, interestingly, with possessive constructions, as these examples show:

(31) *ngo5 gaa3 ge3 ce1
    I CL GE car
    'my car'

(32) ??jat1 gaa3 ge3 ce1
    one CL GE3 car
    'a car'

(33) sap6 gaa3 ge3 ce1
    ten CL GE car
    'ten cars'

The unacceptability of (31) rules out the possibility of an account for [NP CL N] possessive constructions in terms of GE deletion, along the lines suggested by Killingley (1993). Thus (34) can hardly be derived by deletion of GE because both the possible source structures, (35) and (36), are equally ungrammatical:

(34) ngo5 go3 hok6saang1
    I CL student
    'my student'

(35) *ngo5 go3 ge3 hok6saang1
    I CL GE student

(36) *ngo5 ge3 go3 hok6saang1
    I GE CL student

The only instances where we can find a classifier and GE in the same phrase are those like the following:

(37) ngo5 ge3 saam1 go3 hok6saang1
    I GE three CL student/s
    'three students of mine'

(38) jat1 go3 keoi5 ge3 bat1
    one CL s/he GE pen
    'a pen of hers'
In such cases a CL and the marker GE co-occur in a possessive phrase, but crucially the
meaning is different, giving rise to a partitive interpretation: ‘three students of mine’ rather
than ‘my three students’.

GE as an associative marker refers to the relationship between two NPs or two entities.
When a speaker says ‘my colleague/s’ or ‘my friend/s’ he may have a particular colleague in
mind, one to whom he is referring, or he may not, and if he has one in mind he does not
consider it crucial to give any more information. By saying that we want to stress a
relationship, association is probably the best way to analyse phrases like (27) involving the
marker GE. GE indicates that a relationship exists between the two NPs ‘X’ and ‘Y’. GE can
be interpreted as plural or singular because its function is primarily to indicate a relationship,
not to give details about the individuated entities, nor to individuate how many entities are
involved in the relationship, but just that there is a relationship that holds the two NPs
together. That is why the individuation is not important and the exact number can be left
unmarked.

2.4 The marker DI

Possessive noun phrases with DI can be claimed to have a collective meaning, because of the
non-atomic plural meaning resulting from sentences with DI. As we can see from examples
(39) and (40), this applies with either count or mass nouns:

(39) Nei5 di1 hok6saang1 hou2 sing2 ge3.
    you DI student very smart PRT
    ‘Your students are really smart.’

(40) Keoi5 di1 tau4faat3 hou2 coeng4 ge3.
    s/he DI hair very long PRT
    ‘Her hair is pretty long.’

DI as collective has its motivation because it refers to the quantity involved in the predication,
rather than to unique reference or to relationship as for GE. DI cannot refer to unique referents
as shown by the unacceptability of the sentences involving numbers: in contrast to numeral-
classifier constructions, we can see that DI is unacceptable with numerals other than ‘one’:

(41) saam bun syu
    three CL book
    ‘three books’

(42) *saam di syu
    three DI book
    ‘three books’

(43) ?jat di syu
    one DI book/s
    ‘some books’
Even when (43) is accepted it gives a non-specific collective reading. We have reference to unique entities only when a number is introduced in the expressions and the classifier is used. In order to have specific reference, a demonstrative is needed: 5

(44) nei (jat) di syu
this (one) DI book
‘these books’

The widespread analysis of DI as ‘plural classifier’ (Matthews & Yip 1994, Au-Yeung 1997) appears to contradict the individualizing view of classifiers because, unlike plurals in languages like English, it does not allow numbers. We have shown that the so-called ‘plural classifier’ DI shares its semantic uncountability with the possessive marker GE and with bare nouns, but it is indeed a plural marker, indicating an uncountable plurality as it is proved by being unacceptable with cardinal numbers, where by contrast both ‘sortal’ and ‘mensural’ classifiers are acceptable. DI is syntactically, by not appearing in constructions involving cardinal numbers, and semantically, in not sharing the individualised countability of sortal classifiers, not a classifier at all.

2.5 Language Acquisition, Classifiers and Possessive Constructions in Cantonese

Further evidence for our claim about classifier constructions carrying specificity comes from findings in child language. According to studies of child language acquisition, children aged 2 or 3 years old are “almost as reliable as adults in using classifiers whenever one was required” (Erbaugh 1986, 413). In Min’s (1994) study, three and a half year old Beijing children were found to have acquired ‘a basic knowledge’ of the specific/non-specific distinction, when they had not yet acquired the definite/indefinite distinction nor did they mark the given/new information distinction by means of word order. Children have some kind of basic knowledge of the distinction between specific and non-specific reference and they mark it with relatively appropriate linguistic devices. Nominals with possessives, deictic pronouns, third person pronouns and zero forms were never used for non-specific reference by any of the children. Instead nominals with numerals and classifiers, bare nouns, kinship terms, and other nominals, mainly consisting of DE-constructions, were used for non-specific reference by all the children. The distinction is primitive for some reasons; only the most obviously definite forms, sometimes used in clearly deictic ways, are reserved for specific reference and differentiated from NPs used for non-specific reference. Second, non-specific uses are less frequent than specific ones and they were merely consisting of non-specific potential cases. The emergence of some appropriate uses of NPs are favoured by particular contexts: in addition to their sheer numeral function (counting) they were most frequent in contexts where

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5 It has been claimed that DI may have a deictic meaning, so expressions involving DI are often translated using demonstratives. However this is only appropriate when supported by a pragmatic context:

di1 hok6saang1 hou2 laan5 ge3
DI student very lay GE
‘those students are very lazy’ [who are here near us, whom we have been discussing, etc.]

In these cases the referent is identifiable because of the context and not because of an intrinsic identifiability of the expression.
specific reference is potential (non-specific reference, but potential new referents) and contexts where referents are first mentioned (specific new referents).

Among NPs used for non-specific reference, nominals with numerals and/or classifiers were initially used in a particular situation: non-specific potential reference, that is contexts where there is a strong expectation that some specific referent/s will be selected as a result of the utterance. In these contexts the uses of nominals with numbers and classifiers were appropriate. But it must be noted that non specific uses were much less frequent than specific ones, very few non-specific uses other than non specific/potential ones were found. Only the most definite forms were differentiated from other uses when the reference was specific and these forms were often used deictically.

Just before the age of three they begin using nominals with numeral and/or classifiers post verbally to introduce new referents, however this is restricted to narrative contexts for a few referents. Min suggests that the complexity of the distinction between given and new information may explain the delay in the acquisition of the pragmatic distinction. The specific/non-specific distinction is based on the speaker’s intention, while the pragmatic distinction also requires the speaker’s assumptions about his listener’s knowledge of the intended referent. In other words, the pragmatic distinction between given and new is more complex than the semantic distinction between specific and non-specific. The first uses of nominals with numerals and classifiers for specific referents occur in the special context of referent introduction in narratives. The first uses of nominals with numerals and classifiers for non specific reference are related to non-specific potential reference contexts, where the reference has a great probability to be instantiated.

These findings support our claim that the specific/non-specific distinction is separate from the definite/indefinite one, at least in Chinese. Some languages, like Chinese, mark these two sets of distinctions separately. Moreover, Mandarin differs from Cantonese in marking the specific/non-specific and definite/indefinite distinctions (Matthews and Pacioni 1997).

According to a consistent corpus of data resulting from investigations on children’s acquisition of Cantonese (Wong 1996), the first possessive construction to be acquired is the Possessor -- Possessed juxtaposition as in:

(45) ngo5 sai3 lou2
    I young brother

‘my brother’

The second construction acquired is [Possessor -- Classifier -- Possessed Noun] as in:

(46) ngo5 go3 gung1 zai2
    I CL toy

‘my soft toy’

The possessive construction with the possessive marker GE is acquired only at a later stage, after the N-N and the [NP CL N] constructions.

Combining Min’s finding’s for the acquisition of Mandarin with Wong’s for Cantonese, we see that both the specific/non-specific distinction and the classifier possessive constructions are acquired relatively early.
2.6. Diachronic Issues

Scholars have wondered about where possessive constructions using a classifier as a possessive marker come from. Greenberg (1974, 191) suggested that possessives go from the opposition alienable/non-alienable to a generic class of possession, comparable to the passage of a specific usage of a classifier to a more general one; he notes that the Mandarin classifier ‘GE’, which started off as classifier for ‘bamboo’ then became a default classifier for almost anything, including both animate and non-animate referents.

Greenberg’s hypothesis is that in many Oceanic languages the contrast between alienable/non-alienable possession would have been elaborated through the split of the non-alienable class into classes based on the use of different classifying nouns taking the possessive affixes in place of the noun designating the possessed item, then placed in apposition. He gave examples of languages where ‘my dog is’ is literally ‘my-animal-dog’. Systems like these also tend to develop a ‘general’ class; in Sonsorol (a Micronesian language), according to Greenberg, there are possessive and numeral classifier systems operating at the same time, which are independent of each other. One of the noun bases of the possessive system ‘ja-’ means ‘general possession, not covered by any other class’ (Greenberg 1974, 190-1).

A recent paper discusses the two hypotheses made on possessive classifiers in Micronesian languages (Song 1997). Pawley (1973) and Lichtenberk (1985, 8) claimed continuity, while Harrison (1988) saw discontinuity between the possessive classifier system in Proto-Oceanic and those in contemporary Micronesian languages. Song found that the possessive classifier system is used to mark benefactive in some Oceanic languages. Since the distribution of this phenomenon is quite vast, Song concludes that it should be considered a Proto-Oceanic feature. Harrison argued that the original Oceanic possessive classifier system collapsed by the time of Proto-Micronesian, and claimed that the possessive classifier system which now appears in Micronesian languages is an independent Proto-Micronesian development.

Harrison (1983) considers possessive classifiers to be a relic of a definite article in Proto-Micronesian. They are found in all Micronesian languages except Gilbertese. It is argued that Proto-Micronesian, like Gilbertese, had no possessive classifiers. The Proto-Micronesian precursor of possessive classifiers is believed to have been a set of deverbal nominalizations appearing in what is termed a ‘juxtaposed complex nominal construction’. The classifier construction appeared in response to the development of the juxtaposed complex nominals construction, and the loss of Proto Micronesian common article *te.

There are Micronesian languages where the possessive classifiers are also used as benefactive markers, including: Kusaiean, Mokilese and Woleaian (Kusaiean example from Song 1997, 33):

(47)  
Sohn el mole-lah ik la-l sepe ah la-l sru
John 3sg/sbj buy-asp fish CL-3sg/Ps sepe det CL-3sg/Ps sru
‘John has bought Sepe’s fish for Sru’

In this sentence the possessive classifier ‘la-’ is used twice in the same clause; once for encoding possession and a second time for expressing the benefactive meaning.

In addition Woleaian has a verb-based benefactive marker ngali- which may occur with all types of main verbs, plus possessive classifiers used as benefactive markers. It seems to be the only language which uses the two markers. Gilbertese, the only language which does not have possessive classifiers among the Micronesian languages, uses body part terms as the basis of its benefactive marker; buki- ‘buttock, end’ which is preceded by the preposition ‘i’, and often followed by the possessive pronominal suffix ‘-n’ (Song 1997, 38).
Concerning the source of classifier possessive constructions, looking at other classifier languages, like the Oceanic languages, can give us an idea of how the system might have developed, but also raises problems. If we hypothesize that the NP-CL-N construction is the result of a simplification process from the splitting of the (in)alienable possessive constructions we should postulate a stage for Cantonese where constructions with (in)alienable possessives existed. If so, where did this construction come from in Cantonese, and in the other Yue dialects?

3. Conclusion
We have argued that the phenomenon of classifier possessive constructions in Cantonese is intimately related to specificity. Starting from Greenberg’s seminal work we have elaborated on his claim that ‘individualisation’ was the reason for the use of classifiers, arguing that classifiers in possessive constructions indicate specificity in the sense of a unique referent. Specificity is easily confounded with other semantic aspects, like determination, definiteness etc., firstly because of specificity not being overtly marked in many languages and secondly, due to a lack of an unified account of specificity. We have also shown that possessive constructions with the markers GE and DI have quite different semantic properties, lacking the individualising function of the classifier constructions.

From a typological perspective, we have seen that classifiers as found in Cantonese possessive constructions should be distinguished from the ‘possessive classifiers’ described in the literature on other languages, which indicate the nature of the possessive relationship. Finally, we have found support from findings in language acquisition and considered possible sources of the constructions.

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REFERENCES


Auxiliary Verbs in Cantonese

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In this paper, we report on a study of auxiliary verbs in Cantonese as it is spoken in contemporary Hong Kong. We will begin with a discussion of the rationale for recognizing auxiliary verbs as a word class in the language. By reference to a set of grammatical properties, 10 words are identified as core members of this class. Another 7 are identified as non-core members. They are non-core in the sense that they can be used as main verbs as well as auxiliaries. We will illustrate these two different uses and provide some statistics from a corpus. In the final part of the paper, we will give some statistics on the occurrence of the most commonly used auxiliaries in a running text of some 20,000 words.

1. Grammatical Properties of Auxiliary Verbs

Previous studies of Chinese grammar have recognized auxiliary verbs as a distinct class of words. Chao (1968:731-748) offers a full discussion of the syntactic behaviour of auxiliaries (as distinct from verbs and adverbs), and gives a complete list of them for Mandarin Chinese. Subsequent accounts, including Li and Thompson (1981:172-183) and Zhu Dexi (1982:61-65), have confirmed Chao’s analysis. McCawley (1992) challenges this position, his argument being that the word dasuan ‘intend’ behaves no differently from what are usually regarded as auxiliary verbs. In our view, it can simply be included as one of the auxiliary verbs.

Previous studies of Cantonese grammar have likewise recognized auxiliary verbs. Both Yue (1963:11) and Kwok (1971:67-86) have auxiliaries in their accounts as distinct from main verbs. Matthews and Yip (1994:229-247) make a similar distinction between modal verbs and main verbs, modal verbs being a subset of auxiliaries. (See also Wong, this volume, for a discussion of the literature).

Our own position is no different from these previous accounts. We believe that it is justified and necessary to recognize a set of auxiliary verbs in Cantonese. The main reason for taking this view is that we have found about 10 words in the language, like 㑈 wui5 and 可以 ho2ji5 (a full list is given in the next section), which occur invariably in the same position in the clause, namely after the subject and before the verb phrase (VP), and which have no grammatical function other than being modifiers of the following VP. These words are different from most verbs in that they cannot take objects. They are not intransitive verbs either, because they cannot occur independently of a following VP. They cannot therefore be called transitive verbs or intransitive verbs, but must be given some other designation. Whether they are treated as a sub-class of verbs or as a separate word class is not the most important question. Whether they are called auxiliaries or by some other name is not very important
either. What is important is that their grammatical characteristics be recognized, and that their distinctiveness be captured in the form of a word class label. Following traditional practice we shall refer to this set of words, and a few others like them, as auxiliary verbs.

Consider first the position of auxiliaries in the clause.

(1) 張三會暈呢本書。
   ZS wui5 tai2 ni1 bun2 syu1
   ZS will read this M book
   ‘ZS will read the book.’

(2) 李四肯幫手。
   LS hang2 bong1sau2
   LS is-willing-to help
   ‘LS is willing to help.’

(3) 張三會上圖書館暈呢本書。
   ZS wui5 soeng5 tou4syu1gun2 tai2 ni1 bun2 syu1
   ZS will go library read this M book
   ‘ZS will go to the library to read the book.’

(4) 李四肯嚟學校幫我嘅字。
   LS hang2 lei4 hok6haau6 bong1 ngo5dei5 daa2zi6
   LS is-willing-to come school help us type
   ‘LS is willing to come to school to help us do some typing.’

It will not do to place an auxiliary after the main verb.

(5) * 張三會暈呢本書。
    ZS tai2 wui5 ni1 bun2 syu1
    ZS read will this M book

(6) * 李四肯手肯。
    LS bong1sau2 hang2
    LS help is-willing-to

Notice that while sentence (6) is ungrammatical, sentence (7) is (perhaps) not entirely impossible.

(7) ? 李四肯手，肯。
    LS bong1sau2 hang2
    LS help willing

The crucial difference is that in sentence (7), the auxiliary has been post-posed to the right of the sentence boundary, and is presented as an “after-thought”, which is a perfectly general process which affects the surface position of all kinds of sentence constituents, and not just auxiliaries. (For an account of postposed modals, see
Bourgerie, this volume). Sentence (6), however, is fundamentally different: here the auxiliary is placed after the main verb, but within the sentence boundary. The contrast between sentences (8) and (9) below, which now contain sentence-final particles, will help clarify the difference between (6) and (7).

