

中央研究院歷史語言研究所會議論文集之二

中國境內語言 暨語言學

第二輯 歷史語言學

李壬癸
黃居仁 編輯
湯志真

中華民國 臺北

中華民國八十三年五月

出版說明

中央研究院歷史語言研究所語言組自從民國七十九(1990)年七月起每隔一、二年舉辦一次「中國境內語言暨語言學國際研討會」。第一屆會議的主題是漢語方言，會議論文集業已出版，所收的論文有25篇，外加1篇附錄。

第二屆在1991年8月召開，會議的主題是歷史語言學。報名參加的人數比第一屆還多，如期提出論文摘要的有108人。經過評審小組仔細篩選之後，錄取其中29篇在研討會上發表。全文修訂稿經過正常手續審查通過刊登的卻只有20篇，外加4篇專題演講稿共為24篇。少數論文因特殊緣故改在其他刊物刊登，因此未收入本論文集。這兩屆會議都在中央研究院召開。

這一屆的研討會主題既然是歷史語言學，因此所提有關這個領域的有多篇會議論文、專題演講、座談會也都是環繞著這個主題。論文內容有歷史的，也有現代的；有語音的，也有語法的；絕大多數為漢語，本來也有兩篇討論少數民族語言的論文，但卻改在較專門的期刊上發表了。

中國境內的語言分屬五大語系，而這兩屆的論文都集中在漢藏語系，尤其是漢語。這種現象並不令人感到意外。只是盼望大家今後能多關注少數民族的語言，特別是面臨滅絕危機的語言研究，包括阿爾泰語系、侗傣語系、南亞語系、南島語系的語言研究。

這一輯內容的安排，是把專題演講的4篇放在前面，依通論、語音、語法的次序排列。其餘20篇論文依歷史語音、語法、構詞以及現代語音、語法、其他兩大類的次序排列。此次會議的經過、各篇論文的主要內容、討論的要點等都已見於徐芳敏小姐(1992)的「第二屆中國境內語言暨語言學國際研討會紀要」(《漢學研究通訊》11.1: 14-20, 11.2: 121-127)或蘇宜青小姐(Su 1992, *Journal of Chinese Linguistics* 20.2: 337-342)。

本集論文大都附有摘要，並採用較本文為小的字體。摘要一般附於本文之前，唯摘要與本文不屬同一語言者，則改列在本文之後。為方便讀者的辨認和引

用，在目錄中並舉每一位作者的中文與英文姓名。

籌備會議期間，中研院史語所語言組的同仁都投入相當多的人力、物力、精神，實際負責事務的黃居仁先生和王幸真小姐更是不分晝夜、任勞任怨。會後論文集的編印工作由湯志真小姐負責，也是以極負責認真的態度完成這項艱難而又繁瑣的任務。本組研究人員本身的研究工作因此受到影響，少寫一些論文也在所不惜，只希望出席該次會議和閱讀本論文集的讀者都覺得很有收穫，就是我們最大的報償和願望了。

第三屆會議的主題是詞彙與構詞，於1992年7月初在清華大學召開。第四屆會議的主題是語言類型 (typology)，訂於1994年7月下旬在中央研究院召開，論文集也都將在歷史語言研究所出版，成爲一個系列。

李 壬 癸

1993, 8.14.

目 錄

| | |
|--|-----|
| 出版說明 | i |
| 語言變化的機理 (Mechanisms of Language Change) | |
| 王士元 (William S. Y. Wang) | 1 |
| 漢語上古音的元音問題 | |
| 丁邦新 (Pang-hsin Ting) | 21 |
| 關於上古音的四個假設 | |
| 白一平 (William H. Baxter III) | 41 |
| 唐代、宋代共同語的語法和現代方言的語法 | |
| 梅祖麟 (Tsu-Lin Mei) | 61 |
| Reconstructing Scenarios of Sound Change | |
| 陳淵泉 (Matthew Y. Chen) | 99 |
| 劉宋時期在漢語音韻史上的地位——兼論音韻史的分期問題 | |
| 何大安 (Dah-an Ho) | 125 |
| 《日本寄語》所反映的明代吳語聲調 | |
| 木津祐子 (Kizu Yuko) | 139 |
| A Theory of the Bifurcation of the Middle Chinese Voiced Syllable-initial Stops and Affricates into Aspirates and Unaspirates after Devoicing | |
| 徐雲揚 (Eric Zee) | 173 |
| Post-stopped Nasals and Lateral Flaps in the Zhongshan (Yue) Dialect: A Study of a Mid-eighteenth Century Sino-Portuguese Glossary | |
| 陳潔雯 (Marjorie K. M. Chan) | 203 |
| 陝北清澗話人稱代詞和指人名詞語尾〔·mi〕探源 | |
| 劉勳寧 (Xunning Liu) | 251 |

| | |
|--|-----|
| Interaction of Syntactic Changes | |
| 何萬順 (One-soon Her) | 263 |
| 古漢語被動式的發展與演變機制 | |
| 魏培泉 (P'ei-chuan Wei) | 293 |
| The Grammaticalization of 'Bei' in Chinese | |
| 張洪明 (Hongming Zhang) | 321 |
| On the History of Chinese Locative Prepositions | |
| 貝羅貝 (Alain Peyraube) | 361 |
| On the Mechanisms and Constraints in Syntactic Change: Evidence from Chinese Dialects | |
| 曹逢甫 (Feng-fu Tsao) | 389 |
| Synaesthetic Words in the Southern Min Dialect: Their Semantic Structure and Change | |
| 連金發 (Chinfa Lien) | 421 |
| 異形語的共存與淘汰——台灣話的輕聲與數量語 | |
| 鄭良偉 (Robert L. Cheng) | 453 |
| 元音與聲調 | |
| 遠藤光曉 (Mitsuaki Endō) | 487 |
| Tone Sandhi and the Dissimilation of Phonation Types: Reflexes of the Beijing Mandarin Third Tone Sandhi Rule in Northern Chinese Dialects | |
| Deborah S. Davison | 517 |
| A Beat-counting Theory of Mandarin Foot Phrasing | |
| 蕭宇超 (Yuchau E. Hsiao) | 555 |
| Verb Movement and Some Syntax-semantics Mismatches in Chinese | |
| 黃正德 (C.-T. James Huang) | 587 |
| Wh-words as Polarity Items | |
| 鄭禮珊 (Lisa Lai-Shen Cheng) | 615 |

Conditions on the Distribution of Postverbal Duration and Frequency
Phrases in Chinese Revisited

湯志真 (Chih-Chen Jane Tang)

641

Discourse Explanations for the Choice of *Jiu* and *Cai* in Mandarin
Conversation

劉美君 (Mei-chun Liu)

671

語言變化的機理*

(Mechanisms of Language Change)

王 士 元
加州大學柏克萊校區

我們這個研討會的主題是歷史語言學，好像歷史語言學和共時語言學的界限是二十世紀初以後才分開的，當初畫這條線是有它的道理的，因為在畫這條線之前，根本就沒有共時語言學，所謂語言學就是歷史語言學，所以畫這條線以後，大家就可以比較放心地研究共時的現象。但是現在卻好像有點矯枉過正，歷史語言學似乎不再是語言學的主流了，這不見得是很好的現象，因為有些現象光從共時看好像亂七八糟，沒有什麼道理，但歷史語言學是研究變的，在共時上不見得能看出所以然的可以用歷時來解釋。所以我覺得中國語言學也許可以不把歷時、共時的界限分得那麼死，很多東西互相交流會有比較多的好處。

這個會是談中國境內語言，這方面有一篇文章我覺得很重要，就是李方桂先生 1937 年在 *Chinese Yearbook* 裡一篇「*Languages and Dialects of China*」。二十年前我們創辦中國語言學報時，曾經請李先生讓我們用他的這篇文章作為第一期的第一篇文章，李先生答應了[E10]。當時我問過李先生，他將中國境內語言歸了大類，怎麼沒講到它們內部的關係如何，怎麼沒有畫樹？李先生回答說因為當時材料不夠豐富，工具、理論方法不夠成熟。這是五十多年前的情形，李先生如此形容那時候的情形，是非常恰當的。中國人講「工欲善其事，必先利其器」，所以要是器具不夠，要想談到其它的，不是罔然了嗎？可是現在已經過了

* 編者按：本文是邀請講席的演講紀錄稿，並經作者修改過。

半個世紀，材料豐富了，工具也很好，很多語言學上的東西有個微型電腦就很夠用了，比較缺的是理論方法的東西。今天要跟各位討論的就是是否我們能建立一些方法、理論，把中國的語言，包括少數民族語言，方言，的語言材料中的內部關係組織起來，看歷史、語言、和文化之間的關係。