(8) * 李四幫手肯嚟。(Variant of (6))
   LS bong1sau2 hang2 wo3
   LS help is-willing-to FP

(9) 李四幫手嚟，肯。(Variant of (7))
   LS bong1sau2 wo3 hang2
   LS help FP is-willing-to
   ‘LS will help - he’s willing.’

In a sentence containing a series of VPs, putting the auxiliary anywhere other than before the first VP will result in a sentence which is either ungrammatical (as in (10b) and (11b) below) or which is grammatical but which has a different structure and meaning from one in which the auxiliary occurs where it normally does, i.e. to the left of the first verb (as in (12b) and (13b) below).

(10)a. 張三肯上圖書館睇呢本書。
   ZS hang2 soeng5 tou4syu1gun2 tai2 ni1 bun2 syu1
   ZS is-willing-to go library read this M book
   ‘ZS is willing to go to the library to read the book.’

b. * 張三上圖書館肯睇呢本書。
   ZS soeng5 tou4syu1gun2 hang2 tai2 ni1 bun2 syu1
   ZS go library is-willing-to read this M book

(11)a. 李四敢嚟學校幫我啲打字。
   LS gam2 lei4 ho6khaau6 bong1 ngo5dei6 daa2zi6
   LS dare come school help us type
   ‘LS dares to come to school to help us do some typing.’

b. * 李四嚟學校敢幫我啲打字。
   LS lei4 hok6haau6 gam2 bong1 ngo5dei6 daa2zi6
   LS come school dare help us type

(12)a. 張三會上圖書館睇呢本書。
   ZS wui5 soeng5 tou5syu1gun2 tai2 ni1 bun2 syu1
   ZS will go library read this M book
   ‘ZS will go to the library to read the book.’

b. 張三上圖書館會睇呢本書。
   ZS soeng5 tou4syu1gun2 wui5 tai2 ni1 bun2 syu1
   ZS go library can read this M book
   ‘When ZS goes to the library, he will read the book.’
(13a. 李四可以喺學校幫我啲打字。
LS ho2ji5 lei4 hok6haau6 bong1 ngo5dei6 daa2zi6
LS can come school help us type
‘LS can come to school to help us do some typing.’

b. 李四喺學校可以幫我啲打字。
LS lei4 hok6haau6 ho2ji5 bong1 ngo5dei6 daa2zi6
LS come school can help us type
‘When LS comes to school, he can help us do some typing.’

In (12a) and (13a) above, where the auxiliaries are in their normal position before the first VP, their scope covers the entire VP. In the (b) sentences, however, where the auxiliaries have been moved a position after the first VP (and before the second VP), their scope becomes smaller and covers only the VP within the second clause (i.e. the main clause). The structure and meaning of the (b) sentences are clearly different from those of the (a) sentences, and it seems reasonable to attribute the difference to the placement of words like 會 wui5 and 可以 ho2ji5 in the position reserved for auxiliaries in either the first VP or the second VP.

A second point about the syntactic behaviour of words like 會 wui5 and 可以 ho2ji5 is that they cannot take NP-objects, as can be seen in (14) and (15) below.

(14a. * 張三會呢本書。
ZS wui5 ni1 bun2 syu1
ZS will this M book

b. 張三會喺呢本書。
ZS wui5 tai2 ni1 bun2 syu1
ZS will read this M book
‘ZS will read this book.’

(15a. * 李四可以呢五。
LS ho2ji5 WN
LS can WN

b. 李四可以通知呢五。
LS ho2ji5 tung1zi1 WN
LS can inform WN
‘LS can inform WN.’

Neither can these words occur independently of a VP (except for ellipsis). Thus,

(16a. 佢可以。
keoi5 ho2ji5
he can
‘He can.’

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b. ? 我應該。
   ngo5 jing1goi1
   I should
   ‘I should.’

There is then a position in the clause which is reserved exclusively for a grammatical function (modifying the following VP). At the same time, we have a group of words in the language which are dedicated just to serving this grammatical function. These words are neither transitive verbs nor intransitive verbs. We will refer to them as auxiliary verbs.

2. Membership

2.1 Primary Auxiliaries

A first division is made between primary and modal auxiliaries. There are two primary auxiliaries in Cantonese: 係 hai6 ‘be’ and 有 jau5 ‘have’. We consider their main uses in turn.

2.1.1 係 hai6

Like ‘be’ in English, 係 hai6 can serve as a main verb, as in (17) and (18).

(17) Identification

張三係排球隊嘅隊員。
ZS hai6 paa4kau4deoi2 ge3 deoi2jyun4
ZS be volleyball-team GE member
‘ZS is a member of the volleyball team.’

(18) Definition

地鐵係最方便嘅交通工具。
dei6tit3 hai6 zeo13 fong1bin6 ge3 gaau1tung1gung1geoi6
Mass-Transit-Railway be most convenient transport
‘Mass Trasit Railway is the most convenient form of transport.’

As an auxiliary, hai6 is used mainly for questions, negation, and emphasis, as in (19) to (21).

(19) Question

a. 你係唔係好了解佢吖？
   nei5 hai6-m4-hai6 hou2 liu6gai2 keoi5 aa1
   you be-not-be very understand him FP
   ‘Do you understand him very much?’
b. 張三係唔係揾我啊？
   ZS hai6-m4-hai6 wan2 ngo5 aa3
   ZS be-not-be find me FP
   ‘Did ZS look for me?’

(20) Negation

a. 張三唔係好明李四講乜。
   ZS m4 hai6 hou2 ming4 LS gong2 mat1
   ZS not be very understand LS talk what
   ‘ZS doesn’t understand what LS is talking about.’

b. 張三唔係揾你啊。
   ZS m4 hai6 wan2 nei5 aa3
   ZS not be find you FP
   ‘ZS didn’t look for you.’

(21) Emphasis

a. 張三係鍾意睇呢本書。
   ZS hai6 zung1ji3 tai2 ni1 bun2 syu1
   ZS be like read this M book
   ‘ZS (really) likes reading this book.’

b. 李四做係辜負咗我哋對佢嘅期望。
   LS gam2 zou6 hai6 gu1fu6zo2 ngo5dei6 deoi3 keoi5 gc3 kei4mong6
   LS this-way do be let-down our to him GE expectation
   ‘We were (really) disappointed with LS when he did it that way.’

As a variation of this use, hai6 can signal concession, as in (22).

(22) Concession:

a. 張三係有啲唔嘅，不過李四係有錯。
   ZS hai6 jau5 di1 m4 aam1 bat1gwo3 LS dou1 jau5 co3
   ZS be have PL not right but LS also have wrong
   ‘ZS is at fault, but LS isn’t blameless either.’

b. 張三係同李四好好，不過大家無時間經常見面。
   ZS hai6 tung4 LS hou2 hou2 bat1gwo3 daai6gaal mou5 si4gaan3
   ging1soeng4 gin3min6
   ZS be with LS very close but all no time often meet
   ‘ZS and LS are good friends, but do not have time to meet regularly.’

Hai6 can even be put in front of modal auxiliaries for emphasis, as in (23) below.
2.1.2 有 jau5

As a main verb, jau5 can mean either possession or existence.

(24) Possession

李四有十本英文辭典。
LS jau5 sap6 bun2 jing1man4 ci4din2
LS have ten M English dictionary
‘LS has ten English dictionaries.’

(25) Existence

呢條街有十間屋。
ni1 tiu4 gaa1 jau5 sap6 gaan1 uk1
this M street have ten M house
‘There are ten houses in this street.’

As an auxiliary, jau5 (and 無 mou5) are used mainly to indicate past events, e.g. 有去 jau5heoi3, 無去 mou5heoi3, 有無去 jau5-mou5heoi3, as in (26). It can also sometimes be used for emphasis, as in (27).

(26) a. 李四有無去圖書館？
LS jau5-mou5 heoi3 tou4syu1gun2
LS have-not go library
‘Did LS go to the library?’

b. 李四去圖書館。
LS jau5 heoi3 tou4syu1gun2
LS have go library
‘LS has gone to the library.’

c. 李四無去圖書館。
LS mou5 heoi3 tou4syu1gun2
LS no go library
‘LS didn’t go to the library.’
(27) a. 張三有無睇過呢本書啊？
    ZS jau5-mou5 tai2gwo3 ni1 bun2 syu1 aa3
    ZS have-not read this M book FP
    ‘Has ZS read this book?’

b. 李四有同我講過呢件事。
    LS jau5 tung4 ngo5 gong2gwo3 ni1 gin6 si6
    LS have with me tell this M matter
    ‘LS (in fact) has told me about this.’

The difference between 係 hai6 and 有 jau5 in questions can be illustrated in the following pair of examples, which have different meanings.

(28) A: 你係唔係見過佢啊？
    nei5 hai6-m4-hai6 gin3gwo3 keoi5 aa3
    you be-not-be see him FP
    ‘Is it true that you have seen him?’

    B: 係啊。/唔係啊。
    hai6 aa3 / m4 hai6 aa3
    yes FP / no FP
    ‘Yes, it is.’ / ‘No, it isn’t.’

(29) A: 你有無見過佢啊？
    nei5 jau5-mou5 gin3gwo3 keoi5 aa3
    you have-not see him
    ‘Have you seen him?’

    B: 有啊。/無啊。
    jau5 aa3 / mou5 aa3
    yes FP / no FP
    ‘Yes, I have.’ / ‘No, I haven’t.’

The above is only a very brief sketch of some of the uses of hai6 and jau5. More can be said about them. But we must move on to look at the modal auxiliaries.
2.2 Modal Auxiliaries

2.2.1 Core members

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<th>Main meanings</th>
<th>English equivalents</th>
<th>Example sentences</th>
</tr>
</thead>
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<td>intention/plan</td>
<td>intend</td>
<td>政府打算出年建二萬間屋。</td>
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<tr>
<td></td>
<td></td>
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<td>zing3fu2 daa2syun3 ceot1nin2 hei2 do1 ji6maan6 gaan1 uk1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>government plan next-year build more two-thousands M houses</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>‘The government plans to build two thousands more houses next year.’</td>
</tr>
<tr>
<td>2.敢 gam2</td>
<td>courage</td>
<td>dare</td>
<td>呢度咁高，我唔敢跳落去。</td>
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<td></td>
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<td>ni1dou6 gam3 gou1 ngo5 m4 gam2 tiu3 lok6heoi3</td>
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<td></td>
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<td>here so high I not dare jump down</td>
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<td></td>
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<td>‘It’s so high here. I dare not jump down.’</td>
</tr>
<tr>
<td>3.肯 hang2</td>
<td>willingness</td>
<td>willing to</td>
<td>阿明仔成日唔肯做功課。</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>aa5Ming4-zai2 sceg4jat6 m4 hang2 zou6 gung1fo3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ming always not willing do homework</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Ming won’t ever do his homework.’</td>
</tr>
<tr>
<td>4.可以 ho2ji5</td>
<td>possibility</td>
<td>can</td>
<td>你唔信可以問佢哋。</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>nei5 m4 seon3 ho2ji5 man6 keoi5 aa1 you not believe can ask him FP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘You can ask him if you don’t believe me.’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>九四可以一次過吃十碗飯。</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LS ho2ji5 jat1ci3gwo3 sik6 sap6 wun2 faan6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LS can at-a-time eat ten M rice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘LS is able to eat ten bowls of rice at a time.’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>你聽日可以嚟見張三。</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>nei5 ting1jat6 ho2ji5 lei4 gin3 ZS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>you tomorrow can come see ZS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘You can come and see ZS tomorrow.’</td>
</tr>
<tr>
<td>5.好 hou2</td>
<td>obligation</td>
<td>had better, should</td>
<td>你今晚好做唔好做佢嘅。</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>nei5 gam1maan6 hou2 zou6saai3 di1 je5 keoi5 laa3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>you tonight better finish PL work it FP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘You’d better finish doing all your work tonight.’</td>
</tr>
<tr>
<td>6. 應該</td>
<td>obligation</td>
<td>should</td>
<td>你應該多啲嚟。 nei5 jing1 goi1 dol1 di1 lei4 you should more come ‘You should come more often.’</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>--------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>inference</td>
<td>should</td>
<td>我認李四聰日應該得閒。ngo5 nam2 LS ting1 jat6 jing1 goi1 dak1 haan4 I think LS tomorrow should be-free ‘I think LS should be free tomorrow.’</td>
</tr>
<tr>
<td>7. 願</td>
<td>willingness</td>
<td>be willing to</td>
<td>無人願陪你去。 mou4 jan4 jyun6 pui4 keoi5 heoi3 no people willing-to accompany him go ‘Nobody is willing to go with him.’</td>
</tr>
<tr>
<td>8. 能夠</td>
<td>ability</td>
<td>can</td>
<td>張三能夠用腳啲寫字。 ZS nang4 gau3 jyun6 goek3 lei4 se2 zii6 ZS can use feet to write ‘ZS can write with his feet.’</td>
</tr>
<tr>
<td></td>
<td>permission</td>
<td>can</td>
<td>我好高興能夠參加你啲嘅聚會。ngo5 hou2 gou1 hing3 nang4 gau3 caam1 gaa1 nei5 dei6 ge3 zeoi6 wuu6 I very glad can join your GE meeting ‘I am very glad to be able to join you.’</td>
</tr>
<tr>
<td>9. 會</td>
<td>prediction</td>
<td>will</td>
<td>張三今晚會見到李四。 ZS gam1 maan5 wui5 gin3 doup2 LS ZS tonight will see LS ‘ZS will see LS tonight.’</td>
</tr>
<tr>
<td></td>
<td>possibility</td>
<td>could</td>
<td>條鎖匙會唔會漏咗喺屋企啊？tiu4 so2 si4 wui5-m4-wui5 lau6 zoe2 hoeng2 uk1 kei2 aa3 M key will-not-will leave at home FP ‘Could you have left the key at home?’</td>
</tr>
<tr>
<td></td>
<td>ability</td>
<td>can</td>
<td>嗑佢唔會打 999 唔咩？ gam2 keoi5 m4 wui5 daa2 999 ge3 me1 then he not can hit 999 FP FP ‘Couldn’t he call 999?’</td>
</tr>
<tr>
<td>10. 值得</td>
<td>worthiness</td>
<td>worth</td>
<td>我喺唔值得為咗呢件事花咁多時間呢？ngo5 dei6 zik6-m4-zik6 daa1 wai6 zoe2 ni1 gin6 si6 faa1 gam3 do1 si4 gaan3 ne1 we worth-not-worth for-the-sake-of this M matter use so much time FP ‘Is it worth our spending so much time on this?’</td>
</tr>
</tbody>
</table>

90
Notes:
1. 會 *wui3* (No. 9) is used mainly in the sense of prediction (to indicate future events), sometimes in the sense of possibility, and only occasionally in the sense of ‘ability’. 識 *sik1* (No. 3 in table (31) below) is the much more commonly used form for ‘ability’.
2. 好 *hou2* (No. 5), as well as 准 *zeon2* (No. 6 in table (31) below) and 倫 *bei2* (No. 1 in table (31) below) are mainly restricted to imperative and interrogative clauses. For example: 你好去喺 ‘You better go’, or 唔好去喺 ‘Don’t go’, or 張三喺好喺好喺好講 ‘ZS didn’t know whether he should say that.’ 准 *zeon2* and 倫 *bei2* are often used in the negative, as a means of forbidding an action.
3. 預 *fyun6* (No. 7) is often used in the negative: 唔願 or 無人願.

### 2.2.2 Non-core members

| (31) | permission | may |  |  |
|------|------------|-----|  |  |
| 1. 倫 *bei2* | permission | may | 圖書館今日唔俾入。 | tou4syu1gun2 gam1jat6 m4 bei2 jap6 library today not permit enter ‘No one is allowed into the library today.’ |
| 2. 預 *pui3* | goodness of fit | good enough to be | 李四喺唔俾做我喺班長？ | LS pui3-m4-pui3 zou6 ngo5dei6 baan1zoeng2 LS good-not-good do our class-monitor ‘Is LS good enough to be our class monitor?’ |
| 3. 識 *sik1* | ability | can | 張三喺打幾種跟斗。 | ZS sik1 daa2 gei2 zung2 gan1dau2 ZS can hit several M somersault ‘ZS can do several kinds of somersault.’ |
| 4. 想 *soeng2* | desire | wish to | 李四想加入我喺個會。 | LS soeng2 gaal jap6 ngo5dei6 go3 wui2 LS wish join our M club ‘LS wishes to join our club.’ |
| 5. 要 *yiu3* | obligation | must |  | nei5 jat1 ding6 jiu3 lei4 aa3 you definitely must come FP ‘You definitely must come.’ |
| 6. 准 *zeon2* | permission | may |  |  | 准入。 | *zeon2* jap6 permit come-in ‘You can come in.’ |
We give below two lists from other authors for comparison. Kwok (1971:69) gives the following list of 10 words: 能夠 nang4gau3, 可以 ho2ji5, 可能 ho2nang4, 會 wui5, 應該 jing1goi1, 得 dakl, 肯 hang2, 敢 gam2, 係 hai6, and 有 jau5. Matthews and Yip (1994:229-247) give the following modal verbs: 會 wui5, 可以 ho2ji5, 識 sikl/曉 hiu2, 能夠 nang4gau3, 應該 jing1goi1, 要 jiu3, 吻使 m4sai2, and 想 soeng2. Other verbs mentioned in the same chapter include: 弄 zeon2, 肯 hang2, 希望 hei1mong6, 制 zai3, 願意 jyun6ji3, 敢 gam2, 夠膽 gau3daam2, 寧願 ning4jyun2, 總之 zung2zil, 只要 zi2jiu3. It can be seen that we are in broad agreement with these accounts. We have excluded certain words which do not qualify as auxiliaries according to our criteria, and we have added other words which in our view should be included.

Kwok’s account includes 得 dakl. In our view, since 得 dakl comes after verbs (and not before VPs), it should not be described as an auxiliary. 得 dakl will in any case need a separate account. (See Chao 1968:350-358 and 435-480; and Beijing Institute of Linguistics 1992 for a discussion of dakl. See also Wong, this volume).

3. Non-core Members (auxiliaries which are also main verbs)

As indicated in tables (30) and (31) above, some auxiliaries can also be used as main verbs. As an illustration of auxiliary-main verb overlapping, we offer some examples of their auxiliary as well as main verb use, and provide some statistics about these two different uses, where statistics are available.

3.1 俾 bei2

(32) Main verb:
千祈唔好俾個小朋友自己過馬路。
cin1kei4 m4 hou2 bei2 go3 siu2pang4jau5 ziu6gei2 gwo3 maa5lou6 for-heaven’s-sake not good let M kid oneself cross road
‘Don’t ever let the kid cross the road on his own.’

(33) Auxiliary verb:
圖書館今日唔俾入。
tou4syu1gun2 gam1jat6 m4 bei2 jap6 library today not allow enter
‘No one is allowed into the library today.’
3.2 配 pui3

(34) Main verb:

可唔可以配番啲種鈕？
ho2-m4-ho2ji5 pui3faan1 ni1 zung2 nau2
can-not-can match M button
‘Is it possible to match this button?’

(35) Main verb:

我驚佢配佢唔起啫。
go5 geng1 keoi5 pui3 nei5 m4 hei2 ze1
I afraid he match you not up FP
‘I’m afraid he isn’t a match for you.’

(36) Auxiliary verb:

你配唔配做我啲喺隊長？
nei5 pui3-m4-pui3 zou6 ngo5dei6 ge3 deoi6zoeng2
you good-not-good work our captain
‘Are you good enough to be our captain?’

3.3 識 sikl

As a main verb, sikl can take NP-objects but not complement clauses. Thus:

(37) 張三識李四。
ZS sikl LS
ZS know LS
‘ZS knows LS.’

(38) * 張三識李四泳水。
ZS sikl LS jau4seoi2
ZS know LS swim

It is possible to put aspect markers after sikl (as in (39)), which is not usually possible with auxiliaries.

(39) 李四識泳水。
LS sikljo2 jau4seoi2
LS know swim
‘LS has learned how to swim.’

30 instances of sikl are found in the text; 13 (43%) being auxiliaries, and 17 (57%) main verbs.
3.4 想 soeng2

想 soeng2 is usually used as an auxiliary, as in (40) but exceptionally as a main verb, as in (41).

(40) 張三想游水。
    ZS soeng2 jau4seoi2
    ZS want go swim
    ‘ZS wants to go swimming.’

(41) 張三想喺學生勤力啲讀書。
    ZS soeng2 di1 hok6saang1 kan4lik6di1 duk6syu1
    ZS want PL students hard study
    ‘ZS wants the students to work harder.’

When it is used as in the special sense of ‘think’ (main verb), aspect markers can be attached, as in (42a) below, but not when it is used as an auxiliary, as in (42b).

(42) a. 張三想嚟辦法。
    ZS soeng2gan2 baan6faat3
    ZS thinking way
    ‘ZS is thinking of a way to this.’

b. * 張三想喺游泳。
    ZS soeng2gan2 jau4seoi2
    ZS want swim

Our statistics for soeng2 are as follows: 52 instances are found in the text. Of these, 50 (96%) are auxiliaries; only 2 (4%) are main verbs.

3.5 要 jiu3 / 需要 seoi1jiu3 and 唔要 m4jiu3 /唔使 m4sai2

Like 想 soeng2, 要 jiu3 can be used as either a main verb or an auxiliary. As a main verb, it can mean ‘want’ or ‘require’. As an auxiliary, it can mean either ‘have to’ (obligation) or ‘want to’ (want).

(43) Main verb:

李四要茶。
    LS jiu3 caa4
    LS want tea
    ‘LS wants tea.’
(44) Auxiliary verb:

李四要飲茶。
LS jiu3 jam2 caa4
LS have-to/want drink tea
‘LS has to/wants to drink tea.’

要 jiu3 has two different negative forms: the regular form 唔要 m4jiu3 ‘doesn’t want’ (which can only be used as a main verb) and the irregular form 唔使 m4sai2 ‘need not’(which is usually used as an auxiliary).

(45) a. 李四唔要茶。
LS m4 jiu3 caa4
LS not want tea
‘LS doesn’t want tea.’

b. * 李四唔使茶。
LS m4 sai2 caa4
LS not have-to tea

(46) a. ?* 李四唔要飲茶。
LS m4 jiu3 jam2 caa4
LS not want drink tea

b. 李四唔使飲茶。
LS m4 sai2 jam2 caa4
LS not have-to drink tea
‘LS doesn’t have to drink tea.’

要 jiu3 can also be used as a main verb to mean ‘require’ (requiring someone to do something). When used in this way, the distinction between ‘want’ and ‘obligation’ is no longer relevant. In requiring someone to do something, I am making them do it. Hence either negative form is available.

(47) 李四唔王五去游水。
LS jiu3 WN heoi3 jau4seoi2
LS want WN go swimming
‘LS wants WN to go swimming.’

(48) a. 李四唔要王五去游水。
LS m4 jiu3 WN heoi3 jau4seoi2
LS doesn’t want WN go swimming
‘LS doesn’t want WN to go swimming.’

b. 李四唔使王五去游水。
LS m4 sai2 WN heoi3 jau4seoi2
LS not want WN go swimming
'LS doesn’t need WN to go swimming.'

The statistics on 要 jiu3 are as follows. Altogether 160 instances are found. 142 (88.75%) are auxiliaries; 18 are main verbs (11.25%). Thus, 要 jiu3 is used mainly as an auxiliary.

For some speakers, 需要 seoiljiu3 can be used interchangeably with 要 jiu3. For others, however, 需要 seoiljiu3 is a formal word, and can only be used as a main verb. It can also be used as a noun. But 要 jiu3 cannot be used in this way. Only 3 instances of seoiljiu3 are found in the text. In one instance it is used as a noun. In the other two instances, it is used as a main verb.

3.6 准 zeon2

(49) Main verb:

我准你坐喺我側邊。
go5 zeon2 nei5 co2 hoeng2 ngo5 zak1bin1
I allow you sit by my side
‘You can sit by my side.’

(50) Auxiliary verb:

唔准坐喺我側邊。
m4 zeon2 co2 hoeng2 ngo5 zak1bin1
not sit by my side
‘Don’t sit by my side.’

3.7 鍾意 zung1ji3

As a main verb, zung1ji3 can take objects or complement clauses.

(51) 張三鍾意王五。
ZS zung1ji3 WN
ZS love WN
‘ZS loves WN.’

(52) 李四鍾意細蚊仔乖啲。
LS zung1ji3 sai3man1zai2 gwaa1di1
LS like children good
‘LS likes children to be as good as gold.’

It is possible to put aspect markers such as 咁 jo2 after 鍾意 zung1ji3 when it is used as a main verb, as in (53), but not when it takes complement clauses, as in (54).
Our statistics for *zung1ji3* are as follows. 32 instances in all; 20 (62.5%) auxiliaries, and 12 (37.5%) main verbs.

4. **Common Auxiliaries in a Running Text**

In this final section, we give some statistics on the relative frequency of the more commonly used auxiliaries in a running text of 22,426 words.

4.1 係 hai6 ‘be’ and 有 jau5 ‘have’

<table>
<thead>
<tr>
<th></th>
<th>tokens</th>
<th>% of text</th>
<th>% of all verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>係 hai6</td>
<td>961</td>
<td>4.3</td>
<td>13.1</td>
</tr>
<tr>
<td>有 jau5 / 無 mou5</td>
<td>593</td>
<td>2.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Modal Auxiliaries</td>
<td>544</td>
<td>2.4</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,098</td>
<td>9.3</td>
<td>28.6</td>
</tr>
</tbody>
</table>
4.2 Modal Auxiliaries

<table>
<thead>
<tr>
<th></th>
<th>tokens</th>
<th>% of modal aux</th>
</tr>
</thead>
<tbody>
<tr>
<td>會 wui5 ‘will’</td>
<td>155</td>
<td>28.5</td>
</tr>
<tr>
<td>要 jiu3 ‘have to/ want to’</td>
<td>142</td>
<td>26.1</td>
</tr>
<tr>
<td>可以 ho2ji5 ‘can’</td>
<td>100</td>
<td>18.4</td>
</tr>
<tr>
<td>想 soeng2 ‘want to’</td>
<td>50</td>
<td>9.2</td>
</tr>
<tr>
<td>應該 jing1goi1 ‘should’</td>
<td>21</td>
<td>3.9</td>
</tr>
<tr>
<td>鍾意 zung1ji3 ‘love / like’</td>
<td>20</td>
<td>3.7</td>
</tr>
<tr>
<td>肯 hang2 ‘willing to’</td>
<td>17</td>
<td>3.1</td>
</tr>
<tr>
<td>識 sik1 ‘know (how to)’</td>
<td>13</td>
<td>2.4</td>
</tr>
<tr>
<td>能夠 nang4gau3 ‘be able to’</td>
<td>9</td>
<td>1.7</td>
</tr>
<tr>
<td>敢 gam2 ‘dare’</td>
<td>8</td>
<td>1.5</td>
</tr>
<tr>
<td>俾 bei2 ‘may’</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>值得 zik6dak1 ‘be worth’</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>願 jyun6 ‘be willing to’</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>配 pui3 ’good enough to be’</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>544</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The following table gives the frequency of occurrence of auxiliaries in the same text, as well as the frequencies of occurrence of the other word classes for comparison.

<table>
<thead>
<tr>
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<th>tokens</th>
<th>% of text</th>
</tr>
</thead>
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<td>pronouns</td>
<td>2,425</td>
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<tr>
<td>verbs</td>
<td>6,818</td>
<td>30.4</td>
</tr>
<tr>
<td>auxiliaries</td>
<td>544</td>
<td>2.4</td>
</tr>
<tr>
<td>adjectives</td>
<td>1,991</td>
<td>8.9</td>
</tr>
<tr>
<td>adverbs</td>
<td>3,278</td>
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<tr>
<td>prepositions</td>
<td>513</td>
<td>2.3</td>
</tr>
<tr>
<td>conjunctions</td>
<td>1,443</td>
<td>6.4</td>
</tr>
<tr>
<td>final particles</td>
<td>1,192</td>
<td>5.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22,426</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

5. Conclusion

In this paper, we have considered the rationale for having auxiliary verbs as a word class in Cantonese. We have given a list of the members of this class, and distinguished the core members from the non-core members. We have also given some statistics on their use in a running text.
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The Expression of Futurity in English and Cantonese Verbs

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1. Time and its Linguistic Expression

We take time to be a universal experience, and to be conceivable as past, present, and future. All three meanings can be expressed in Cantonese and English, in ways which are sometimes similar and sometimes different. English has two tenses: present (or non-past) and past, but it has no future tense in the sense that there is no grammatical affix in the language whose job is to express the meaning ‘future’. Cantonese has no pure tense of any kind. We confine our discussion in this paper mainly to verbs, and leave any consideration of time words and adverbials of time for consideration elsewhere.

2. Major Means of Expressing Futurity in the Two Languages

Our first task is to list, for each language, all the grammatical structures associated with the verb which are used to talk about events that will take place in the future. According to Leech (1987) and Quirk et al (1985), the list for English looks like this:

(1) a. will / shall + verb (inf)
   b. be going to + verb (inf)
   c. Present Progressive
   d. Simple present
   e. Will / Shall + progressive infinitive

This list and how the items on it are used to encode futurity are well documented in the literature. So for instance in the following sentence,

(2) Ruth is getting married in the summer.

the present progressive form is used to talk about an event which is to take place at a future point in time. What is less clear is whether some other modal auxiliaries such as may should be included in the list. A sentence like

(3) Jeff may help.

would seem to contain future as part of its meaning, and therefore would seem to argue for the inclusion of may. But may is not regarded by either Leech or Quirk as a marker of futurity. Rather it is treated as a means of expressing possibility --
essentially a sign of modality. But since sentence (4) below amounts to something like a contradiction, it would seem that future is part of the meaning conveyed by may after all.

(4) *He may come, but he won’t.

A comparison with Cantonese shows that two meaning components -- not one -- should be recognized here. The Cantonese equivalent of (4) is (5)

(5) Jeff ho2nang4 wui5 bong1sau2

In the Cantonese sentence, the meanings of possibility and future remain separate: the two meanings are coded separately in the adverb ho2nang4 and the auxiliary wui respectively. Indeed, the paraphrase of (5) in English is (6), which parallels the Cantonese sentence point by point:

(6) Perhaps Jeff will help.

It would therefore seem reasonable to say that the word may has two relevant features here, namely future and possibility.

Another potential candidate for the list is imperatives. Do imperative sentences like (7) have a future meaning?

(7) Well, you do it.

Again, it would seem that the imperative here does refer to a (possible) future action. If this is true, we should perhaps recognize imperatives too as a means of encoding future.

Turning now to Cantonese, our investigation yields the following list.

(8) a. 會 wui5 + verb
    b. base form of the verb (‘bare’ verb without auxiliaries or affixes)
    c. 想 soeng2 + verb
    d. 要 jiu3 + verb
    e. imperatives

Rather than give an account of each of the items on the list, we might as well consider immediately some points of comparison and contrast between similar items in Cantonese and English, and in the course of doing the comparisons we shall say something about each of the Cantonese forms.

3. Will and 會 wui5

The auxiliary 會 wui5 is by far the most commonly used means of encoding futurity in Cantonese. For example:
(9) a. Jeff 會幫佢手。
    Jeff wui5 bong1sau2.
    ‘Jeff will help.’

b. Jeff 吵會嘆做。
    Jeff m4 wui5 gam2 zou6.
    ‘Jeff won’t do that.’

c. Jeff 會唔會應承呢？
    Jeff wui5 m4 wui5 jing1sing4 nei1?
    ‘Will Jeff agree (to do that)?’

Similarly, in English one of the most common indicators of futurity is the auxiliary verb will/shall (‘ll).

Meanwhile, both auxiliary verbs have retained some modal uses in their respective languages. Leech (1987) mentions four modal meanings for will: willingness, insistence, intention, and predictability, as illustrated in the following examples.

(10) a. Robert will do anything to please his wife. (willingness)
    b. Will you keep quiet please? (insistence)
    c. I’ll send some Christmas cards this year. (intention)
    d. That’ll be Jeff, (coming in at the same time every day). (predictability)

With the possible exception of the third one, will does appear to have modal meanings which are distinct from future. The Cantonese equivalents of these sentences show that unlike will, wui5 does not have the same modal meanings.