要研究一群語言內部的關係，也就是 subgrouping，可以從不同的角度來看，比方音韻方面，就有很多人提過。像丁邦新先生 1982 年寫過一篇「漢語方言區分的條件」[C1]，謝信一先生 1973 年的「A New Method of Dialect Subgrouping」[E8]。丁先生的文章主要是以音韻上音變的時間先後作條件，謝先生的文章主要是以詞彙擴散理論，看哪些詞變了，哪些沒變，還有哪些方言中有相同變的詞，或相同不變的詞。最近鄭錦全先生寫了一篇「Quantifying Affinity among Chinese Dialects」[E5]，他所用的方法和我今天要講的就很接近。

我今天所要講的主要是報告一個小小的實驗，一個試探性實驗。我們用很小的一批詞彙，44 個詞目，看看是不是能看出方言中的種種內部關係[C2]。我們用的是「漢語方言詞匯」裡的一頁詞目，比方「爺爺」或「祖父」在不同的方言裡有不同的稱呼法。在「漢語方言詞匯」裡一共有 44 個這種親屬稱謂。可是我們用的不是方言詞匯裡的方言點，而是用吳語材料。一九二八年趙元任先生寫過一本「現代吳語研究」[C9]，這大概是研究漢語方言的第一部，也是一本經典之作，我們用的就是趙先生所研究過的江蘇南部和浙江的三十三個方言點。中國的大家庭有很多親屬詞彙，其中有許多意料之外的奧妙。比方「爸爸」在有些地方指伯父，「媽媽」有的地方指伯母或祖母。我覺得親屬稱謂也可以是語意研究裡很有研究價值的一個領域。音韻學裡有所謂 push chain，和 pull chain，我想同樣的現象在語意詞彙系統中也是可以發生的，這是很值得研究的一個部分。

在研究方法方面，首先要做的是一個頻率表。比方「祖父」在蘇州是「阿爹」，宜興是「爺爺」，寧波是「阿爺」，上海是「老爹」，這些都是不同的詞，可以做成下面這樣的表：

| | 阿爹 | 爺爺 | 阿爺 | 老爹 |
|----|----|----|----|----|
| 蘇州 | 1 | 0 | 0 | 0 |
| 宜興 | 0 | 1 | 0 | 0 |
| 寧波 | 0 | 0 | 1 | 0 |
| 上海 | 0 | 0 | 0 | 1 |

很多人以前是這麼做的，我覺得這樣的做法不合理，因為其中還有很多相同的地方，如果用這樣的表示方法，那麼內部詞素的相同點就被埋沒了。所以我們第一個決定，就是 Table of Shared Traits 不應該用詞，而是用詞素，另外還要注意構詞方式，比方重疊，像宜興就有。做出來就像下面的表：

| | 阿 | 爹 | 爺 | 老 | 重疊 |
|----|---|---|---|---|----|
| 蘇州 | 1 | 1 | 0 | 0 | 0 |
| 宜興 | 0 | 0 | 1 | 0 | 1 |
| 寧波 | 1 | 0 | 1 | 0 | 0 |
| 上海 | 0 | 1 | 0 | 1 | 0 |

把這表填起來以後，現在比方有兩個方言 D1 和 D2，某個詞素可能兩個方言都有，可能一個有一個沒有，也可能兩個都沒有，怎麼把這些數據系統化呢？過去一般用相似度 (similarity)，比方雙有為 a，雙無為公 d，一有一無為 b 和 c，有四種可能性，可以用 $S = \frac{ad-bc}{\sqrt{(a+c)(b+d)(a+b)(c+d)}}$ 這樣的統計式來算。但是我覺得這個做法有個毛病，也就是如果我們再加入另一個方言，詞素便增加了，同時零也增加了。雖然原來方言的詞素沒變，但會受到這些增加的零的影響，原來關係密的方言會因此關係變薄，這樣就不穩定了。所以應該用一種新的相似性測量 (similarity measure)， $S = a / (a+b+c)$ ，這在統計上常用的，叫 Jaccard coefficient，也就是不該用雙無的那部分數據。語言學家在這方面沒有很深入的研究，但是生物學界因為要給很多不同的生物分類，這方面的學問是很發達的，這個 Jaccard coefficient 和一些數學的概念都可以在 Sneath 和 Sokal (1973) 「Numerical Taxonomy」書中看得到，所以我們要研究語言和語言內部的關係，可以向他們學一些方法。[E15a]

第三點就是做頻率表，過去的做法是把所有的 a，所有的 b 和所有的 c 作同樣的處理，不分詞目間的界限，我覺得這是很不合理的，因為要是「祖父」有三個詞素，「祖母」只有兩個，那麼照那個方法，「祖父」就比「祖母」重要，它的權重 (weighting) 就不平衡了，就傾向詞多的詞目。比方「太陽」在「漢語方言詞彙」裡有 8 個詞素，「風」只有 1 個詞素，「星星」有兩個，那麼「太陽」就有「風」的八倍那麼重要了，我覺得這是不合理的。要是把詞目的界限分開，是會影響統計結果的。過去我們做過一些數學的分析，把詞目的界限分開再算，會發現到以前沒看到的關係。以上談的是我們做頻率表時應注意的三點。

現在就可以看實在的數據了。假設有 n 個方言，就需要跟 (n-1) 個方言對比，但蘇州和上海比等於上海和蘇州比，所以再除以 2，因為有一半是沒用的。所以 33 個方言點，就有 528 個方言和方言中親屬稱謂的關係。參看圖一及 [C2]。

我想很簡單地說說三種不同的分析方法。我想要強調的一點是，我們在如何了解方言間的內部關係上，作一個初步的認識，所以每個方法都有它的優、缺點。在初步階段最好用很多不同的方法，看看每一個方法能提供什麼樣的訊息。

第一個是主分量分析法 (Principal Component Analysis)，這些在 Sneath & Sokal 的書中都講得很清楚。主要是將數據分成多維空間 (multidimensional space)，在我們具體的世界裡，一般是三維的 (three dimensional space)，但數學就沒有這種限制，所以數學就可以把這 528 個點分成三十多個多維空間，那麼在這個多維空間裡，就有很多的點，一共有 528 個點。主分量分析 (Principal Component Analysis) 是一種 curve-fitting，畫一條線，這條線能夠解釋這 528 個點當中有多少方差 (variance)。那麼第一條線自然解釋得最多。畫完這條線，再在一個與第一條線成直角的面上，再畫一條線，把剩下的方差再解釋出來，就是第二個分量 (component)。所以逐步把分量加上，分量研究完以後，方差就完全解釋了。一般作主分量分析時，只要用頭三個主分量就夠了。在圖 x 中第一分量表現為每一個方言點的高度，第二、第三分量分別由 X 和 Y 軸上表現。有趣的是，我們用電腦作主分量分析時，對相關係數表 (Table of Correlation) 作分析，

畫出來的圖與地圖有很密切的關係，真是出乎意料之外的配合得好。所以用主分量分析可以探討地理、空間上的關係。參看圖二及[C2]。

在 Cavalli-Sforza 和我 1986 年發表在 *Language* 上的一篇文章「Spatial Distance and Lexical Replacement」[E2] 裡研究 Micronesia 地區北太平洋上的一些小島，結果也很相似，就是地理上相近的地方，詞彙也相近，而且相近的程度相當的成比例。這和十九世紀的波浪理論 (Wave Theory) 很相近，也就是一個語言的特徵像波浪一樣傳播出去，比較近就多受到影響，早受到影響，比較遠影響就比較少，比較遲。單從 33 個方言點，44 個詞目就能分析出這樣的結果，是原先沒有想到的。第二種分析分法是最短距離樹 (Minimum Spanning Tree)，這也是 *Sneath & Sokal* 書中有的。把 33 個方言點，哪些方言和哪些別的方言關係最近的把它連在一起，跟剛才的主分量分析不一樣，是另外一種統計的方法。圖 X 中有個很有趣的現象，就是偏僻的地方和別的方言點的關係比較少，比方溫州，只有和另外一個方言點有關係；又比方上海，和很多別的地方都有關係，有時候關係拉得很遠，這也是很合理的，因為我們知道上海現在雖然是世界性的大都市，它的歷史不超過一兩百年，主要是鴉片戰爭以後，很多各地來的人在舊上海方言的基礎上融合成新的上海方言，所以上海方言有很多別的方言的成份在內。由於有這些成份在裡頭，它就和很多別的方言點有關係。參看圖三及[C2]。