(11) a. i. Robert 爲咗同佢太太，乜都肯做。
      Robert wai6zo2 tam3 keoi5 taa1taai2, mat1 dou1 hang2 zou6.

     ii. ?Robert 爲咗同佢太太，乜都會做。
         ?Robert wai6zo2 tam3 keoi5 taa1taai2, mat1 dou1 wui5 zou6.

b. i. 你喺靜啲好啲好？（你喺靜啲得唔得？）
      Nei5dei6 zing6 di1 hou2 m4 hou2?/Nei5dei6 zing6 di1 dak1 m4 dak1?

     ii. *你喺靜啲會唔會？
         *Nei5dei6 zing6 di1 wui5 m4 wui5?

c. 我今年會寄啲聖誕卡。
      Ngo5 gam1nin4 wui5 gei3 di1 sing3daan3kaat1

d. i. （梗係）Jeff 嘛。
      (Gang2) hai6 Jeff laak3.

     ii. *會（係）Jeff 嘛。
         *Wui (hai6) Jeff laak3.
But in fact 會 wui⁵ does have meanings other than future. For example, it can also be used in the sense of possibility. Matthews and Yip (1994:230) similarly have it on their list of modal auxiliaries and describe it as a word which can express, in addition to futurity, a range of modal meanings. Consider first some examples of wui⁵ being used in the sense of possibility:

(12)  a. 點解呢本書會咁流行啲？
Dim2gaa12 li1bun2 syu1 wui5 gam3 lau4hang4 ge2?
‘Why would this book be so popular?’

b. 佢嘅做唔會無原因嘅。
Keoi5 gam2 zou6 m4 wui5 mou5 jyun4jan1 ge3.
‘He must have a reason for doing that.’

c. Ken 打 tenis 咁叻，竟然會輸俾阿 Jeff。
Ken da2 tennis gam3 lek1, ging2jin4 wui5 syu1 bei2 Jeff.
‘Ken plays tennis so well, but incredibly he’s lost to Jeff.’
(i.e. The impossible has happened.)

d. Ken 點會輸俾佢啊？
Ken dim2 wui5 syu1 bei2 keoi5 aal?
‘How can Ken possibly lose to him?’

會 Wui5 can also be used to express the meaning of ‘ability’. This may sound superficially like Putonghua, but contrary to what one might expect, examples like (13) are not exactly very common, and ones like (14) are probably obsolete in Cantonese.

(13) 放心喇，我會嘅嘅。
Fong3sam1 la1, ngo5 wui5 ga3la3.
‘Don’t you worry, I’ll know what to do.’

(14) 佢真係好會講嘅。
?Keoi5 zan1hai6 hou2 wui5 gong2je5.
(Lit.) ‘He really knows how to speak.’ (i.e. He’s a really good speaker.)

Although some speakers may accept (14), it is now much more common to say:

(15) 佢真係好識講嘅。
Keoi5 zan1hai6 hou2 sik1 gong2je5.

4. Historical Sources of will and 會 wui⁵

Historically, both will and 會 wui⁵ have come from main verbs. In English the original main verb meant something like ‘intend’, ‘wish’ or ‘desire’. Cantonese 會 wui⁵ has three candidate ‘developmental pathways’ (Bybee et al. 1994):
       (Ota Tatsuo 1989:51)
   b. Main Verb ‘meet’ > Main Verb ‘chance upon/happen to’
       > Modal ‘obligation’ > Modal ‘future’ (Sun Shixin 1992:144)
   c. (Main Verb ‘meet’ >) Main Verb ‘understand’ > Modal ‘ability’
       > Modal ‘future’ > Modal ‘possibility’

The following examples have been used in the literature in support of the analyses.

(17) Examples illustrating possibility (a):

   a. 我已失義，會不相從許。（古詩源）
      I will definitely not accept your request. (definitely)

   b. 男兒居世，會當得數萬兵千匹騎著後耳。（三國志・魏書・崔炎傳）
      A man is not worthy of the name until he is made in charge of ten thousand soldiers and one thousand horses. (obligation)

(18) Examples illustrating possibility (b):

   a. 會天大雨，道不通。（史記・陳涉世家）
      It happened to be raining, and the roads were blocked. (chance)

   b. 人生在世，會當有業。（顏氏家訓・勉學）
      To live a worthwhile life, one should have a career. (obligation)

(19) Examples illustrating possibility (c):

   a. 閃彈一聲中，會盡天地情。（孟郊 “聾琴”）
      Listening to an evening of music, appreciating the feelings of heaven and earth. (understand) (Tang poetry)

   b. 她會游泳。
      She can (i.e. knows how to) / will swim.

We have not been able to confirm which of these three possibilities is the correct one. But the last of these appears to be more likely. It is still possible now (although only just, as we have seen) to use wui5 in the sense of ‘ability’, but not in the sense of ‘obligation’.

4. Base form of the verb

The second means of expressing futurity in Cantonese is through the use of the base form of the verb. By ‘the base form of the verb’ we mean the verb being used without any preceding auxiliaries or any aspect suffixes (e.g. 咱 zo2, 嚇 gan2, 過 gwo3, 吸 ha5).
In English the present tense may express futurity, but only in combination with an adverb expressing the time at which the event is to take place (some authors, for example, Leech 1987, say that the event in such cases is 'scheduled'); e.g.

(20) He goes there on Monday.

There are also many restrictions on the use of such combinations to express future time. For example the following sentence cannot be interpreted as referring to a scheduled event in the future, but has to be interpreted as habitual:

(21) I can’t stay -- I go to the library at five o’clock.

If the time at which an event is to take place cannot be fixed in advance, then the present tense does not have such a future meaning when it is used in combination with an adverb. For example:

(22) It rains tomorrow.

This can only mean ‘Every Sunday (or whatever day it is) it rains’, and not ‘it will rain tomorrow’. Similarly without the adverb no single future event is designated, but only a general truth, which includes the future. For example:

(23) a. It rains.
    b. He goes there.

In Cantonese the situation is not quite the same. The Cantonese base form may designate general truths and scheduled events just like the English present tense, but also unscheduled future events as well. In this latter usage it is normally translated by the English present progressive form. The following sentence has two English translations:

(24) 我要走嘅 -- 我五點鐘去圖書館。
    Ngo5 jiu3 zau2 la3 -- ngo5 ng5dim2zung1 heoi3 tou4syu1gun2.

    a. I can’t stay -- I go to the library at five o’clock. (habitual)
    b. I can’t stay -- I’m going to the library at five o’clock. (unscheduled)

5. Progressive

The Present Progressive in English can be used to express futurity, but the progressive in Cantonese cannot. Thus:

(25) a. The school choir is putting on a performance in the Music Festival.
    b. All the children are coming home for Christmas this year.
    c. I’m taking the kid to school tomorrow.

But:
(26)  a.  哥哥合唱團喺音樂節度搞嘅一個表演。
     *Hok6haau6 ge3 hap6coeng3tyun4 hai2 Jum1ngok6zi6t3 dou6
gaaau2gan2 jat1 go3 biu2jin2.

   b.  今年啲仔女全部返嚟屋企過聖誕。
     *Gam1nin4 di1 zai2neoi2 cyun4bou6 faan1gan2lai4 uk1kei2 gwo3
     Sing3daan3.

   c.  我喺日帶啲仔返學。
     *Ngo5 ting1jat6 daai3gan2 go3 zai2 faan1hok6

There are some apparent exceptions (mainly 來 lai4 and 去 heoi3) to this rule:

(27)  a.  阿雄來嚟噚噚。
     Aa3-Hung4 lai4gan2 ga3la3.
     ‘Aa-Hung is coming.’ (i.e. ‘Aa-Hung is on the way.’)

   b.  啲小朋友去噚噚噚噚。
     Di1 siu2pang3yau5 heoi3gan2 ga3la3wo3.
     ‘The children are going there.’ (i.e. ‘The children are on their way.’)

It may seem in these examples that the progressive form of the verbs 來 lai4
‘come’ and 去 heoi3 ‘go’ can indicate a future event. The truth is, however, that the
actions of coming and going would by their very nature imply a future end point -- a
destination being arrived at some time in the future. Thus, to say that someone is ‘on
the way’ implies that he or she will soon be arriving at the destination. The actual
arrival is of course a future event, but futurity here is a by-product of the actions of
coming and going. In other words, the meaning of future in such constructions is
derivative, not primary. A comparison between the two languages using the verb
‘arrive’ should make this difference clearer.

(28)  a.  They are arriving tomorrow.

   b.  佢哋聽日到嚟。
     *Heoi5dei6 ting1jat6 dou3gan2.

   c.  佢哋聽日到。
     Heoi5dei6 ting1jat6 dou3.

6. General vs. Immediate Future

A distinction can be made in either Cantonese or English between ‘general future’
and ‘imminent future’. In English, one of the main differences between will (and
shall) and be going to is that only the latter but not the former can be used to predict
the imminent occurrence of an event. (Leech 1987). Thus,
(29)  a. Look, the pencil’s going to fall.
     b. *Look, the pencil will fall.

None of the Cantonese forms can be used like be going to in this way. Imminent future is indicated in Cantonese through the use of adverbs such as zau6.

(30)  a. 枝不就跌嘅嘅。
       zi1 bat1 zau6 dit3 ga3la3
       ‘The pen’s going to fall!’

b. 學期就完嘅。
   hok6kei4 zau6 jyun4 la3
   ‘The term’s coming to an end soon.’

就 zau6 also occurs in the compound forms 就來 zau6lei4 and 就快 zau6faai3:

(31)  a. 我估佢哋就來宣佈結婚。
       ngo5 gu2 keoi5dei6 zau6lei4 syun1bou3 git3fan1
       ‘I bet they will announce their marriage soon’.

b. 我癱到就快瞓着嘅。
   ngo5 gui6 dou3 zau6faai3 fan3zoe6 la3
   ‘I’m so tired so tired that I can fall asleep any time now’.

It can be seen in the following examples that 就 zau6 is an adverb, not a modal auxiliary: (33) and (34) show that only 會 wui5 but not 就 zau6 can be negated or enter the A-not-A structure.

(32)  a. 佢就走。
       Keoi5 zau6 zau2
       ‘He’s about to go.’

b. 佢會走。
   Keoi5 wui5 zau2
   ‘He ’ll go.’

(33)  a. *佢唔就走。
       *Keoi5 m4 zau6 zau2

b. 佢唔會走。
   Keoi5 m4 wui5 zau2
   ‘He won’t go.’

(34)  a. *佢就唔就走？
       *Keoi5 zau6 m4 zau6 zau2?
7. 想 soeng2 and 要 jiu3 in Cantonese

Two other auxiliary verbs in Cantonese, 想 soeng2 and 要 jiu3, can also be used to express futurity, but these are minor forms in the sense that their main use is not to express future meanings, except in highly restricted environments. We examine each of these words in turn.

想 Soeng2 can be used to talk about future events provided these are to do with natural conditions or phenomena (e.g. the weather).

(35)

a. 個天想落雨。
go3 tin1 soeng2 lok6jyu5 (inanimate subject -- ‘about to’) 
(Lit.) ‘The sky wants to rain.’ (i.e. ‘It’s going to rain.’)

b. 塊樹葉想跌落來。
faai3 syu6jip6 soeng2 dit3 lok6lai4 laa3
(inanimate subject -- ‘about to’)  
(Lit.) ‘The leaf wants to fall.’ (i.e. ‘The leave is about to fall.’)

c. 想落雨。
soeng2 lok6jyu5 (weather verbs -- ‘about to’) 
‘It’s going to rain.’

d. 想打風。
soeng2 daa2fung1 (weather verbs -- ‘about to’) 
‘There’s going to be a typhoon.’

But the most common sense of 想 soeng2 is as a modal signalling the agent’s desires, wishes, or intentions, as in (36).

(36) ngo5 soeng2 heoi3 (animate subject -- ‘want/intend’) 
‘I want to go.’

English does not have this use of the verbs ‘want’, ‘desire’, or ‘intend’.

(37) *It wants to rain. / *The sky wants to rain.

要 Jiu3 has a very wide range of uses, which is summarized as follows:

(A) As a main verb:

(i) necessity/need
(38) a. Jeff 要四個人幫手。
    Jeff jiu3 sei3 go3 jan4 bong1sau2.
    'Jeff needs four people to help.'

    b. 咁件事要四個人做。
    Ni1 gin6 si6 jiu3 sei3 go3 jan4 zou6.
    'This thing needs to be done by four people.'

(ii) asked for / ordered (past)

(39) a. Mark 要咗杯咖啡。
    Mark jiu3zo2 bui1 gaa3fe1.
    'Mark asked for a coffee.'

    b. 我哋要咗兩碟菜。
    Ngo5dei6 jiu3zo2 loeng5 dip6 coi3.
    'We ordered two kinds of vegetable.'

(iii) take/took (wilfully or reluctantly)

(40) a. Jeff 要咗 May 枝筆。
    Jeff jiu3zo2 May zi1 bat1.
    'Jeff took May’s pen.'

    b. 唔好立亂要人喺啲嘅啊。
    M4 hou2 lap6lyun2 jiu3 jan4dei6 di1 je5 aa3
    'Don’t take other people’s things for no reason.'

    c. Helen 終於要啲嘅錢。
    Helen zung1jyu1 jiu3zo2 di1 cin2
    'Helen finally took the money'

(iv) Have (imperative)

(41) a. 要杯咖啡喇！
    Jiu3 bui1 gaa3fe1 laa1!
    'Have a coffee!'

    b. 佢話要喇要喇，嘅我就要啲嘅。
    Keoi5 waa6: ‘Jiu3 laa1, jiu3 laa1’. Gam2 ngo5 zau6 jiu3zo2 laa3.
    'He said, “Have it. Have it.” And so I took it.'

(B) As a modal auxiliary:

(v) obligation
(42) a. 你要勤力讀書。
   Nei5 jiu3 kan4lik6 duk6syu1
   ‘You should study hard.’

b. 我聽日要返學。
   Ngo5 ting1jat6 jiu3 faan1hok6
   ‘I have to go to school tomorrow.’

(vi) want to (desire)

(43) a. Sally 成日要買嘅。
   Sally seng4jat6 jiu3 maai5je5
   ‘Sally always wants to do shopping.’

b. 我都要去！
   Ngo5 dou1 jiu3 heoi3!
   ‘I want to go too!’

(vii) future

(44) a. (好似)要落雨嘅。
   (Hou2ci5) jiu3 lok6jyu5 gam2 wo3
   ‘(Looks as though) it’s going to rain.’

b. 要行嘅。
   Jiu3 haang4 laa3
   ‘We should go now.’

c. 我要行嘅。
   Ngo5 jiu3 haang4 laa3
   ‘I’ve got to go now.’

d. Kim 要走嘅。
   Kim jiu3 zau2 laa3
   ‘Kim is going now.’

We have given a fuller account of this verb in a separate paper (Luke & Nancarrow 1995), where it is also suggested that the historical source of 要 jiu3 is that of a main verb meaning ‘want’ or ‘desire’. Its basic use nowadays is however the expression of obligation.

10. Conclusion

In this paper, we have reviewed the major grammatical means for expressing the meaning of futurity in Cantonese and English. A comparison of the two languages shows that auxiliary verbs which historically have come from main verbs with the
meaning of desire, want, or ability are used in the modern languages to express various modalities as well as to encode futurity. This finding supports the grammaticization hypothesis proposed in Bybee, Perkins and Pagliuca (1994) according to which grammatical morphemes in many languages expressing future meanings would have lexical sources in earlier stages of the languages, and these words would have followed a small number of 'developmental pathways' in becoming markers of futurity in the process of grammaticization.

References


First auxiliaries and modality in child Cantonese

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This paper reports on the first auxiliaries acquired by Cantonese-speaking children. We have examined a child Cantonese language corpus (Lee et al 1991-94) and will report on the development of three pre-verbal auxiliaries: *ho2jii5 *can/may*, *gam2 *dare* and *wui5 *will/can*, and a post-verbal auxiliary, *dak1 *can*, in two young children, aged 1;08 to 2;05 for one child and 1;08 to 2;01 for the other.

The exposition reveals some problems in the research of the formal/syntactic and functional/semantic aspects of child grammars. One problem is to have to work with indeterminate issues in the adult grammar -- in the present case, what are auxiliary verbs in the Chinese language -- while other problems arise in deciding the functions of the modal auxiliaries as the children see them, based on nonidealized language data (Section 6).