再講最後的一個方法，這個方法就是要畫樹。但是我們應該了解，畫樹在邏輯上到底是怎麼一回事。假設有 a、b、c 三個方言，樹有兩種，一種是有根的 (rooted)，一種是無根的 (unrooted)，如果是畫一棵有根的樹，那已經表達很多信息了，所以我們先畫一棵無根樹 (unrooted tree)，那麼 3 個方言一共只能畫一棵無根樹。現在如果再加一個方言，有一個 d，這個 d 可以有三種加上去的方法。所以有四個方言時，我們可以有三棵無根樹。要是再加一個 e，就更複雜了。所以要是我們把原則看出來，原則是相當簡單的，就是所有的單數，3 個語言是一棵樹，4 個語言是 1×3 ，5 個語言是 $1 \times 3 \times 5$ ，再加一個語言，就整個再乘以 7 了，再加一個，再乘以 9，所以樹的數目增加得非常快。大家要是對這有興趣，可以看 Meyers & Wang 1963 「Tree Representation in Linguistics」

[E11]，這是我還在俄亥俄州立大學時做的一個研究。所以我們就可以知道這些樹假使語言多的話增加得非常快。

我們為什麼要算這個呢？第一是我們要知道它的科學價值，它的信息。要是可能性不多的話，它的信息就不多，要是有很多樹，那麼從這裡頭選一棵樹，這棵樹的信息就豐富得多，這是一點。另外一個原因呢，就是當材料越豐富時，計算起來就越繁瑣，一定要用計算機來做，因此要預先知道大概要花多少時間。有了這些概念之後，我們可把 33 個方言點畫成一棵樹，參看圖四。這棵樹和我們剛才談的主分量分析 (Principal Component Analysis) 的聚類基本上是相同的，但是也有些比較有意思的地方。比方江蘇的一些方言點距離都比較近，因為它們地理上的距離也比較近，在樹上的距離也比較近；但是浙江的部分距離比較遠，交通比較不方便，所以在樹上的距離也比較遠。而且浙江的方言點是不成群的。

這種樹有個好處，就是我們一般在語言學上看到的樹，每一個據點跟它的根的距離是一樣長，這是不合理。因為要是從根到每一個據點的距離一樣長，等於說每一個語言變遷的速度 (the rate of linguistic change) 是一樣的，我覺得我們現在還沒有資格作這樣一個假定，我們應該先查出是不是這些語言的變化速度是一樣的，這是一個查的方法。就用樹的長短來告訴我們變化的程度，如果根離得遠就長一點，根比較近的話就短一點。可是這種樹還有個好處，就是畫這種樹的時候，可以把樹再換成一個數據矩陣，就是送進一個輸入矩陣，畫出一棵樹，再把它換成一個輸出矩陣。所以一開始送進去的矩陣，是實際觀察到的。你畫出樹之後，把它再換成一個矩陣，那是一個輸出矩陣。把兩者對比一下，有時會發現某些方言群與其它方言群的關係，其實比預測的 (prediction) 要相近得多。在這種情形之下，我們也許可以假設這些「額外相似度」 (additional similarity)，是因為接觸，借用之類的相互影響造成的。這些都是初步嘗試的階段，所以我想也許這樣做下去，可能將來會有一點希望，可以把縱向傳遞 (vertical transmission (inheritance)) 和橫向傳遞 (horizontal transmission (contact)) 分出來。這是歷史語言學非常重要的一個課題。

所以在這種情形之下，幾年前我做過一個嘗試，那時在台大人類學系講一些

語言的關係，主要用的是 Tsuchida 的數據材料 [E16a]，把台灣一些高山族的語言，畫出這樣一棵樹。（參看圖五）雖然看起來每一個語言離根都一樣遠，但是實際上是不一樣的，它的長度可以在數字上看出來。那麼照我剛才所說的那個方法，我們發現某一組的兩個語言，跟另一組的兩個語言有某種關係。所以這種樹不只可以畫出縱向傳遞，也許將來還可以畫出橫向傳遞，也就是借用。（請參看 E10a 及 E17）

這當然只是一個初步的嘗試，我們需要具體研究，一次一次的對，看是不是有這樣的預測能力。我們希望將來不只是研究幾個很近的方言點，也能夠研究很大的人群。

最近東京大學人類學系有一位齋藤成也 (Saito Noruya) 先生，他把中國人類，尤其是少數民族的血型，做一個很仔細的，很先進的遺傳分析 [E14]。從這裡看出來所謂「漢」，漢方言，漢語，漢人是一個很複雜的概念。比方徐州的漢，跟西藏人、蒙古人在生物化學上更接近，跟北京來的漢人距離反而遠（參看圖六）。況且我們可以看出來秦淮以北有一個聚合 (cluster)，秦淮以南一個聚合，漢人的北方人跟韓國人、西藏人、蒙古人的關係比較密切，而廣西、廣東、海南島的漢人就跟那裡的少數民族，比方苗人、傣人、壯人、侗人的關係比較密切。圖六中的信息也可以畫成一個有根的樹，參看圖七。我希望將來語言學不要老孤立在那裡，歷史語言學是要研究我們的過去，我們的歷史的，而語言是人群的工具，所以我們將來語言的歸類，親屬關係，和人群的歸類一定要連得起來，要互相支持。如果當中有衝突的話，要了解為什麼遺傳學家、人類學家那麼說；為什麼我們語言學家這麼說，當中是什麼過程讓它們變得相互不合了。

我今天就講到這裡，現在稍微重覆一下。第一，我今天講的這個，不是一個成果，只是一個試探性實驗，因為我們只用了 33 個方言點，44 個詞目，真正要做這樣的研究，材料要豐富得多，花的時間也多得多。可是我沒有預料到，單用這 44 個詞目，能夠得到這麼合理的方言內部關係。這讓我想到他們生物學家說的，你只要給他皮膚上的一個細胞，因為細胞裡頭所有基因的信息都在，他差不多可以仿製一個人出來，英文裡這個字叫 clone。雖然語言和生物有很大的不同，

但是從這樣一小部分的詞彙，能夠擠出這麼多信息來，這是出乎我意料之外的。這是很好的預兆，我們可以這麼做下去。

第二點，就是我們不應當只像我們的前輩，只做樹，樹固然很重要，況且做距離樹 (distance tree)，樹枝不同，不同長短的那種樹，特別重要。但是我們也應當探索一些別的方法，比方最短距離樹 (Minimum Spanning Tree)，主分量分析 (Principal Component Analysis)，這些東西有時候不同的分析方法給我們不同的信息。我們在初步的時候，什麼樣的信息，只要是合理的，我們都希望能探討出來。我們用我們知道答案的材料做，可以證實我們的方法。方法做出來，如果每次做出來都是合理的，那麼將來我們用我們的方法來做大問題，做我們不知道答案的材料，就比較有說服力了。

這兩三天聽了很多很有價值，很有內容的東西，學到了很多，也覺得很興奮，因為這一兩百年來，語言學主要是跟著印歐語系語言走的，他們出了什麼理論，出了什麼方法，我們就跟著走。聽了這些文章以後，我覺得也許情形會改變了，也許在不久的將來，中國語言學能夠走到前頭，能夠帶一些路，那麼我們就不辜負老前輩給我們這些光輝的傳統了。

* * * * *

李壬癸：我有兩個問題，一個是人種跟語言之間的關係，我們知道常常語言跟人種是一致的，但有時候也會遇到語言跟人種不一致的地方，一個語系裡有很多不同的種族。剛才王先生提到北方的漢人跟當地的非漢人體質上有很多相近的地方，而華南的漢人就 and 南方的非漢人有相近的地方。這是一個問題，就是歷史上不一定一個族的人一定要講同一個語言，一直傳下去，往往一個種族會因為周圍優勢族的影響而放棄自己的語言，採用別的語言，因此在歷史上語言不曉得產

生過多少變化。這種現象在南島民族也有，南島民族基本上也是分成南北兩大種族，但語言上都屬於所謂的南島語言，語言之間的親屬關係是非常肯定的，但在赤道以北的北太平洋一帶，和南太平洋的是不同的關係。我沒答案，但聽了王先生演講，想到這是一個問題。

第二個問題是您所得的高山族語言的樹圖，基本上對我來說是很熟悉，沒有什麼意見，但是其中一部分關於魯凱族的，我1977年曾經發表一篇文章，畫的樹圖也是很接近，是根據cognate的多少及sound change幾個大的現象所得的結果。最近鄭錦全指導一位學生用quantifying的方法，重新檢驗我的資料，結果是Mantauran是最早分出來的，跟您的結果有出入。

王士元：謝謝李先生的comment，我想這裡頭有些東西不是那麼三言兩語可以講清楚的，諸位有興趣的話，我們現在所談的這種distance tree，是Fitch & Margoliash 1967「Construction of Phylogenetic Trees」[E6]，這種方法自然有它的好處也有它的壞處，它是在生物界所發明出來的，也許用在語言上會有些不恰當的地方。主要的李先生剛剛講的頭幾句話，我覺得聽起來相當投機。照理說我們的語言是從父母來的，我們的基因也是從我們的父母來的，從最簡單的情形來看，語言和基因的分布應該是相當一致的，但是在很多情形下這當中有出入，所以要是我們能把語言的分布和基因的分布對比一下，能夠把這作了解其出入的初步資料，我覺得是一個能把各種歷史綜合在一起的重要階段。