To set the scene of the acquisition of auxiliaries, a review of some findings in the development of auxiliaries by Mandarin-speaking children and English-speaking children is given. This is followed by a report on early Cantonese auxiliaries -- three pre-verbal auxiliaries: *ho2jii5 *can/may*, *gam2 *dare* and *wui5 *will/can*, and a post-verbal auxiliary, *dak1 *can*. The reporting includes the number of tokens for each form, the onset time for each child, the linguistic environments of the occurrences of the forms, and the meanings that the children assign to them.

The findings will be summarised and some conclusions drawn in the final sections of this paper.

1. Auxiliaries or verbs?

Syntactic and semantic characterizations of auxiliaries that are claimed to be universal have been proposed (Steele et al. 1981, Palmer 1986). These state that auxiliaries: (a) must contain elements expressing tense or modality or both; (b) may express sentence and discourse level notions, such as question, evidential status, emphasis, negation, and also aspect and deontic notions and agreement with subject or object; (c) consist of a small, fixed, nonproductive set; (d) occur in specific phrase structure positions, especially the sentence-peripheral phrase structure position (first, second, or last constituent positions); (e) tend to be inflections or elements that may be phonologically reduced by contraction or cliticization.

For example, the English auxiliary system interacts with tense, modality, mood, constituent order, inflection, and ellipsis. The order of the auxiliary elements is: modal - have - progressive be - passive be (e.g. *may have been being cooked*). 'Modals' include: can, could, will, must, should, may, might, etc. and modals lack infinitival forms (e.g. *to can*). Other auxiliaries are: have, be (progressive), be (passive), and do.

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1 For a summary of formal features that English modal auxiliaries have, see Palmer 1986:33-34.
Relying on a relatively rich overt morphology, together with syntactic correlates such as word order, linguists can find support in the assignments of categories in a language. But Chinese is a morphologically impoverished language. This renders the assignments of parts-of-speech to words particularly difficult. The indeterminacy of category assignment can be shown in the case of auxiliaries and verbs, for example. Auxiliaries overlap distributionally with verbs in that both auxiliaries and verbs can (a) occur in A-not-A constructions, (b) be directly preceded by a negative particle, and (c) occur as an independent utterance.

Linguists do not always agree among themselves on category assignments. Li and Thompson (1981) argue for auxiliaries to be a separate category in Mandarin, while McCawley (1992) argues that auxiliaries are verbs. We will summarize the arguments on both sides to show that an uncontroversial structural definition of auxiliaries is hard to come by; and, in view of the indeterminate categorial status of auxiliaries, how we decide on what forms are the early Cantonese auxiliaries for our study.

Li and Thompson (1981:173-174) propose six distributional properties for Mandarin auxiliaries, to be distinguished from those of the verbs. McCawley (1992) uses strict subcategorization arguments to show that auxiliaries are a subclass of verbs. McCawley uses the Mandarin verb dasuan ‘intend’ (1992:213) to compare with one of Li and Thompson’s designated auxiliary verbs (1981:182-183), neng ‘be able to’, on the basis that both can take a surface complement V’. He shows that the auxiliary verbs designated by Li and Thompson behave like verbs such as dasuan, using the seven criteria for auxiliary verbs that they propose: (L&T = Li and Thompson, McC = McCawley)

(i) L&T: ‘An auxiliary verb must co-occur with a verb (or an 'understood' verb) (p. 173). McC: ‘Dasuan’ actually fails this supposed criterion of verbhood more badly than neng does, since the sort of context that licenses the omission of the complement of neng does not license the omission of the complement of dasuan.”

(ii) L&T: ‘An auxiliary verb does not take an aspect marker.’ (p. 173). McCawley admits that ‘Here, (referring to Item (3) of his paper, see Note 4.2) two of the forms with dasuan are in fact appreciably more acceptable than the corresponding forms with neng...’

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2 McC’s example 2:

a. Q: Ta neng bu neng tiaowu? A. Ta neng.  
   ‘Can he dance? Yes, he can’

   ‘Does he intend to go to Japan? Yes, he intends to/*0’
(iii) L&T: 'An auxiliary verb cannot be modified by intensifiers, such as *hen 'very' or *geng 'even more'. (p. 173). McC: 'Since most verbs cannot be combined with *hen or *geng, this is no test for verbhood... [but] for A-hood'.

(iv) L&T: 'An auxiliary verb cannot be nominalized.' McC: 'Since Li and Thompson's example omits the complement of *neng, it merely repeats the point of their first argument'.

(v) L&T: 'An auxiliary verb cannot occur before the subject.' McC: 'Verbs, whether main or auxiliary, that take a complement V do not allow the subject to be put after the verb.'

(vi) L&T: 'An auxiliary verb cannot take a direct object.' McC: 'The various verbs that take a complement V's differ with regard to whether a semantically appropriate NP can appear in place of the V; neng, like dasuan, does not allow that option.

(vii) L&T: 'With an auxiliary verb, ... the verb phrase (=McC's 'complement V') can never have a subject different from the subject of the auxiliary verb itself.' (p.175). McCawley says that this is the effect of the grammatical processes of 'Raising to subject' (like the English verb seem) or 'super-obligatory Equi' (e.g. try), and neng behaves like these uncontroversial verbs in this respect.

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3 McC's example 3:

a. Ta neng *-le/*-guo/*-zhe tiaowu.
   'He could/... dance'

b. Ta dasuan *-le/?-guo/?-zhe qu Riben.
   'He intended/... to go to Japan'

b'. Ta xuyao *-le/??-guo/??-zhe maicai.
   'He needed/... to go shopping (for groceries)'

4 L&T's example 6:

*ta shi neng de
3sg be can NOM

5 McC's example 7:

a. *Neng liangge ren tiaowu.
   'Two people can dance'

b. *Dasuan liangge ren qu Riben.
   'Two people intend to go to Japan'

6 McCawley's example 8:

a. *Ta neng neijian shi.
   *He can that job'

b. *Ta dasuan neijian shi.
As for Cantonese, Matthews and Yip (1994:59) regard auxiliaries as different from verbs in that they do not take aspect markers or verbal particles. An auxiliary must co-occur with a main verb to form a complete sentence; if they occur alone, the main verbs must be clear from the context. They give wui5 ‘will, would’ and ho2ji5 ‘can’ as examples of modal auxiliaries.

We will put on hold the indeterminacy in the structural definition of auxiliary verbs (in Mandarin) and turn to the status of auxiliaries in child grammars, with particular reference to the acquisition of child Cantonese.

2. Auxiliaries: a functional category?

Lee, Wong and Wong (1995), in studying acquisition of categories in Cantonese-speaking children, are also interested in how auxiliaries differ from main verbs as a category, primarily for a reason related to a controversial issue in language acquisition. In a nutshell, there are two opposing hypotheses concerning functional categories in child language. The ‘strong continuity hypothesis’ states that the categorial inventory of child grammar is the same as that of adult grammar. Functional categories like inflection, complementizer and determiner are present in early grammars (cf. Whitman, Lee and Lust 1991). The alternative view (cf. Radford 1990) states that the initial grammars of children (at around two years old) differ from adults’ in lacking functional categories; only lexical categories such as nouns, verbs, and adjectives are present at the earliest stage.


Preverbal modal auxiliaries are like verbs in that (a) they can occur alone as an independent utterance; (b) they can be negated, and (c) can participate in A-not-A structures. They differ from most verbs in taking VP complements, i.e., clausal complements with a null subject. In other words, one crucial property that distinguishes preverbal auxiliaries from main verbs is that the former cannot take a clausal complement with a lexical subject. Since all the arguments for auxiliary status can be accounted for in the main verb analysis, Lee, Wong and Wong treat all preverbal auxiliaries as a kind of verbs — the subject control verbs. They give ho2yi5 ‘can/may’, wui5 ‘will/can’, hang2 ‘will’ and nang4gau3 ‘able to’ as examples of pre-verbal modal auxiliaries.

In terms of categorial status, Lee, Wong and Wong found that their empirical child language data show that the postverbal modal auxiliary dak1 ‘can’ has a special status. This modal has only deontic meaning, indicating either ability or permission. Its distribution is clearly different from verbs. While dak1 shares the above properties (a-c) when it is used as a main verb, it occurs in distinct contexts:

(i) dak1 can be suffixed to the verb in any of the following environments: V NP; V resultative; and V directional complement. Examples are:
[V NP]: sik6 dak1 faan6 ‘eat-dak1-rice’ ‘can eat rice’
[V _resultative]: zou6 dak1 aam1 ‘do-dak1-right’ ‘have done (something) right’
[V direction complement]: lo2 dak1 jap6 heoi3 'bring-dak1-enter-go can bring (something) in'

(ii) When dak1 is negated, the negator must precede the main verb and cannot be inserted between it and the main verb:

m4 lo2 dak1 jap6 heoi3 'not allowed to bring (something) in'
*lo2 m4 dak1 jap6 heoi3

So there is some crucial evidence for auxiliary to be a syntactic category, and dak1 is taken as a canonical postverbal auxiliary. The researchers have discussed a possible formal representation, proposed by Lee (1994), to state the link between linguistic theory and acquisition. In this formal description, the category 'modal' is suffixed to verbs or the head of verbal compounds.

Lee's proposal (1994)

\[
\begin{align*}
\text{NegP} & \\
& \text{Neg'} \\
& \text{Neg} & \text{AspP} \\
& & \text{Asp'} \\
& & \text{Asp} & \text{ModP} \\
& & & \text{Mod'} \\
& & & \text{dak1} & \text{VP}
\end{align*}
\]

Lee (1994) argues that the deontic post-verbal dak1 is a bona fide auxiliary in Cantonese. In his analysis, all preverbal auxiliaries are treated as subject-control main verbs, and there is no overlapping in the distribution of the post-verbal auxiliary with that of the verbs. What really occupies the Aux position in a formal representation is the postverbal auxiliary. And by means of the process of Aux-lowering, Cantonese V-Aux constructions like sik6 dak1 ('eat-can' = 'can eat') are obtained.

Developmental data (Lee, Wong and Wong 1995) show that the preverbal modal auxiliaries wui3 'will/can', ho2yi5 'can/may' and m4sai2 'needn't' begin to develop around age 2; their onset is slightly later than the functional categories of classifier and aspect (from around 1 year 9 months). There is some evidence that the postverbal auxiliary dak1 appears at the same time as or earlier (by one to two months) than the preverbal modal auxiliaries.

To sum up the current working position of the Cantonese child language researchers such as Lee, Wong and Wong on modal auxiliaries: preverbal modal auxiliaries are a kind of verb, while the postverbal modal dak1 is a canonical postverbal modal auxiliary. The researchers are examining
their data to understand the regularities to see if they argue for the postverbal modal auxiliary being a functional category.

This paper will not engage in the category-assignment debate or in the lexical-versus-functional category debate in language acquisition. Child language studies show that core properties of syntax are acquired early. Lee, Wong and Wong’s study (1995) shows that Cantonese-speaking children’s grammatical competence also develops early. This paper is an exploratory investigation into young Cantonese-speaking children’s development of semantic competence. It aims to examine the modal meanings expressed in two young Cantonese-speaking children’s speech when they interacted with adults. One child was aged 1;08 to 2;05 when his language was recorded, the other was 1;08 to 2;01. We will look at three pre-verbal auxiliaries: *ho2ji5 'can/may', *gam2 'dare' and *wui5 'will/can', and a post-verbal auxiliary: *dak1 'can', that appear in their speech.

3. Cantonese auxiliaries

With regard to Cantonese auxiliaries, we take the position of Lee, Wong and Wong (described in Section 2), that is: preverbal auxiliaries are subject control verbs and postverbal auxiliary *dak1 is a distinct category. What we consider to be Cantonese auxiliaries are listed below, with their respective modal meanings. There are ten, with the last three *jiu3 'need', *m4sai2 'no need to' and *soeng2 'want' marked with the sign '?', to indicate that they are counted only when they function as subject control verbs (since these verbs are also used as transitive verbs: see Luke & Nancarrow, this volume).

(a) *dak1 ability 'can'
(b) *ho2ji5 ability 'can', permission 'may', potential 'can'
(c) *nang4gau3 ability 'can'
(d) *gam2 volition 'dare to'
(e) *wui5 ability 'can', intention 'will', prediction 'will'
(f) *jing1goi1 obligation / requirement 'should', prediction 'should'
(g) *hang2 intention 'will'
(h) '?' *jiu3 necessity 'need', prediction 'will'
(i) *m4sai2 necessity 'need not'
(j) '?' *soeng2 intention 'want', prediction 'will'

How does our list of Cantonese auxiliaries compare with those of other Cantonese linguists? We have seen in Section 1 of this paper that Matthews and Yip (1994), for example, regard auxiliaries as being different from main verbs. But having gone through the challenge of McCawley to Li and Thompson, and the attempt to justify *dak1 as a canonical auxiliary by Lee, Wong and Wong (1995), we think that references to common syntactic properties of auxiliaries cannot be established. Matthews & Yip (ibid. p.229) list the following as 'main modal verbs' under the notion 'Modality': possibility and permission -- *wui5 'will / would', *ho2ji5 'can / may'; ability -- *sik1, *hiu2 'know how', *nang4gau3 'be able'; obligation -- *jing1gai1 'should / ought to', necessity -- *jiu3 'want / need', *m4sai2 'need not' and volition -- *soeng2 'want' and *gam2 'dare' (ibid. p.237).
4. The modal meanings of auxiliaries

'Modality' is a semantic category that expresses concepts such as 'possibility', 'necessity', 'obligation', 'permission', 'intention', and so on. Modality has a range of meanings which is related to the beliefs and attitudes of the speaker (Goodluck 1991:127). Two types of modal meaning are commonly recognized. 'Epistemic' modality involves the notions of possibility and necessity and it also indicates the degree of commitment by the speaker to what he says. 'Deontic' modality involves the notions of 'obligation' and 'permission'. Some linguists (e.g. Guo 1993:316) also consider a third type of modal meaning known as 'dynamic' modality. It involves the notion of 'ability' and 'volition', and indicates the degree of certainty that the speaker has as to what he or someone can do.

Modality is expressed in language through various types of function words. In Cantonese, modal meanings can be expressed by preverbal and postverbal auxiliaries, sentence final particles, modal adverbs such as ho2nang4 'might' and jat1ding6 'must', and so on. Auxiliary verbs in Mandarin grammar can be termed neng-yuam dongtsyr, "can-wish" verbs (cf. Chao 1968:731). This indicates that the auxiliary verbs are used to express the speakers' assessment of ability, volition, probability, necessity, possibility, intention, degree of obligation, and so on. In English, the following modal auxiliaries are suggested: can, could, will, would, shall, should, may, might, must, ought, need, dare (e.g. Coates 1988:425).

The meanings of modal auxiliaries are complex and overlapping. It is not uncommon that a modal auxiliary can express several meanings and the meanings of the same modal differ in different contexts. For example, Lee, Wong and Wong (1995) point out that the Cantonese postverbal auxiliary dak1 'can' has the meaning of ability and permission; Guo (1993:321) points out that the Mandarin modal neng 'can' can have both dynamic meaning of 'able to' and deontic meaning 'permit'. Goodluck (1991:127) uses the sentence 'John must be honest' and says that 'must' can have the epistemic meaning of inference or the root meaning of obligation.

Since modality is important in conveying the speaker's attitudes, beliefs and intentions, to learn the linguistic forms expressing modality is an important task for a child learning a language in order to communicate successfully with others. The way to express modal meanings is complex, as shown by modal auxiliaries above. It is important to find out how young children use modal expressions and when children master the adult system of modal meanings.

The follow section gives a review of how these questions are addressed by citing studies of the development of auxiliaries by Mandarin-speaking children (Guo 1993) and English-speaking children (Coates 1988, Gerhardt 1991).