赤松祐子：像吳語區裡南京基本上屬於北方官話而不是吳語，您怎麼處理這種dialect island？

王士元：要是已經知道我就不需要怎麼處理了。我想一般大都市的情形和鄉下是不同的，大都市一般講官話，標準語，我們研究的33個方言點，除了少數像杭州之外，都是相當標準的吳語。

羅仁地：請問Saito先生畫的這棵樹究竟是憑哪些特徵？

王士元：根據血型，尤其是HLA，請參考Sun, et al (1986)。

曹逢甫：基本上我很贊同您現在改用語素 (morpheme)，而不用詞來計算，這種情形尤其在漢語我想是更合適。不過即使在漢語裡，suffix 和 stem，affix 我們都算它是一個 morpheme，不過是不是 affix 跟 stem carry 同樣的 weight，想必是值得進一步研究的問題。

王士元：我完全同意，況且一個 suffix 和 reduplication 是不是也同樣 weight 也是一個問題。所以我們第一步把它分出來，其餘的問題，詞素和詞素是不是同樣地位還有待進一步研究。

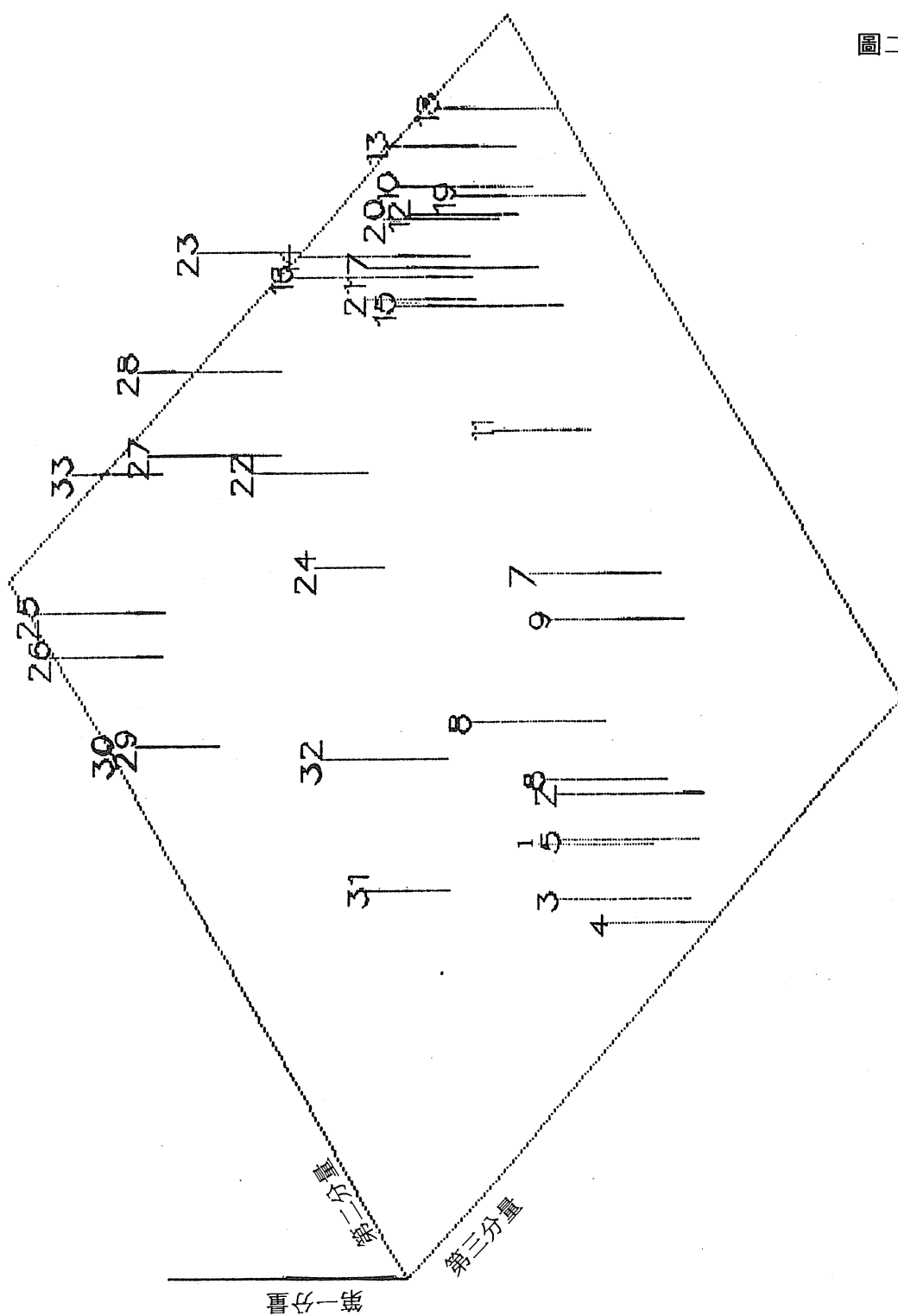
梅祖麟：我對於 Saito 的東西非常有興趣，二十年前和 Jerry Norman 寫過一篇文章，主要是說閩語有個底子，其中有包括一些借詞。在寫那篇文章時我們去查資料，看到一個法國人做的也是血型的研究，他的結論是說廣東人在血型方面跟越南人相近的程度遠超過於廣東人跟華北人相近的程度，華南的中國人跟越南人更類似而跟華北的人不類似。

王士元：Saito 的這篇文章只是講中國的一部分人類。Cavalli-Sforza 在 1994 年會出版一本很大的書，叫「History and Geography of Human Genes」Princeton University Press. [E3]，在這本書裡把中國人的基因上的分析做得精密得多。

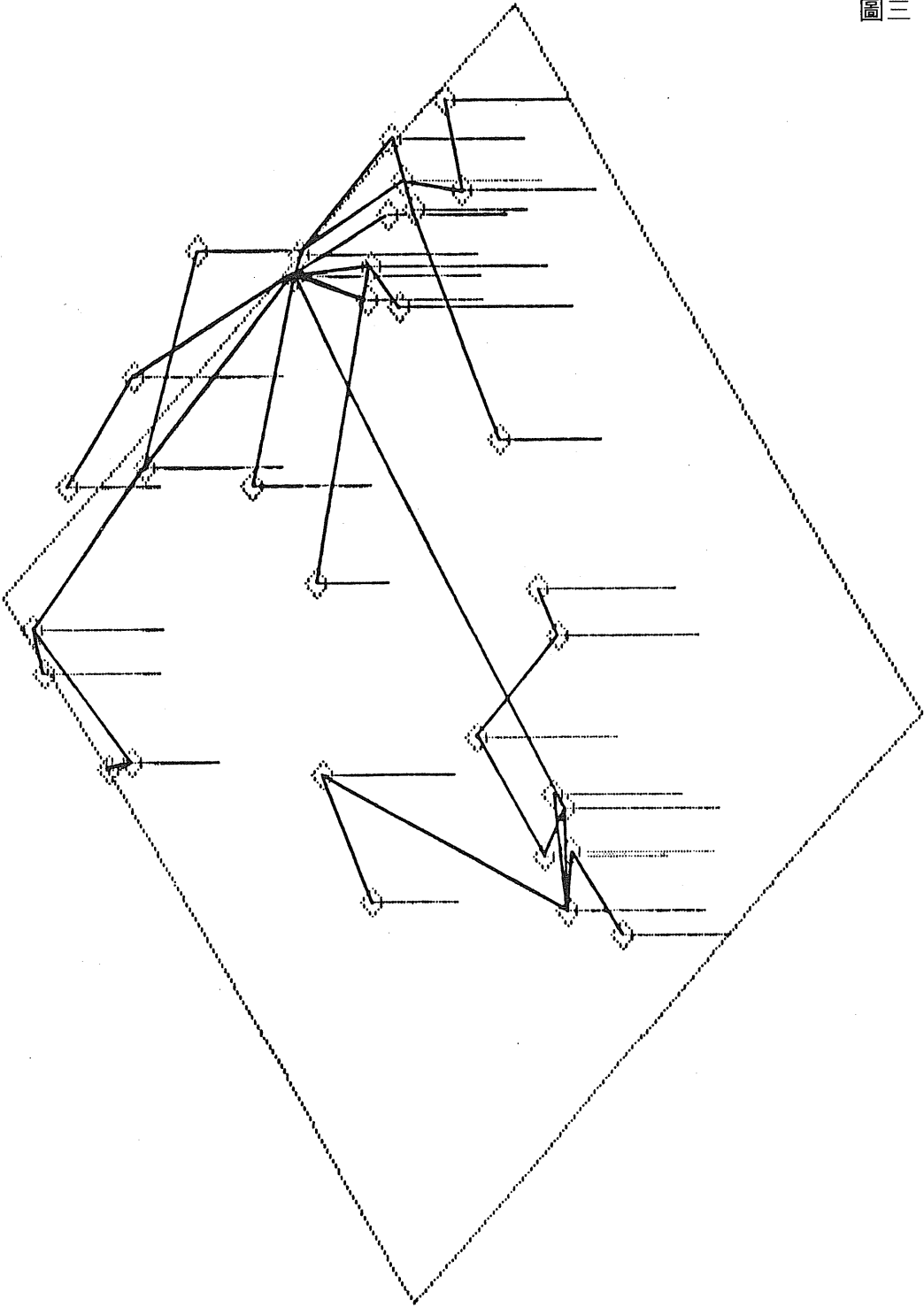
(本文於民國八十二年二月十八日通過刊登)

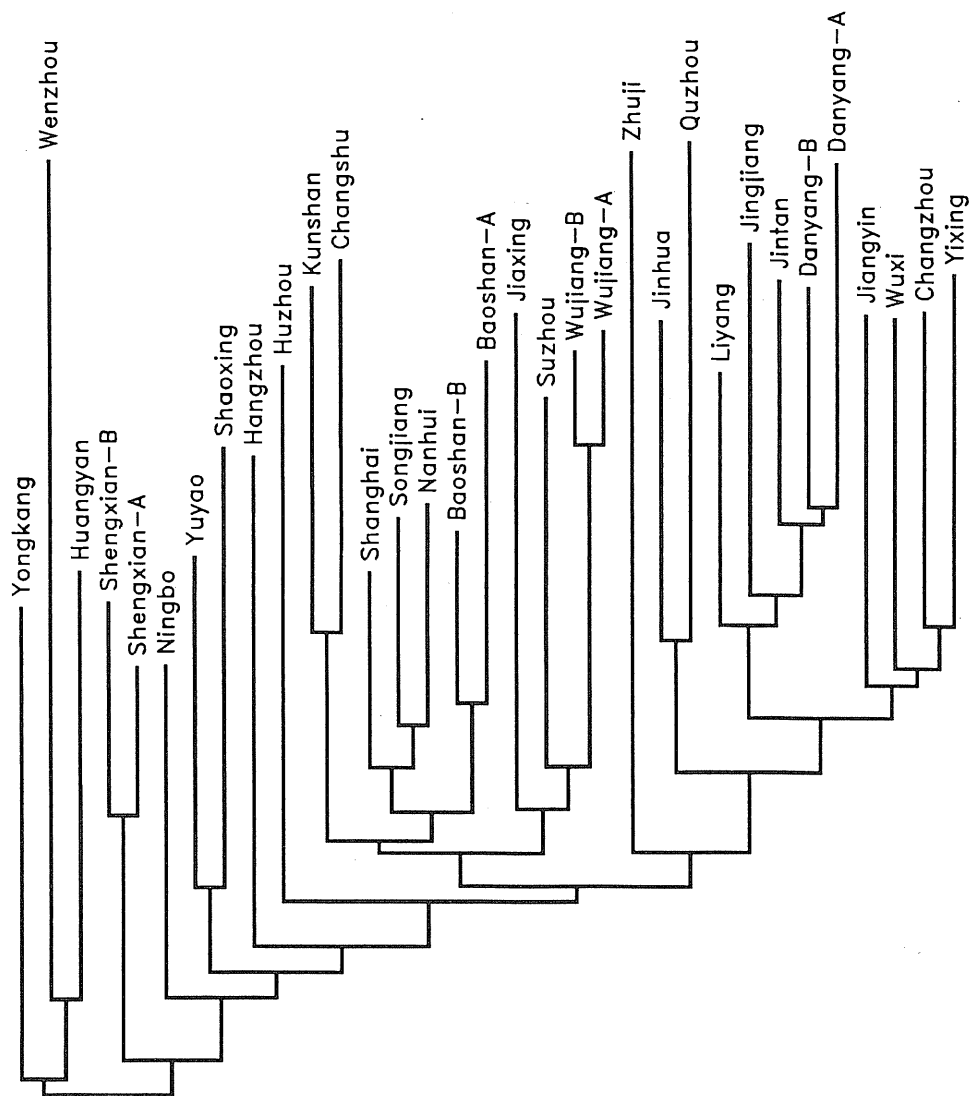
- 11 -

圖二



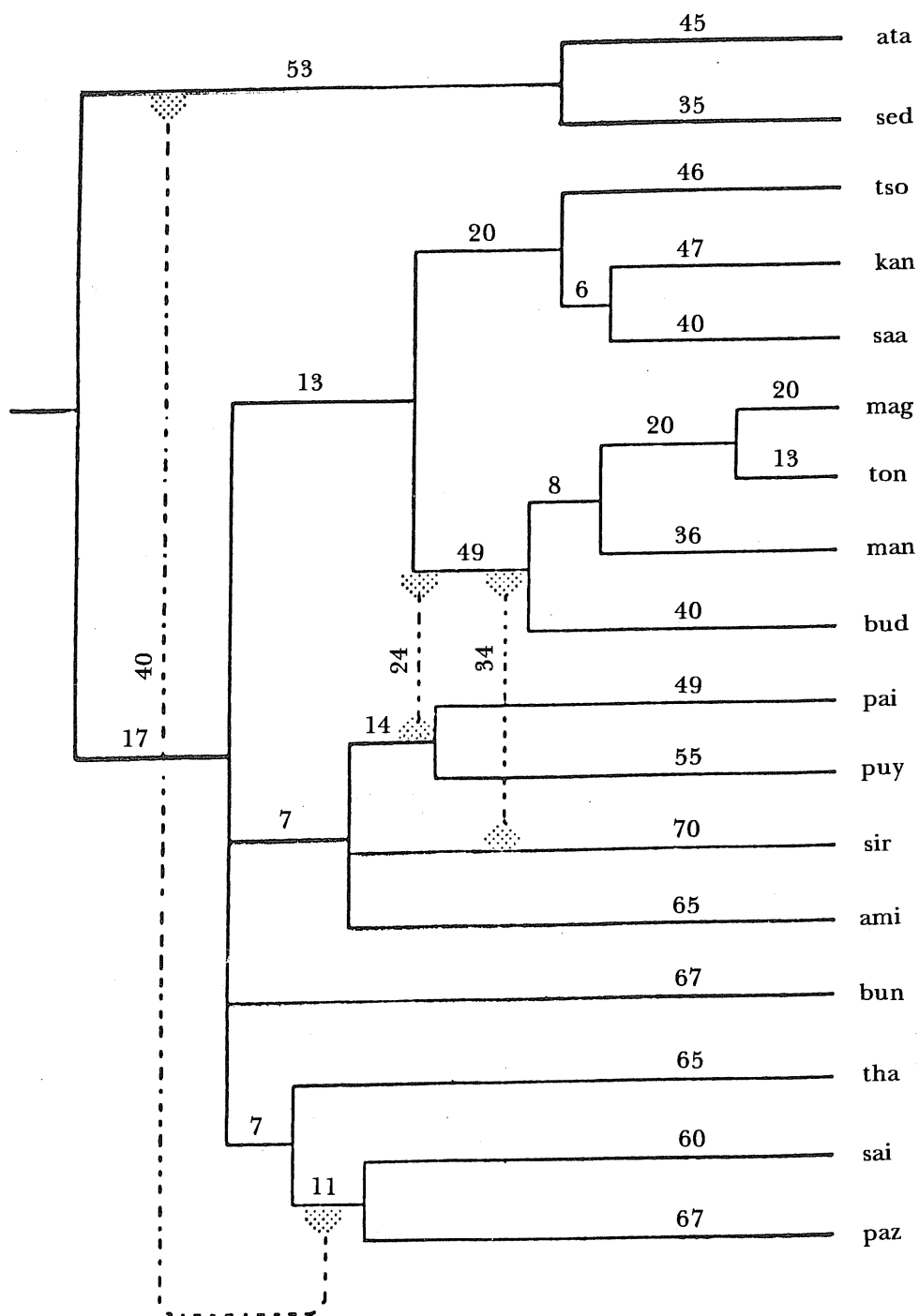
圖三



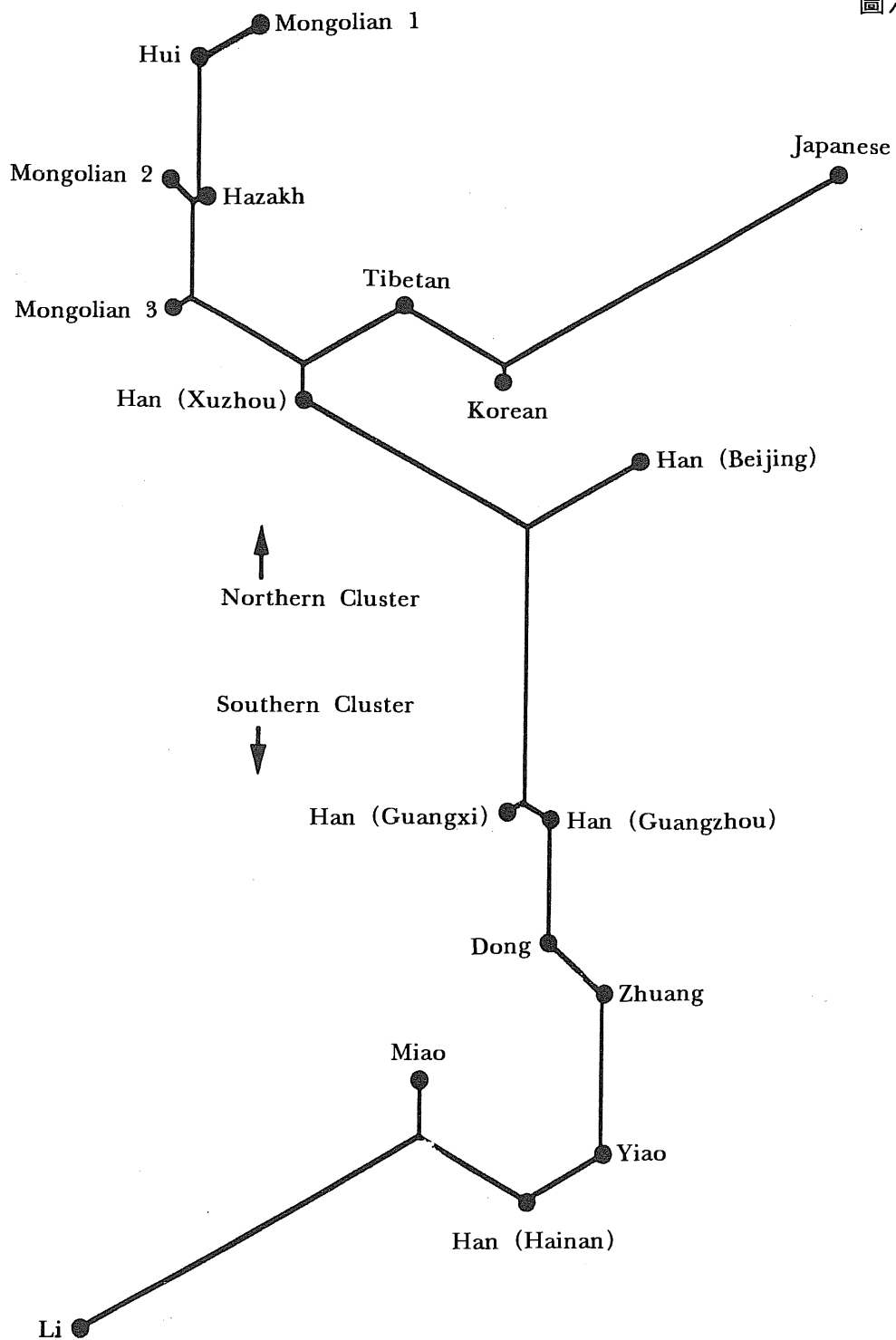


圖四

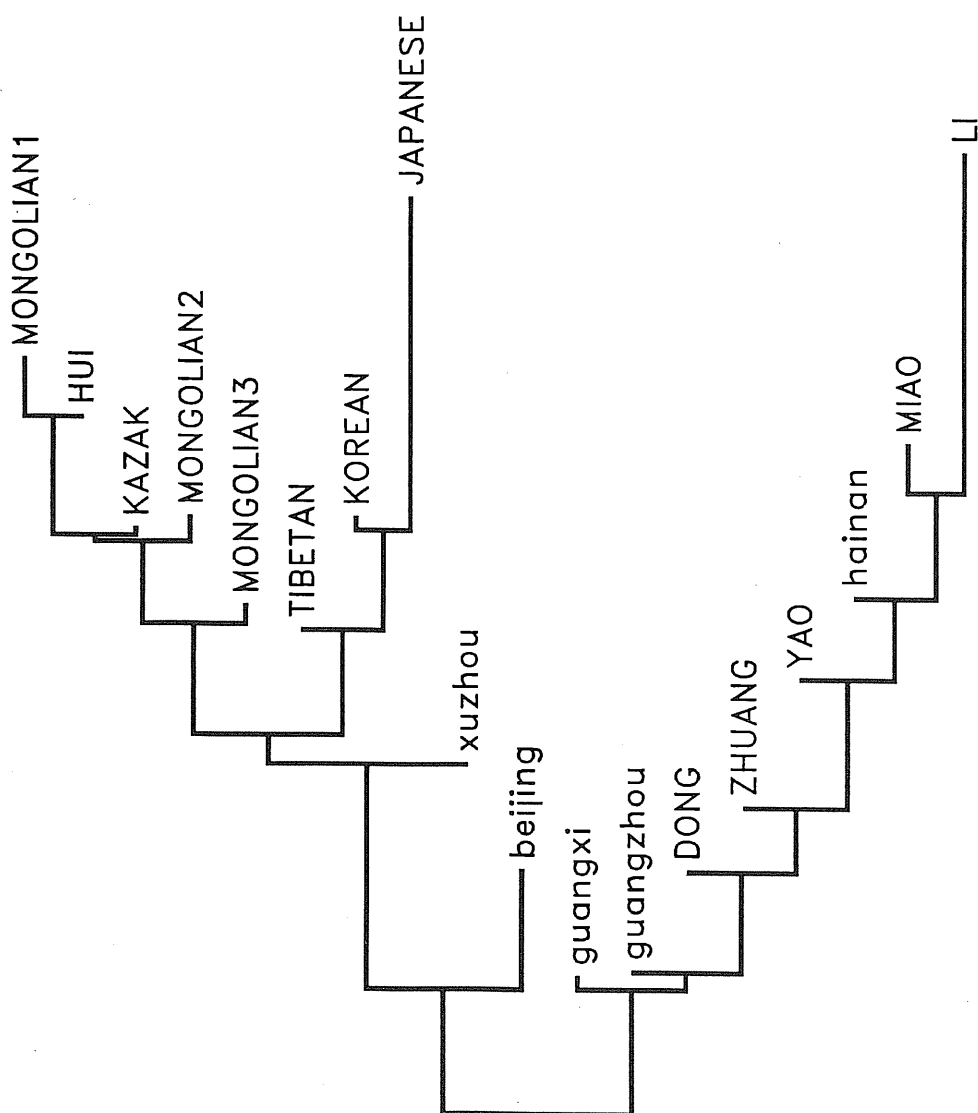
圖五



圖六



圖七



參考書目

- C1. 丁邦新 1982 〈漢語方言區分的條件〉，《清華學報》14.257-273。
- C2. 王士元、沈鍾偉 1992 〈方言關係的計量表述〉，《中國語文》227.81-92。
- C3. 朱聲琦 1992 〈從“花”字的產生看“平分陰陽”開始時代〉，《中國語文》226.69-71。
- C4. 何大安 1988 〈“濁上歸去”與現代方言〉，《歷史語言研究所集刊》59.115-140。
- C5. 何大安 1993 〈從中國學術傳統論漢語方言研究的過去、現在和未來〉，《歷史語言研究所集刊》，63.4:713-731。
- C6. 徐通鏞 1991 《歷史語言學》，北京：商務印書館。
- C7. 周振鶴、游汝杰 1986 《方言與中國文化》，上海：人民出版社。
- C8. 鄭再發 1966 〈漢語音韻史的分期問題〉，《歷史語言研究所集刊》36.635-648。
- C9. 趙元任 1928 《現代吳語的研究》，上海：科學出版社，1959再版。
- C10. 趙桐茂等 1991 〈中國免疫球蛋白同種異型的研究：中華民族起源的一個假設〉，《遺傳學報》18.97-108。
- C11. 橋本萬太郎 1985 《語言地理類型學》，北京大學出版社（余志鴻譯自日文版：言語類型地理論，東京：弘文堂 1978）。
- C12. 麥 耘 1991 〈古今濁聲母清化規則補議〉，《中國語文》223.289-290。
- E1. Bowcock, A. M. et al. 1991. Drift, admixture, and selection in human evolution: a study with DNA polymorphisms. *Proc Nat. Acad Sci* 88. 839-843.
- E2. Cavalli-Sforza, L. L. and W. S-Y. Wang. 1986. Spatial distance and lexical replacement. *Language* 62. 38-55.