5. The development of auxiliaries in Mandarin-speaking and English-speaking children

Guo (1993a, b) finds that Mandarin-speaking children can use modal auxiliaries meaningfully by the age of three and the frequency or amount of using modals increases with age. A point that Guo makes is that the children predominantly use a particular kind of modal auxiliaries at different stages of their development. He also relates the auxiliaries used to their respective modal forces in order to describe the development of communicative competence of the children.
Guo studied Mandarin-speaking children of the age of 3, 5 and 7. He found that the 3-year-olds mainly used *hui* `know-how-to`, *neng* `can`, *yao* `strong want` and *xiang* `weak want` to express dynamic modal meaning of ability and volition. Besides, null subjects are used with these modal auxiliaries, and the null subject has definite reference: for example, a 3-year-old's utterance *yi jue jiu dei huai le* `if (you) bend (it), then (it) will break` (Guo 1993a:94). The deontic modal *dei* `hafta` is used to express prediction and to represent some general and generic social conventions and regulation that everyone is assumed to comply with: hence the use of a null subject, according to Guo. The modals used by the 3-year-olds are mainly dynamic modals. The use of the deontic modals reached the highest frequency only when the children were 5 years old (1993b:317). For example, *dei* `hafta` and *gai* `should` are frequently used to express demand or to give self-explanation. In the utterance *wo dei jian qi lai* `I hafta pick (it = a Lego piece) up` (1993a:94) the 5-year-old child expresses an obligation (to pick up a Lego piece which has been dropped onto the floor across the table). The child focuses on herself as the recipient of the modal force, and uses `I` as the subject. The 7-year-olds begin to use *neng* `can` as epistemic modals. An example: *gangting neng zai jia li ma?* `can a police station be in the home?` The children speak with authority and the second person pronoun is often used: ... *ni hai dei zuo* `... you still hafta to do (more)`.

Coates (1988) finds developmental differences in modal meanings in 8-year-old and 12-year-old children from the adults'. Coates gave her subjects cards with sentences containing modal auxiliaries or expressions. She asked them to sort the cards into piles, based on what they thought were similar in modal meanings. She used cluster analysis and presented the findings in dendrograms (pp. ibid. 428-432).

There are four distinct clusters for the adult group: the `epistemic possibility cluster` contains modals like *may, might, perhaps, possible that* and *probably*; the `possibility/ability/permission cluster` contains *can, could, nothing prevents, allowed, able, and possible for*; the `intention/prediction/futurity cluster` contains *will, shall, going to, and intend*; and the `obligation/necessity cluster` contains *must, should, ought, have got to, and obliged*. The four clusters are distinct but members in each cluster are tightly linked.

The dendrogram of the 8-year-olds' group shows four clusters: the `possibility cluster` contains *possible that, perhaps, possible for, probably, might, may and could*; the `obligation cluster` contains *must, have got to, should, ought and obliged*; the `prediction/futurity cluster` contains *will, shall, going to, intend* and what Coates thinks odd, *nothing prevents*, and the `ability/permission cluster` contains *can, allow and able*. The clusters are not distinct and the members within each cluster are loosely linked. This suggests that children at this age are not unanimous of what has similar meaning (ibid., 430). They also have confusion over *intend and nothing prevents*, are not familiar with *ought*, and are unable to distinguish between *possible that* and *possible for*. Besides, they don't have the meaning of `possibility` in *can*, or the adult meaning of *allowed*. In view of all this, Coates concludes that 8-year-old children have only a `rudimentary system of modal meaning` (ibid., 425). Coates also observes that epistemic modality occupies the small and lower part of the dendrogram while deontic occupies the larger and upper part. She suggests that this split can be related to the social context in which the children have experienced: `modal auxiliaries like must/should/ought and can are crucially linked to authority structures (parent/child, teacher/child) and meanings of "obligation" and "permission" are the first learnt for these items` (ibid., 430).
The dendrogram of the 12-year-olds is similar to that of the adults. The two ‘possibility clusters’ are in the upper half of the dendrogram and the ‘predication cluster’ and ‘obligation cluster’ are in the upper half. Members in the clusters are tightly linked. They can distinguish possible that from possible for and are familiar with ought. But they still hold the ‘centrality of allowed in mind’ and put intend in the ‘weak obligation group’ and words expressing ‘prediction/futurity’ in the ‘strong obligation group’. So Coates concludes that the 12-year-olds, system is ‘still not isomorphic with that of the adults’ (ibid., 433).

Gerhardt (1991) is interested in the difference in meaning and use of modal forms between adults and children. She looks at the English modals havea, needa and wanna in 3-year-old children’s speech. While adults use havea to refer to the conclusion of a practical argument, children interpret havea as an ‘external compulsion’ originated from the prescriptive power of the norms (ibid., 552). Furthermore, while adults’ choice of havea or have to over must is said to lack speaker’s involvement or desire, children use havea to get what they want. As for needa or need to, Gerhardt (ibid. p.572) says that children have the same semantic meaning of ‘internal compulsion’. Adults may use needa to consider a third person occurrence, to convey personal necessity based on external conditions, and to use it in a hypothetical way. Children, however, strictly adhere to speaker-hearer interaction and do not use needa based on external condition or in a hypothetical manner.

Focusing on the studies of Guo, Coates and Gerhardt, we can agree on the following. The acquisition of modality is developmental. Children’s modal system, in terms of the structure of meaning and use, is different from that of adults. An adult-like modal system may take the first fifteen years of life to master. Deontic and dynamic modal meanings develop earlier than epistemic modal meanings. These researchers may want to say something more to find an explanation for this. Children first use modality to express physical ability and personal desire, primarily that of their own. As they become less egocentric they will be sensitive to external, natural and social forces and conditions and learn epistemic modality to express possibility and probability and make hypotheses. In the interaction with adults, children learn the modal meaning of permission/prohibition and become proficient users of this particular modality when they are acculturated into the power structure of their worlds.

6. First auxiliaries in children learning Cantonese: post-verbal dāk1 and pre-verbal ho2ji5, gam2 and wui5

We have looked at the auxiliaries produced by two young Cantonese-speaking children. The data are from the Hong Kong Cantonese Child Language Corpus (Lee et al 1991-94). Audio-taped recording sessions were conducted with the individual children, when they were interacting with at least one adult at home. Recording took place fortnightly, with each recording session lasting 45 minutes on average. The language of the children as well as the adults were transcribed and computer-coded.

The language of a child named Tsuntsun (coded as ckt in the Corpus) was first taped-recorded when he was 1-year-5-months-22-days old (1;05;22). There were twenty-five taped-recording sessions with Tsuntsun. The last session was done when he was 2;07;02. The language of
another child, Bernard (coded as mhz), was first recorded when he was aged 1;07;00. Twenty-six recording sessions were done. Bernard was 2;08;06 at the last recording session.  

In the language of Tsuntsun and Bernard, we have found four auxiliaries. They are the post-verbal dak1 and the pre-verbal ho2ji5, gam2 and wui5.

*dak1* 'can' indicates either ability or permission. *dak1* may also be used alone as a predicate, meaning 'OK' (Matthews and Yip 1994:243). To illustrate: *dak1* has the meanings of 'permission' in sentence (a') below, 'potential' in (a''), 'ability' in (b) and 'OK' in (c).

(a') go3 ping4gwo2 sik6 dak1 (people/someone are/is permitted to eat the apple)

(a'') go3 ping4gwo2 sik6 dak1 (the apple can be eaten -- potential)

(b) ngo5 co5 dak1 zik6 (I can sit straight -- ability)

(c) 'sik3-m4-sik5 dak1?' 'dak1' ('can I eat it?' 'can this be eaten?' 'OK!')

*ho2ji5* may be glossed as 'can' or 'may' and has the deontic modality of permission/potential (d), and the epistemic modality of possibility (e).

(d) go3 ping4gwo2 ho2ji5 sik6 (you may/can eat the apple; the apple may/can be eaten)

(e) sei3jyut6 dou1 ho2ji5 hou2 dung3 gaa3 (April can be very cold)

*wui5* may be glossed as 'will', or 'would'. (f) shows the deontic meaning of 'volition/intention', (g) shows the epistemic sense of 'possibility' and (h) shows the epistemic sense of 'probability/prediction'.

(f) ngo3 wui5 heoi3 (I'll go)

(g) nei3 gam2 co3 wui5 dit3 gaa3 (you will fall sitting like this)

(h) go3 tin1 wui5 lok6 jyu5 (it'll rain)

Matthews and Yip (1994:230) point out that *wui5* has a complex set of meanings relating to possibility or probability, which include 'futurity or prediction', 'conditional', 'habitual action or occurrence' and 'know how to'.

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7 The language of Tsuntsun and Bernard was collected and transcribed by Alice Cheung.

8 Matthews and Yip (1994:242) say that the *dak1* construction may be modified by *hou2* 'very' and *gei2* 'quite' to indicate potential or ability. Based on their two examples, we take it that their 'potential' and 'ability' refer to deontic modality only, and thus agree with Lee, Wong and Wong (1995).


Gam2 can be roughly glossed as `dare' (i). It expresses the deontic modality of volition: the degree of commitment by the speaker to his propositions that are asserted with relative confidence on events of `futurity'/`probability'.

(i) ngo3 gam2 daa2 keoi5 (I dare to beat him up)

6.1 first appearances: age, number of tokens, syntactic environments of occurrences

Dak1 appears in Tsuntsun's and Bernard's speech at 1;08, and the pre-verbal auxiliaries of ho2ji5, gam2 and wui5 at around two to two-and-a-half. The order of occurrence of the auxiliaries is the same in both children: dak1, ho2yi5, gam2 and wui5.

In the children's speech, we have observed that not only does dak1 appear earlier, it has far more occurrences than any of the pre-verbal auxiliaries. Table 1 below shows the frequency in terms of number of tokens and the age of the child when an auxiliary first appears.

Table 1: first auxiliaries -- number of occurrences and age of children in first occurrences

<table>
<thead>
<tr>
<th>Child/Aux</th>
<th>Tsuntsun</th>
<th>Bernard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Token</td>
<td>Age of 1st Occurrence</td>
</tr>
<tr>
<td>dak1</td>
<td>263</td>
<td>1;08;00</td>
</tr>
<tr>
<td>ho2ji5</td>
<td>9</td>
<td>2;02;05</td>
</tr>
<tr>
<td>gam2</td>
<td>1</td>
<td>2;05;00</td>
</tr>
<tr>
<td>wui5</td>
<td>2</td>
<td>2;05;14</td>
</tr>
</tbody>
</table>

The four auxiliaries are found in two patterns in the language of Tsuntsun and Bernard:

- the bare form. The negative marker m4 can be found preceding the bare form, and sentence final particle, or sfp, such as ga3, a3, and lo1 can be found following the bare form.

- the verb-complement-taking form, e.g. ho2ji5 sik6, sik6 dak1 (sik6, `eat')

6.2 dak1 `can'

We will use an excerpt of Tsuntsun's speech containing the post-verbal auxiliary dak1 to illustrate the three forms or environments in which the auxiliary occurs: (a) bare form; (b) question form; (c) verb-complement-taking form.
Excerpt of Tsuntsun's speech containing dakl at 2:04:00

INV: ni1 go3 gam3 sai3 gaa3 co3 m4 co3 dakl &ga3?
   'this one so small can someone sit in it'
(CHI: m4 co3 dakl &a3.
   neg sit dakl sfp
   'can't sit'
INV: na4, keoi5 sin1 co3 dakl &ga1 &ma3.
   'look, only he can sit in it'
INV: hai6 mai6 &a3.
   'you see!'
(CHI: m4 dakl # m4 dakl &a3.
   neg dakl # neg dakl sfp
   'can't, can't'
INV: ni1 gaa3 dakl m4 dakl &a3?
   'how about this one'
(CHI: m4 dakl &a3?
   neg dakl sfp
   'can't'
INV: dim2 gaa2 m4 dakl &a3?
   'why can't it'
(CHI: ni1 dou6 m4 dakl &a3
   DEM CL neg dakl sfp
   'here can't'
INV: dim2 gaa2 m4 dakl &dze2?
   'why can't it'
(CHI: baa1 baa3!
   'bye!

This excerpt shows that Tsuntsun used patterns (a) the bare form and (c) the verb-complement-taking form of dakl to answer the adult's questions or to make a statement. Pattern (b), the question form, is not found in Tsuntsun's speech.

In Tsuntsun's and Bernard's language, we find more utterances of the bare form than of the verb-complement-taking form, and no question form. Of the 263 instances of dakl that Tsuntsun produced during the recording period (aged 1:05:22 - 2:07:00), 219 are bare forms, and the rest (44 tokens) are the verb-complement-taking form. Bernard (aged 1:07:00 - 2:08:06) produced 198 tokens of dakl, of which 146 are bare forms and there are no question forms.10

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9 The following abbreviations are used: CHI = child; INV = investigator; MOT = mother; & = sfp marker in coding; # = a pause; DEM = demonstrative; CL = classifier; EX = exclamation.

10 Tsuntsun's 263 instances of dakl include 2 instances of reduplicated dakl and Bernard's 198 includes 4 instances of reduplication.
The verbs that take dakl as suffix in the two children's language are:

Tsuntsun:
1-5 occurrences: bai2 'to put', be12 'to give', co3 'to sit', dam6 'to stomp on something', gei3 'to remember', juk1 'to move', jyun3 'to turn', sai2 'to wash', sik1 'to know', sik6 'to eat', waan2 'to play';
13 occurrences: hoi1 'to open'

Bernard:
1-3 occurrences: sai2 'to wash', caat3 'to rub', co3 'to sit', daa2-heoi3 'to hit-go', gwo3 'to cross', hoi1 'to open', jam2 'to drink', jau3-mou3 'to have or not' (Note 7), jung6 'to use', jyun3 'to turn', ling1 'to carry', mo3 'to not have', zyu6 'to live';
13 and 14 occurrences respectively: gei3 'to remember', sik6 'to eat'

6.3 ho2ji5 'can/may'

Tsuntsun's nine occurrences of ho2ji5 'can/may' are all bare forms, used as answers to adults' A-not-A questions of the form ho2-m4-ho2ji5. Bernard produced 24 instances of ho2ji5 during the recording period. Twenty-one are bare forms, used as answers to adults' A-not-A questions. Three are complement-taking forms.11 They are:

heoi3gaai1 'go-street' 'go outside'
pou3 'carry' (in ho2ji5 pou3 mau1maau1 'can carry the cat')
cit3 'cut' (in m4-ho2ji5 cit3 syut3gou1 'cannot cut ice cream')

Below is an excerpt of Bernard's speech containing the pre-verbal auxiliary ho2ji5 'can/may'. in the bare form (a) and the complement-taking form (c):

Excerpts of Bernard's speech containing ho2ji5 (2;00;03)

INV: beng6 zo2 aa3
(he) is sick
CHI: &nok6 &nok6
INV: keoi5 ho2-m4-ho2ji5 heoi3gaai1 aa3?
'can he go out?'
CHI: m4-ho2ji5
'he can't'
INV: o3, dim2gaai2 keoi5 m4-ho2ji5 heoi3gaai1 aa3?
'Oh, why can't he go out?'
CHI: beng6 &nok6
sick sfp
INV: haa2?
what?

11 An instance is not counted when Bernard repeated immediately what the adult had said – ngo5dei6 jau5 cin2 ho2ji5 mau13 je3 sik6 'we have money (and) can buy things to eat'.
(2,04,07)

INV: sik6 gam3 dou1 je5 ga3
   'you eat so much'
INV: gam2 &a4, tou5zai2 hou2 daai6 go3 &lo1
   'this way, the stomach will become very big'
INV: hai6 mai6 &a3?
   'yes?'
CHI: hou2 daai6 # daai6 # go3 # go3 # ho2ji5 pou3 maau1maau1
    very big big CL CL can carry cat
INV: ho2ji5 me1 &a2?
   'can what?'
CHI: pou3 maau1maau1 &a3
    carry cat sfp
INV: me1 &a2?
   'what?'

gam2 and wui5

The pre-verbal auxiliaries gam2 has the meaning of 'dare' and wui5, the meaning of
'will' or 'can'. Both gam2 and wui5 appear roughly at the same time, Tsuntsun at 2;05 and
Bernard shortly after two, and are one to three months after the emergence of ho2ji5, and
three to five months after the post-verbal auxiliary dak1. The number of occurrences of either
gam2 and wui5 is far fewer than dak1 or ho2ji5. There is more wui5 than gam2 in both
children's speech.

6.4 gam2 'dare'

gam2 in the two children's language is in the bare form, to answer adults' questions.
Bernard had two, and Tsuntsun had one utterance containing gam2.

In the first excerpt below, Bernard uses the negative form m4-gam2 to show his
acceptance of the adult's premonition. In the following ones, the children used gam2 to show
their courage and confidence, or the lack of it, to do something.

Bernard (2;00:03) Bernard has misbehaved and his mother is scolding him, asking whether he
'dare' misbehave again.

MOT: ji2hou6 gam2-m4-gam2 &a3?
   'in future dare-not-dare sfp?'
   'do you dare to do it (again) in future?'
CHI: m4-gam2
   not dare
MOT: ji2hau6 m4-gam2 &a3
   in future not dare sfp
   '(so remember) don't do it (again) in future'
Bernard (2;01;15) Bernard and the investigator are playing with toy furniture and have made a big bed. She asks him whether he 'dare' sit on it.