- E3. Cavalli-Sforza, L. L. et al. 1994. *History and Geography of Human Genes*. Princeton University Press.
- E4. Chao, Y. R. 1967. Contrastive aspects of the Wu dialects. *Language* 43. 92-101.
- E5. Cheng, C. C. 1991. Quantifying affinity among Chinese dialects. In Languages and Dialects of China. *Journal of Chinese Linguistics* Monograph 3. 78-112.
- E6. Fitch, W. M. and E. Margoliash. 1967. Construction of phylogenetic trees. *Science* 155. 279-284.
- E7. Hoenigswald, H. and Wiener, L. ed. 1987. *Biological Metaphor and Cladistic Classification*. University of Pennsylvania Press.
- E8. Hsieh, Hsin-I. 1973. A new method of dialect subgrouping. *Journal of Chinese Linguistics* 1. 64-92.
- E9. Krishnamurti, Bh., L. Moses & D. Danforth. 1983. Unchanged cognates as a criterion in linguistic subgrouping. *Language* 59. 541-568.
- E10. Li, Fang-kuei. 1973. Languages and dialects of China. *Journal of Chinese Linguistics* 1. 1-13.
- E10a. Li, Paul Jen-kuei. 1990. Classification of Formosan languages. *BIHP* 61.4:811-847.
- E11. Meyers, L. F. and W. S-Y. Wang. 1963. Tree representation in linguistics. *Project on Linguistic Analysis Report* No.3. Ohio State University.
- E12. Pope, G. G. 1983. Evidence on the age of the Asian hominidae. *Proc Nat Acad Sci* 80. 4988-4992.
- E13. Pulleyblank, E. G. 1983. The Chinese and their neighbors in prehistoric and early historic times. 411-465. In *The Origins of Chinese Civilization*, D. N. Keightley, ed. University of California Press.

- E14. Saitou, Naruya, et al. 1992. Genetic affinities of human populations. In *Isolation and Migration* (Monograph SSHB Series #30), R. F. Roberts and Fujiki, eds. Cambridge University Press.
- E15. Shen, Zhongwei. 1990. Lexical diffusion: a population perspective and mathematical model. *Journal of Chinese Linguistics* 18. 159-201.
- E15a. Sneath, P. and R. Sokal. 1973. *Numerical Taxonomy*. W. H. Freeman and Company.
- E16. Sun, Y. et al. 1986. HLA antigens in Chinese populations. 502-510. In M. Aizawa et al, eds. *HLA in Asia-Oceania*. Hokkaido University Press.
- E17. Wang, W. S-Y. 1989. The migrations of the Chinese people and the settlement of Taiwan. 15-36. In *Anthropological Studies of the Taiwan Area*. Edited by K. C. Chang, et al. Department of Anthropology, National Taiwan University.
- E18. Wang, W. S-Y. 1991. *Explorations in Language*. Taipei: Pyramid Press.
- E19. Wang, Yude. 1960. An attempt at the glottochronological study of the five major Chinese dialects. *Gengo Kenkyu* 38. 33-105. (In Japanese)
- E20. Wilson, Allan C. 1985. The molecular basis of evolution. *Scientific American*. October.

漢語上古音的元音問題

丁邦新

加州大學柏克萊校區

一、略說上古音系中的介音及韻尾

漢語上古音的系統經過許多學者多年來的研究，在聲母方面除去少數糾葛，已經有漸趨一致的結論，而韻母問題則仍然各說各話，未能得到大家認同的具體意見。聲調的起源雖然看法接近，但是時代的早晚也還有爭論。在這篇文章之中，我想從不同的角度檢討元音擬測的問題，但在進入主題之前先要大致說明一下個人對介音及韻尾的看法。

李方桂先生(1971:16-18)在他的上古音系之中，一方面把 Yakhontov(1960) 的二等介音 -l- 改成 -r-，另一方面保留高本漢的三等介音 -j-。前者的改動有重要的意義，使得我們對中古二等韻的元音來源以及知系、照二系聲母的演變得到妥善的解釋。後者的 -j- 基本上是從中古推上去的，最近鄭張尚芳(1987:80) 提出三等介音 -j- 可能後起的說法，他引用李榮(1956:150) 的統計，指出切韻中各等的韻數以三等為最多。切韻共有五十七個韻類，東、歌、麻、庚四韻各有分屬不同等第的兩個韻母，故總數為六十一，其分配情形如下：

| 等 | 一等 | 二等 | 三等 | 四等 | 總計 |
|-----|-----|-----|-----|----|------|
| 韻數 | 14 | 12 | 30 | 5 | 61 |
| 百分比 | 23% | 20% | 49% | 8% | 100% |

漢語的 -j- 介音在藏語同源字中多半沒有，同時廣州話中有長短元音的對立，大

體上短元音都是三等字，因此他認為上古有長短元音，而 -j- 介音正是從短元音增生而來。

這個說法非常新穎，但還須要進一步的研究，例如澎湖湖西方言裡「布路姑虎雨」等字都讀 -iɔ 韻母，跟別的閩南方言稍一比較，即可發現其中的 -i- 是後起的。¹ 但也有反面的例子，例如英語有下列現象：

| 例字 | 一讀 | 又讀 |
|------|-------|------|
| new | [nju] | [nu] |
| lieu | [lju] | [lu] |
| due | [dju] | [du] |

這些字裡的 -j- 在某些美國英語的方言裡失落了，環境是舌尖音聲母及元音 u 之間。也許我們可以反過來想，古漢藏語本來有 -j-，漢語還能保存，而藏語都消失了。

爲了避免討論許多枝節問題，我們現在仍舊接受李方桂先生的看法，承認上古有 -r-, -j- 兩個介音。

韻尾中 -m, -n, -ŋ, -p, -t, -k 六種一般都沒有異議，只有俞敏(1984:284)，鄭張尚芳(1987:84)提議把 -p, -t, -k 改成 -b, -d, -g，這樣一來跟藏語的情形就更爲接近。目前這個問題還無法說定，而我個人又相信陰聲字有濁塞音尾，暫時還是認為入聲字具有 -p, -t, -k 尾。李先生另外尚有 -ŋ^w 和 -k^w 兩種韻尾，如果採用周法高(1969, 1970)或張琨(1972)的辦法，把合口成分 w 移到韻母上，例如幽部的 -ək^w 寫成 -əwk 或 -əuk；中部的 -əŋ^w 寫成 -əwŋ 或 -əuŋ；那麼陽聲和入聲的韻尾就只有上述六種了。但是 -ŋ^w 和 -k^w 仍有存在的理由，詳見下文。

關於陰聲字尾的問題，我(1987)曾經根據詩經時代到南北朝時代異調字押韻的趨勢作過一些觀察。發現從詩經時代到東漢，陰聲字跟 -k 尾和 -t 尾的入聲字一直都有押韻的關係，但魏晉以後跟 -k 尾入聲字押韻的現象完全消失，只有「脂祭皆泰」各部的去聲字還跟 -t 尾入聲字有相當密切的來往，如果陰聲字沒

1 這些字其他方言大致都是 -ɔ 韻母，也有讀 -ɔu 的，如揭陽。詳見顧百里(Kubler 1978)；揭陽的讀法見董同龢(1960)。

有輔音韻尾，所有去聲字都是元音或複元音韻母，很難想像何以別的去聲字幾乎都不跟入聲來往，只有這一部分字常跟收 -t 尾的入聲字押韻，所以我認為上古陰聲字都具有輔音韻尾。² 在李先生的系統裡有 -b, -d, -r, -g, -gw 等五種。

聲調的起源問題也牽涉韻尾，我 (1981) 曾指出，聲調如果起源於韻尾，應該是詩經時代以前的現象，到詩經時代已經看不出痕跡。例如詩經周南漢廣三章之中重覆歌詠三次的一段話：

漢之廣矣，不可泳思；江之永矣，不可方思。

如果認為押韻的四個字是 kwang?, gwjiangs, gwjiang?, pjang，對我而言是難以相信的。遠不如 kwang, gwjiang, gwjiang, pjang 帶有不同的音高更為可信。

最近鄭張尚芳 (1987:87) 提出下列的看法，跟 Baxter (1992) 的看法很接近：

| | 平 聲 | 上 聲 | 去 聲 | 入 聲 |
|-----|--------|-----------|-----------|--------|
| 後置尾 | -o | -ʔ | -s → -h | |
| 鼻 尾 | -m-n-ŋ | -mʔ-nʔ-ŋʔ | -ms-ns-ŋs | |
| 塞 尾 | | | -bs-ds-gs | -b-d-g |