INV: nei5 gam2-m4-gam2 co5 &a3? 'do you dare to sit (on it)'
CHI: gam2 [whispers] '(I) dare'
INV: gam2 &a4 '(so you) dare (to sit on it)'

Tsuntsun (2;05;00) This is a conversation between the investigator and Tsuntsun.

INV: &ei3, nei5 gam2-m4-gam2 mo2 gaap3cung4 &a3? 'do you dare to touch the bugs?'
CHI: m4-gam2 &a1 'not dare'

6.5 wui5 'will'

We recorded four utterances of Bernard and two of Tsuntsun that contained wui5 'will/can'. The following excerpts show Bernard used the bare and verb-complement-taking forms of wui5.

Bernard: the bare form

(2;01;15)

INV: wui5-m4-wui5 lam3 &ga3? 'will (it) fall sfp?'
CHI: m4-wui5 'won't'
(Later)
INV: wui5-m4-wui5 dit3 &ga3? 'will (it) fall sfp?'
CHI: m4-wui5 &a4. 'won't sfp'

(2;05;04)

INV: wui5-m4-wui5 dit3 &ga3? 'will (it) fall sfp?'
CHI: m4-wui5 gaa3, &a3, daai6 daai6 go3, co3. 'won't sfp, EX, big big CL, sit'. '(it) won't (fall), it's big, sit down'
Bernard: complement-taking-form

(2:06:18)

CHI: *hou2 do1 ngaa4 zai2. 'many little teeth'
CHI: *wui5 ngaa5 jan4 &ga3.
   'will bite people sfp'
CHI: *ngo5 *hou2 geng1 &ga3 ##. 'I'm very scared'
CHI: *&ou3! '<exclamation>'

Tsuntsun's two occurrences of *wui5 are verb-complement-taking forms.

Tsuntsun: complement-taking form

(2:05:14)

INV: *ngo m4-wui5 dit3 &ge3
   'I won't fall'
CHI: *Tsuntsun m4-wui5 dit
   'Tsuntsun won't fall'

(2:06:18)

INV: ngaa3 &a4? 'bite?'
INV: ngaa3 bin1 go3 &a3? 'bite who?'
CHI: keoi3 wui5 ngaa3 &ga3 'he will bite'
INV: keoi3 wui5 ngaa3 &ga4? 'he will bite?'
INV: wai3 'Hey!'

The verbs following *wui5 are dit3 'fall' and ngaa3 'bit'. It shows that *wui5 for both children conveys the modal meaning of 'ability' or 'potential'.

7. Early modalities in Cantonese

We want to know what modal meanings the two children assign to the auxiliaries they use. To do this, we have looked at the utterances produced by the children containing the auxiliaries, together with the utterances produced by adults that precede the children's utterances.

We have already noted that a large number of the auxiliaries found in the children's utterances are in the bare form. They are the children's responses to adults' questions. In face of this large amount of auxiliaries in the bare form, what we have done is to look at the modal forces of the adults' utterances and conclude that the children show understanding of those modal forces by responding with the auxiliaries already 'prompted' in the adults' speech.
The following excerpts in which Bernard uses *ho2ji5* `can' in the bare form used in interacting with adults show that he not only understands its modal force, but can use the auxiliary to his advantage.

(2,04,07)
INV: *ho &la3, sik3 jyun4 faan6 ho-m-hoji tai2 din6si6 &a3?*
  `well, eat comp rice can watch tv?'
  `can (we) watch tv after supper?'
CHI: *ho2ji5 &a3.*
  `can sfp'

(2,08,06)
INV: *ho2-m4-ho2ji5 gam3 jai3 &ga?*
  `can (you be) so naughty sfp?'
CHI: *ho2ji5.*
  `can'

In the two excerpts, the investigator's used *ho2ji5* `can' to ask Bernard questions. The first question in the pragmatic sense is a prompt or suggestion; the deontic modal force is that of `permission'. She asked Bernard whether they could watch television after dinner. Bernard gleefully answered with *ho2ji5* plus a sentence-final-particle in the mid-level tone. The second question was meant to be an emphatic-rhetorical question; the deontic modal force is that of `prohibition'. Bernard's response was also *ho2ji5*, except this time it was used, without a particle, to challenge the investigator's authority.

Of the twenty-five utterances with *(m4)-ho2ji5* made by Bernard, twenty-two are answers to adults' *ho2-m4-ho2ji5* questions. These A-not-A questions by which the adults elicited responses from Bernard are predominantly questions asking for his `permission' to do something, asking about `possibility' or making a `request' (1,11;06 and 2,00;16 respectively).

(1,11;06)
INV: *ho2-m4-ho2ji5 hai2 ni1dou6 sai2 &a3?*
  `can be here wash sfp?'
  `can (we) wash here?'
CHI: *&ha6, m4-ho2ji5.*
  ex, can't (ex = exclamation)
(after two utterances by INV)
INV: *ho2-m4-ho2ji5 sik6 hon3bou2baau1 &a3?*
  `can (we) eat hamburger sfp?'
CHI: *ho2ji5*
  `can'
INV: *ho2-m4-ho2ji5 bong1 keoi5 zap1 faan1 &a3? can-neg help him pick comp sfp?
   'can (you) help him pick it up?'

CHI: *m4-ho2ji5 'can't'

Bernard, like an average child of his age, did not answer all adults' questions. Bernard
did not answer thirty-six a-not-a *ho2-m4-ho2ji5 questions that the adults asked, with those
questions showing modality of 'permission', 'request' and 'possibility'. This amounts to 60%.
With those that he answered (= 40%), they were answered appropriately. Rhetorical
questions do not require answers, and except for (2;08;06), cited above which Bernard teased
the investigator with, he didn't answer rhetorical questions.

Like children in similar stage of language development, Tsuntsun and Bernard did not
produce any questions (although they could answer wh-phrase questions, cf. Bernard's 2;00;03
and 2;04;07, cited in section 6.3). It is a well-known fact that children acquire wh-questions
late (for a cross-linguistic summary and acquisition of wh-questions by Cantonese-speaking
children, one may refer to Cheung 1995.)

All these data show that modal auxiliaries and sentence modality begin to be acquired
by Cantonese-speaking children as young as 1;11. We have pointed out that among the early
auxiliaries acquired by Cantonese-speaking children, dak1 'can' and ho2ji5 'can/may' far out-
number and appear earlier than gam2 'dare to' and wui5 'can/will'. The modal meanings
of these early auxiliaries are confined largely to deontic meanings of 'ability', 'potential'
and 'permission'.

8. Summary

In general, the syntactic and semantic development of Cantonese auxiliaries appears to
be gradual and extending. We can say that the acquisition of auxiliaries by Cantonese-speaking
children begins early, by age 1;8. This is comparable to the acquisition of Mandarin auxiliaries.
In a cross-sectional study of twenty-eight Mandarin-speaking children, Hsu and his team
(1987:103-105) report the emergence of hui (= wui5) at 1;6, keyi (= ho2ji5) and neng (=
nang4gau3, 'can') before the second birthday, gan (= gam2) at 2, keng (= hang2, 'willing')
and nenggou at 4;3, and yinggai (=jing1g0i1, 'should') at 4;5.

The modal meanings of these early auxiliaries are confined largely to deontic meanings,
showing 'ability', 'potential' and 'permission'.

The auxiliaries do not emerge all at once -- only four out of the proposed ten
auxiliaries are found at around age 2;05. these early auxiliaries exist in children's speech in the
bare form, or prefixed by a negator, or in the verb-taking form, but not in the a-not-a form, a
form used in interrogative constructions.
A specific finding is that the post-verbal auxiliary *dak1* is more advanced in development than the pre-verbal ones in the following ways: it appears earlier than the pre-verbal ones, by about three months; it has more occurrences and co-occurs with a larger number of verbs, than the pre-verbal auxiliaries. Although the larger number of occurrences of *dak1* may be attributed to the prompts by adults, that *dak1* may be enjoying a privileged status distinct from pre-verbal auxiliaries and may be a bona fide auxiliary in Cantonese is an attractive pursuit in the study of Cantonese grammar.

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Expanding the Scope of the Utterance-Final Position: Postposed Modals in Mandarin and Cantonese

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In the past decade there has been increased interest in what Y.R. Chao (1968) first described as afterthought. The phenomenon has been called transposition (Lu 1980), left-dislocation (Packard 1986), sentence inversion (Tai and Hu 1991) and repair by other investigators (Tao 1995). All these terms refer in one way or another to the phenomenon in Chinese, particularly in Beijing Mandarin, whereby elements of a sentence (or utterance) are moved to the final position. According to reports, the postposed element can be an adverbial, auxiliary, an object of a preposition or even a full NP or VP.

As in Beijing Mandarin, inversion is common in Cantonese. This paper looks at natural language data in both Mandarin and Cantonese and focuses on how modal auxiliaries and adverbs behave in the utterance-final position in Chinese and seeks to expand the scope of a grammaticalized post-sentential slot (cf. Packard and Shi 1986) by considering postposed modals. I argue that the propensity for modal auxiliaries and modal adverbs to be postposed to the sentence-final slot, where modal particles and other modal items are also commonly found, gives support to the argument that the position is being further grammaticalized for modality. In addition, I explore the relationship of these postposed modal verbs with utterance-final modal particles, both their overlapping functions and their co-occurrence constraints. Lastly, I argue that postposing is far too common in Cantonese to be dismissed as afterthought or performance error. Instead postposing should be seen as a fully valid feature of the informal speech register in Beijing Mandarin, Cantonese, and likely in most varieties of Chinese.

1.0 Sentence Inversion in Chinese

Postposing as a phenomenon is particularly characteristic of the casual speech register. Postposing has been noted in Chinese linguistics literature and is often said to be typical of Beijing speech. Y.R. Chao (1968) first described it as afterthought. The phenomenon has also been called transposition (Lu 1980), left-dislocation (Packard 1986), sentence inversion (Tai and Hu 1991), and repair by other investigators (Tao 1995). Following are several examples drawn from Tai and Hu (p.1):

(1) Beijing ren, ta?
    Beijing person, he
    'Is he a native of Beijing?'

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Lai-le ma, ni gege?
come-ASP PRT your brother
'Did your brother come?'

Jinlai ba, ni.
enter-come PRT you
'Come in, you!'

Ta you lai-le, keneng.
he again come-ASP possibly
'He might possibly come again.'

Zou-le ba, dagai.
leave-ASP PRT probably
'(He) has probably left.'

2.0 Mood and Modality

Palmer (1988:21) makes a distinction between mood and modality. Mood is restricted to a category expressed in the verbal morphology of the language, a morphosyntactic category of the verb paralleling tense and aspect. Modality on the other hand is a broader typological category. Since Chinese does not have verbal morphology per se, the concept of mood is not relevant to Chinese and the discussion here will be limited to expression of modality.

Modality in language can be divided conceptionally into Epistemic modality and Deontic modality. Epistemic modality is concerned with knowledge, belief or opinion rather than fact (Lyons 1977:681-2) By contrast, deontic modality is concerned with necessity or possibility of acts (Lyons 1977:823).

Epistemic modality can be either judgmental or evidential. Palmer suggests that there are at least four ways that a speaker may indicate that what he or she is saying is not fact:

(i) that he is speculating about it
e.g., It is possible that.../I think that ...

(ii) that he is presenting it as deduction
e.g., It is to be concluded that ... /I conclude that ...

(iii) that he has been told about it
e.g., It is said that ... /X said that ...

(iv) that it is a matter only of appearance, based on the evidence of (possibly fallible) senses.
e.g., It appears that...

(Palmer 1986: 51)

It has been suggested (Givon 1982:24; Palmer 1988) that there are two sub-systems of epistemic modality: Judgements and Evidentials. Judgements involve speculation,
opinions and deduction by the speaker whereas evidentials, as the name suggests, indicates the kind of evidence the speaker has for what is he is saying.

(i) Propositions which are taken for granted, via the force of diverse conventions, as unchallengeable by the hearer and thus requiring no evidentiary justification by the speaker.

(ii) Propositions that are asserted with relative confidence, are open to challenge by the hearer and thus require—or admit—evidentiary justification.

(iii) Propositions that are asserted with doubt as hypotheses and are thus beneath both challenge and evidentiary substantiation.

Type (i) refers to declaratives, (ii) and (iii) refer to evidentials and judgments respectively. Both judgements and evidentials can be seen as devices to indicate the speaker's wish to modify his commitment to the truth or strength of what he is saying. Chinese seems predominantly to have a judgment system as opposed to a evidential system though, as I will note below, the Cantonese quotative marker wo might be seen as an evidential marker. In practice it is hard to tell the difference between judgements and evidentials, since a person's judgment concerning what is observed is usually related to any available evidence. In any case, the distinction will not be crucial to my arguments here. References to modality will mostly refer to epistemic modality which is most characteristic of Chinese.

2.1 Modality in Chinese

Modality in Chinese is typically expressed though auxiliary verbs, adverbs as well as by final particles (hereafter, FP). Below are some Mandarin examples:

auxiliary verbs \( (neng, hui, keyi, gan, ken, yinggai, dei/bidei, xiang, xuyao, etc.) \)

(6) Wo hui lai 'I will come'

(7) laoshi yinggai naixing de 'Teachers should be patient'

Adverbs \( (dagai, keneng, duobian, haoxiang, yiding, yexu, etc.) \):

(8) Ta dagai qu 's/he most likely is going'

(9) Ta keneng lai 's/he possibly is coming'

Particles \( (a/ya, ba, de, le, ne, ma, ou, etc) \) Examples and glosses from Li and Thompson 1981:238)

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1 Li and Thompson among others argue that xiang and xuyao are not strictly speaking auxiliaries since they can stand apart from a main verb.
(10)  ba  'solicit agreement'

wo he ban bei ba
I 'drink half glass BA
'I'll drink half a glass, Ok?'

(11)  ou  'friendly warning'

wo yao da ni ou
I will hit you OU
'Let me tell you, if you do this, I will hit you'

There is a good deal of disagreement as to the meaning of the various FP's in Mandarin and in other varieties of Chinese. However, the argument is not crucial for the present discussion. It will be sufficient here to accept that most FP's are modal and discourse based.

Although FP's are found in many kinds of texts and speech contexts, they are especially common in casual speech registers and texts that attempt to mirror casual speech. By contrast, written texts tend to rely heavily on modal auxiliaries and modal adverbs to express modality. In formal, written prescriptive grammar the syntactic placement of these adverbs and auxiliaries is generally uncontroversial. However, as noted above, there is a tendency in causal speech to postpone auxiliary NP's and adverbal NP's to the utterance-final position where FP's and tags are also placed. This tendency again suggests the possibility that the post-sentential slot serves a special function for modality. Section 4 presents evidence from Mandarin and Cantonese for a restructuring of pre-verbal modals to the sentence-final position.

3.0 Data Base

The data for this paper are taken mainly from two sources. The Mandarin data are taken from Tai and Hu (1991), except when otherwise noted. Tai and Hu's data are a composite of various sources of recorded conversations of Beijing speakers. The Cantonese data are extracted from my own recordings of Hong Kong Cantonese speakers made between August 1989 and April 1990 (Bourgerie 1991).

Notes on the Hong Kong Cantonese Data. The data base contains language samples from three distinct speech registers. Language samples were first collected at the formal level (public university speeches and lay church talks). After the formal data from a speech was collected, my assistant2 or I asked the individual for an interview, which provided us with data at a second level of formality. The interview consisted of two parts. The first part contained structured background questions that were used both for speech data and to obtain personal background information that was used to construct speaker variables. The second part of the interview consisted of a wide range of questions concerning the participants' attitudes about Hong Kong society, culture, and language. Younger informants were asked about schools and friends. My association at the time

2. My assistant was a female, Hong Kong native of twenty-four years.
with the anthropology department at the Chinese University of Hong Kong made my questions about Hong Kong society natural.

The period of my fieldwork in Hong Kong happened to coincide with a period of extreme political importance to the people of Hong Kong namely the impending 1997 return of Hong Kong to the control of the People's Republic of China and the drafting of the Basic Law which is to govern post-1997 Hong Kong. Because this issue was clearly of great concern to nearly everyone during my fieldwork, which I completed less than nine years before the event. I included a series of questions about the issue. Virtually everyone was willing to talk about the topic, and it often elicited passionate and unguarded speech. It seemed natural for me to ask questions about this topic because it is something of likely interest to a foreigner.

For those people I knew well, the second part of the interview, and especially the 1997 question, elicited speech that went far beyond the structure of the interview. In many instances the speech was much like impromptu speech, and because of this tendency, I purposely kept the background portion of the interview quite structured so that it always seemed like an interview.

After concluding the formal interview questions, I made a clear signal that the interview was completed by thanking the participants for their participation and by putting away my interview sheet. I then asked them if they had any questions about what I was doing. Usually they had few questions, and we would begin talking about other subjects of mutual interest. Because I was often acquainted with other family members, I tried to withdraw and move around the home when possible. Most Hong Kong flats are small, and the activity is generally centered in one or two small rooms, making it easy to obtain fairly clear recordings of speech from anywhere in the room. This approach allowed me to record the impromptu speech of many of the participants. Recording in homes was fairly efficient because I interviewed various members of the same family, and then recorded their casual, impromptu speech.

Of some friends I asked general permission to record their speech when they visited my home socially, and some departmental colleagues allowed me the same privilege. Under some circumstances I was able to do limited, on-the-spot transcription without a recorder. The process just outlined provided me with three distinct genres of speech; nearly all examples cited in this paper were found in the two less formal registers.

4.0 Data Analysis

4.1 Mandarin Data
Among the inversion-type examples listed by Tai and Hu, we find the following:

Postposed Modal Adverbs:

(4) Ta you lai-le, keneng.
    he again come-ASP possibly
    'He might possibly come again.'

(12) ta you yao yanjiu zhei menr kexue le, (pause) keneng.
    He again want study this CL science PRT perhaps
    'He wants to study this science course ...perhaps.'
(5) Zou-le ba, dagai.
   leave-ASP PRT probably
   '(He) has probably left.'

Postposed Modal Auxiliaries

(13) Ni chi shenme, yao?
    You eat what, want
    'What do you want to eat?'

(14) Gan shenme, ta hui
    Do what, he can
    'What can he do?'

Postposed Modal Verbs

(15) Ban sha bu sha ba, ni xiang.
    Half foolish NEG foolish PRT you think
    '(It is) semi-automatic, you know.'

(16) Bu hui jia le, wo zhunbei.
    Not go home PRT, I plan
    'I plan not to go home'

(17) Jintian bijiao leng, wo juede.
    Today comparatively cold, I feel
    'I feel that it is a kind of cold today.'

4.2 Cantonese Data

As in Beijing Mandarin, Cantonese allows the inversion of a wide variety of sentence elements. However, what is striking about the Cantonese data as compared to the Mandarin data is the apparently greater propensity for modal auxiliary NP's to appear in the utterance final slot. In addition the auxiliaries may appear in the slot alone or as part of a larger utterance. Tai and Hu's data report only two instances of a postposed modal auxiliary, and in just one of those instances did the auxiliary appear by itself (again note the occurrence of yao in #13 above). Moreover, yao is not a prototypical auxiliary according to many analyses (cf. Li and Thompson 1981) since unlike most auxiliaries, it can generally stand alone and can take a direct object. In contrast to reports concerning Mandarin, Cantonese postposes auxiliaries quite freely (modal auxiliaries included). Note the following examples taken from taped material:
Postposed Auxiliaries

(18) jat1zan6 gaa1sik1, wui5. in a moment explain will 'I'll explain in a moment'

(19) jau5si6 wui5 hou2di1, wui5 a3. sometimes will better will PART 'Sometimes it'll be better, it will'

(20) haau2 dai6mei5, jing1goi1. test last should '(he) should test last'

(21) jat1zan6 faan1lei4, jing1goi1 in a moment return should 'she should return in a moment'

(22) <mommy> hai6 hou2 sek3 nei5dei6, jing1goi1. is very love you plural should 'your mother must really love you'

Postposed Modal Verbs

(23) seng4hap6 leng3di1, ngo5 gok3dak1. become prettier I feel 'It's become prettier, I feel.'

(24) duk6syu1 hoi1sam1 m4duk6syu1 hoi1sam1, nei5 gok3dak1? study happy not-study happy you feel 'Don't you think you will be happy whether or not you study?'

(25) keoi5dei6 mou5 mat1 hou2, gok3dak1 they not-have anything good, (I) feel 'They don't have anything good at all, I don't feel'

(26) hai6 m4ngaam1ge3, gok3dak1. is not right (I) feel I don't think it's right'

(27) dou1 mou5jung6, ngo5 nam2. all useless I think I think it's all useless
Postposed Modal Adverbs

(28) nei5 hou2 gui6, **hou2ci5**
    you very tired seem
    'You seem very tired.'

(29) gaa1ting4 jap6bin6 a3...
    family within PART
    ngo5dei6 jau5 jat1di1 hou2 dak1bit6 ge3, **hou2ci5**
    we have some very special PART seem
    'In our family... we seem to have something very special.'

(30) hai6 jan1wai6 fuh6mou5 deoi3 ngo5 m4hou2, **ho2nang4**
    is because parents toward me not-good perhaps
    'It is perhaps because my parents were not very good to me.'

(31) hai6 tin1hei3 ge3 man6tai4, **ho2nang4**
    is weather PART question **perhaps**
    'Perhaps its a weather problem.'

(32) sing1kei4saam1 seung5tong4, **do1sou3**
    Wednesday go to class usually
    '(I) usually go to class on Wednesday.'

(33) Ou3mun4 ge3 pou4tou4nga4jan4 sik1 Jing1man4 ge3, **do1sou3**
    Macao PART Portuguese know English PART usually
    'Macao Portuguese usually know English.'

Of the 15 Cantonese examples above, only # 24 and #27 involve a subject postposed together with a modal.

5.0 Discussion

5.1 Modal Particles
As with inverted sentences, utterance-final particles are found most commonly in informal speech. Li and Thompson (1981:238) list six final particles for standard Mandarin which I have noted earlier:

- **le**  'currently relevant state'
- **ne**  'response to expectation'
- **ba**  'solicit agreement'
- **ou**  'friendly warning'
- **a/ya** 'reduce forcefully'
- **ma**  'question'
As already mentioned, there is considerable debate as to the meaning of these and other particles in Chinese, but it is generally accepted that the FP's are modal in nature. With the possible exception of question particle *ma*, all of the FP's above clearly serve to modify the force of an utterance. However, some have argued that in a broad sense the question particle *ma* in Mandarin also functions modally, since a question indicates that the speaker does not know whether or not the sentence is true. Moreover, many have argued (see Li and Thompson 1981: 549-50) that *ma* questions in Mandarin come with an assumption on the part of the speaker. In such an analysis, *ma* also affects the mood of the utterance and may therefore be treated as a modal FP as well.

In comparison to Mandarin, Cantonese has a far richer and more complex particle system. It is well beyond the scope of this paper to give even a rough listing of Cantonese FP's. Kwok (1984:8) lists 30 basic FP's for Cantonese. Below are examples of four commonly occurring Cantonese FP's along with a basic gloss:

- **gwa** 'conjecture'
- **me** 'surprise'
- **lo** 'pointing out the obvious'
- **wo** 'quotative, extra-ken'

In addition to these four, Cantonese has rough equivalents to the six basic Mandarin FP's noted above.

### 5.2 The relationship between postposed modals and FP's

In some instances postposed modals co-occur with FP's in the post-sentential slot. When the two elements do co-occur the postposed modal occurs after the FP, unless the FP is a part of the postposed phrase (cf. #19). Note Mandarin examples #5 and #15 again:

(5) Zou-le ba, dagaɪ. leave-ASP PRT probably '(He) has probably left.'

(15) Ban sha bu sha ba, ni xiɑng. Half foolish NEG foolish PRT you think '(It is) semi-automatic, you know.'

One might wonder why more than one expression of modality is needed in the utterance-final position. However, multiple and redundant expression of modality is quite acceptable in Chinese as it is in many languages. Note, for example, the English and Cantonese:

(34) I think he most likely will go.

(35) ngo5 nam3 m4wui5 suk1 dak1 taai3 do1 ge3 gwaa3 I think not will shrink too much ge + gwa 'I don't think that it will shrink too much. It probably won't'

(Kwok 1984:66)

In addition, multiple modal FP's are common in Cantonese, each retaining its individual force. Note the following example from Kwok (1984:93) below:
(36) jin4hau6 neii5 sik6jyun4 aan3 sin1 faan1lei4 la3 wo4
afterwards you eat-ASP lunch before return come LA WO
'Oh then I suppose you come back after you've had lunch?'

A hypothetical Cantonese example serves to illustrate the possible sentence configurations for FPs and postposed modals:

(37) heoi3 Hoeng1 Gong2
    go    Hong Kong
'I am going to Hong Kong'

(38) heoi3 Hoeng1 Gong2, ho2nang4
    go    Hong Kong    perhaps
'Perhaps I'll go to Hong Kong'

(39) heoi3 Hoeng1 Gong2 gwaa3
    go    Hong Kong    FP (conjecture)
'I suppose that I'll go to Hong Kong'

(40) ho2nang4 heoi3 Hoeng1 Gong2
    perhaps    go    Hong Kong
'Perhaps I'll go to Hong Kong'

(41) heoi3 Hoeng1 Gong2 gwaa3 ho2nang4
    go    Hong Kong    FP (conjecture)    perhaps
'I suppose that perhaps I'll go to Hong Kong'

5.3 Ordering

Given the variety of elements that can occur and co-occur in the utterance-final slot we now must treat ordering within the slot. Besides the postposed material, particles (and in Cantonese, multiple particles) and tag questions can occur in the utterance-final position. We need to consider what is final, what is initial or medial within the slot. As mentioned in the previous section, when both postposed elements and a particle occur together in the utterance final position, then the postposed element always follows the particle (cf example 39 and others above). Likewise, tag questions must follow particles. I have not encountered any examples of tags, particles and postposed elements together.

Because of the strict ordering, one might argue that there are in fact two slots and not one. However, we see in the case of Cantonese that different sorts of particles co-occur in a particular order within the utterance-final slot. Note the following hypothetical Cantonese examples:

(36a) jin4hau6 neii5 sik6jyun4 aan3 sin1 faan1lei4 la3 wo4
afterward you eat-finish lunch then come back PRT PRT
"Then when you've finished lunch, come back here, okay?"

(36b) * jin4hau6 neii5 sik6jyun4 aan3 sin1 faan1lei4 wo4 la3.
Whether we argue for multiple slots or one slot with an imposed ordering, it is clear that all the items occurring in the utterance-final position stand apart from the main utterance. Östman (1982:149) gives four prototypical features for pragmatic particles:

Typically, a pragmatic particle would be (a) short, and (b) prosodically subordinated to another word. It would (c) resist clear lexical specification and be propositionally empty (i.e., it would not be a part of the propositional content of the sentence). Furthermore, it would (d) tend to occur in some sense cut off from, or on a higher level than, the rest of the utterance, at the same time as it tends to modify that utterance as a whole.

Though postposed pre-verbal elements do not fit Östman's first two criteria, the last two have some relevance. They are not usually a direct part of the propositional content of the main utterance and tend to modify the force of the utterance as a whole. I do not suggest that postposed modals be interpreted as particles, but that particles and postposed elements---especially postposed modal elements---have overlapping and related functions. Their co-occurrence in the utterance-final slot along with other modals suggests that one of the main functions of the position is to modulate the utterance as a

5.4 Repair and Afterthought

As noted earlier, Tai and Hu (1991) suggest three motivations for the inverted sentence: 

*thematization, repair* and *afterthought*. Although the arguments in support of the motivations are convincing, the terms *repair* and *afterthought* are somewhat misleading in that they imply performance error. As is clear from Tai and Hu's data as well as my own, afterthought and repair are far too common to be considered errors in the ordinary sense of the word.

3 Word order variation from the prescriptive, formal norm is a common manifestation of the informal speech register. Of course, this is not to suggest that speakers do not make errors or repair in some instances, but that much of what is called afterthought and repair is a function of the inherent character of spontaneous speech and its reactive nature. They should not be seen as errors, but as devices to modify the mood of an utterance as a near instantaneous reaction to one's partner in conversation. The speaker is spontaneously adapting his or her speech to the situation. In that sense, we have afterthought, or perhaps more accurately, "ongoing thought."4

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3 Packard and Shi report that 20% of the utterances in their 10 hours of transcription, included some type kind of postposition. Guo's (1992) data show just 6%.

4 Guo (1992) suggests a metalinguistic argument, whereby the post-sentential slot is used for ongoing commentary on the speaker’s discourse.
5.5 Grammaticalization of the Sentence-final slot

As illustrated by the data presented, there is a tendency for modal information to be carried in the post-sentential slot or slots. In addition to modal particles and postposed pre-verbal modal information, rising intonation and tag-questions (e.g., *shi bushi, dui buhui*) also are post-sentential devices for modifying the tone and mood of an utterance. However, just as not all auxiliary verbs express modality, not all postposed material in Chinese is modal in nature. Indeed, the data show a large number of post-posed nouns. However, the postposed modal elements along with other utterance-final modal devices seem to suggest some degree of grammaticalization of the utterance-final slot for modality.

Packard and Shi (1986:11) -- without focusing on modality -- suggest that a grammaticalization of the slot may be a part of an ongoing change related to an overall word order shift from SVO to SOV\(^5\). They note that prepositional-type function words often occurred in the sentence-final position in Archaic Chinese, later shifting to pre-verbal position in the late Han (see Huang 1978 and Dobson 1964). They go on to suggest that the postposing phenomenon may be a reversion to the earlier pattern -- a competition between pre-verbal (or second position) and sentence-final positioning of function words now called prepositional.

I would like to suggest that both placements have little to do with change, but that the so-called postposed placement exists side-by-side with the preverbal placement as a legitimate feature of certain informal speech registers.\(^6\) Interactive conversation often calls for reaction to particulars of ongoing discourse. Since written discourse usually is not interactive, one would not expect the kind of *inverted* word order described here. In fact, written discourse does not seem to use FP's widely. Because written, formal discourse is taken as the prescriptive norm, it is not surprising that inverted word order is seen as an aberration or as error. All the terms used to describe the phenomenon implicitly accept that the word order is an aberration: *Repair, afterthought, inversion, postposition*, etc. Indeed, postposed forms are aberrations, but only from the prescriptive, often written, norm.

It seems quite possible that both forms existed historically along register lines. Our relative dearth of vernacular data for early periods of the language may lead to overgeneralization concerning word order of earlier non-literary language. Ultimately, any analysis will have to be solved with more empirical evidence. Although vernacular data for the historical question is limited, close attention to recorded modern Chinese speech should help test assertions concerning the postposing phenomenon.

\(^5\) See Chu (1984) for a summary of the literature on word order change in Chinese.

\(^6\) Lambrecht (1981) notes a similar postposing phenomenon in his discussion of topic and antitopic in non-standard French. He argues that the postposed antitopic is a typical feature of the informal register of (what he calls nonstandard) French.
5.6 A Beijing Phenomenon?

It now seems clear that postposing or inversion is not simply a Beijing phenomenon as it occurs widely in modern Chinese. As shown by the data here, postposing occurs widely in the informal register of Cantonese and most likely in many if not all varieties of Chinese that have informal register. Although the present paper does not quantify the frequency of occurrence of postposing in Cantonese, it is clear from my data that the colloquial stratum of the Cantonese is replete with postposing, and that it is a feature of the informal language. To the extent that educated native speakers---on whose speech we typically base the standard language---regularly and strategically use postposing as a pragmatic or metalinguistic strategy, we cannot always write it off as bad language. I believe that postposing is not peculiar to the colloquial stratum of Beijing Mandarin or of Cantonese, but can likely be found in any informal variety of Chinese. Only our traditional focus on the more formal registers keeps us from noting it more often.

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7 The phenomenon is not seen widely in Putonghua because Putonghua is an idealized form of Chinese lacking a true informal register (see Sanders and He 1991). See also Barnes 1982, Ramsey 1987: chapter 1, and Norman 1988: chapter 10 for discussions of the creation of and promotion of the Putonghua standard.

8 As Tai and Hu (1991) observe for Beijing Mandarin, there are at least several motivations for the inverted word order——only one of which is error.

9 Indeed, I have encountered resistance, and even disdain from language teachers, linguists, and students——both native and non-native alike——concerning the 'legitimation' of postposing. Still, I am not arguing for inclusion of the postposing phenomenon in pedagogical treatments of Cantonese or Mandarin, but that we recognize it as a strategy that native speakers employ, and as such treat it as an important pragmatic feature of the Chinese language.
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