這樣的韻尾系統至少要放在諧聲時代，³ 如果認為在詩經時代也存在的話，那麼像下列的詩經韻字就要擬成不可解的情況：

鄭風清人：清人在軸，駟介陶陶。左旋右抽，中軍作好。

按照鄭張尚芳的擬音，“軸、陶、抽、好”四字的韻母可能是：-ug, -ū, -u, -ū/ūs，不僅韻尾不同，元音還有長短。按照 Baxter 的擬音，韻母可能是 -iwk,

2 認為去聲字有 -s 尾的人也許可以說 -ks 尾先行失落，-ts 尾仍然存在。但是對於 -ks 或 -ts 如何能跟平聲及上聲字押韻就難以解釋了。（參見下文）關於陰聲字具有濁塞音尾的其他理由，見丁 1979。

3 我採取李方桂先生的名詞，把諧聲時代訂在詩經之前，所有諧聲字系統跟詩經韻字不合的地方，大體可以看作早期的語音現象。余迺永 (1985) 即已採用李先生的名詞。

u, -iw, -uʔ/us, 也不容易令人信從。回到李先生的擬音 -jəkw, -əgw, -jəgw, -əgw,⁴ 或者改寫爲 -jəuk, -əug, -jəug, -əug, 看起來像是一組可以令人相信的韻字。

假如把諧聲時代跟詩經時代分開，認爲在較早的諧聲時代具有不同的韻尾，到詩經時代已經形成以音高表現的聲調系統，那是很有可能的一種假設。如果要把這些韻尾設計在詩經時代或者更晚的兩漢、魏晉，恐怕沒有充分的證據。

二、從韻部結構的特點論上古元音的擬測

我(1975)曾經討論過 Karlgren、董同龢先師、陸志韋、王力、周法高、Pulleyblank 以及李方桂先生等七家的元音系統，有的部分不再重覆，現在把有代表性的幾家元音系統列表如后：⁵

| | | | | | | | | |
|-------------------------|------|---|---|---|---|---|---|---|
| 李先生 (1971) : | i | u | ə | a | | | | |
| 周法高 (1970) : | | | ə | a | e | | | |
| 張琨 (1972) : | i | u | ə | a | | | | |
| Pulleyblank (1977-78) : | | | ə | a | | | | |
| 余迺永 (1985) : | i | u | | a | e | o | | |
| 王力 (1957-58) : | (-i) | u | ə | a | e | o | ɔ | |
| 鄭張尚芳 (1987) : | i | u | | a | e | o | | u |
| Bodman, Baxter (1992) : | i | u | | a | e | o | | i |

這樣列舉的辦法只能提供概略的情況，不易作深入的觀察。還是要從傳統的韻部出發，構擬韻母的情形才容易把握，以下爲免繁瑣，只列最基本的形式，其他韻母在下文討論時再依需要列舉。

4 “好”字的聲調不敢說定，在李先生的系統裡雖把上聲寫作 -x，去聲寫作 -h，但那只是表示聲調的一個符號，並不代表韻尾，在這裡略去並無問題。

5 各家的次序大體按照時代排列，但有兩點須要說明。第一、周法高(1970)的文章是根據李方桂先生講演的內容發展而來，發表的時間雖然略早，基本上是以李先生的系統爲根據的。第二、王力早在1957-1958出版的《漢語史稿》裡就提出他的上古音系，1987只略加改定，但因本文引用他的改訂系統，所以排得較後。

漢語上古音的元音問題

| | 李 | 周 | 張 | P. | 余 | 王 | 鄭 張 | B.B. |
|-----|--------|------|-----|-----|------------|-----|---------------|---------------|
| 之 部 | əg | əʎ | əg | əʎ | oɦ, uɦ | ə | u | ɨ |
| | ək | ək | ək | ək | ok | ək | uɡ | ɨk |
| 蒸 部 | əng | əng | əŋ | əŋ | ong | əŋ | uŋ | ɨŋ |
| 幽 部 | əgw | əwʎ | əug | əw | oɦw, iɦw | u | u, iu, uɹu | u, iw |
| | əkʷ | əwʰk | əuk | əkʷ | okʷ, ikʷ | uk | ug, iug, uug | uk, iwk |
| 中 部 | əngw | əwng | əuŋ | əŋw | ongw | uŋ | uŋ | ung |
| 宵 部 | agw | awʎ | aug | aʎ | aɦw, eɦw | o | eu, au, ou | ew, aw |
| | akw | awk | auk | aq | akw, ekw | ok | eug, aug, oug | ewk, awk |
| 侯 部 | ug | ewʎ | ug | aw | uɦ | ɔ | o | o |
| | uk | ewk | uk | akw | uk | ɔk | og | ok |
| 東 部 | ung | ewng | uŋ | aŋw | ung | ɔŋ | oŋ | ong |
| 魚 部 | ag | aʎ | ag | aʎ | aɦ, eɦ | a | a | a |
| | ak | ak | ak | ak | ak, ek | ak | ag | ak |
| 陽 部 | ang | ang | aŋ | aŋ | ang, eng | aŋ | aŋ | ang |
| 支 部 | ig | eʎ | ig | aj | ifi | e | e | e |
| | ik | ek | ik | ac | ik | ek | eg | ek |
| 耕 部 | ing | eng | iŋ | aŋ | iŋ | eŋ | eŋ | eng |
| 歌 部 | ar | a | a | al | ar, ur | ai | ei, ai, oi | (ejʔ)aj, oj |
| 祭 部 | ad | ar | ad | ats | el, al, ul | a:t | eds, ads, ods | ets, ats, ots |
| | at | at | at | at | et, at, ut | at | ed, ad, od | et, at, ot |
| 元 部 | an | an | an | an | en, an, un | an | en, an, on | en, an, on |
| 脂 部 | id | er | id | əj | il, ir | ei | i | ij |
| | it | et | it | əc | it | et | ig, id | it |
| 真 部 | in | en | in | əŋ | in | en | iŋ, in | in |
| 微 部 | əd, ər | ər | əd | əl | ol | əi | ui, ui | ɨj, uj |
| | ət | ət | ət | ət | ot | ət | ud, ud | ɨt, ut |
| 文 部 | ən | ən | ən | ən | on | ən | um, un | ɨn, un |
| 緝 部 | əp | əp | əp | əp | ov, iv | əp | ib, ub, ub | ip, ɨp, up |
| | | | | | op, ip | | | |
| 侵 部 | əm | əm | əm | əm | om, im | əm | im, um, um | im, ɨm, um |
| 葉 部 | ap | ap | ap | ap | ev, av | ap | eb, ab, ob | ep, ap, op |
| | | | | | ep, ap | | | |
| 談 部 | am | am | am | am | em, am | am | em, am, om | em, am, om |

如果逐部檢討，容易陷入瑣碎的細節，我想簡易的辦法是討論個別的元音。但是擬音牽涉整體的音韻結構，在討論元音之前還要先作一些一般性的觀察。

以上八家的擬音可以分作三類：一類以李先生的音系為標準，陰聲字具有韻尾。各家在元音的擬測上稍作增減，個別韻部的韻母略有不同，大的間架並沒有顯著的差異，這一類包括李、周、張、余四家。一類以王力的音系為標準，陰聲字都沒有韻尾。鄭張和 Baxter 各自研究的結果有許多相同的地方，尤其在離析韻部方面，看法非常一致，而兩人的論據卻不相同，很值得重視。另一類只有 Pulleyblank 一家，他的元音只有 ə, a 兩種，韻尾卻有許多種類。我(1975:32)曾經指出，一般語言的基本元音是 i, u, a 三個，如果一個語言沒有 i, u，是很不容易取信於人的。他(1989:2)提到 i, u 在許多語言中跟 j, w 有密切關係，可以把 i, u 分析為輔音成分成音節的現象；同時把一個語言分析為兩個元音，一個元音甚至沒有元音，並不否認 i, a, u 基本元音三角的重要性。我覺得把一個現存的語言中的 i, u 分析為 j, w 是一回事，推測一個古語完全沒有 i, u 是另一回事。在他的系統中也看不出來把 j, w 解釋為 i, u 的可能。至少我認為別的有 i, u 的系統更為可信。

現在我們從大家都同意的元音開始：

第一、元音 a。各家都有元音 a，包括魚、陽、歌、祭、元、葉、談等部。

第二、元音 ə。大部分都有元音 ə，鄭張寫作 u，Baxter 寫作 i，他們都承認只有一個央元音，另外並沒有跟 u 或 i 對立的 ə。如果我們設立一個央元音應無問題，音值的高低以下再檢討，共包括之、蒸、微、文、緝、侵等部。只有余迺永擬成 o, i 等元音，頗有不同，但仍承認詩經時代都是 ə。

這兩個元音大家所以如此擬構，自然有許多理由，中古音、現代方言、域外譯音、音韻結構大體上都能支持，因此這裡的判斷並不是採取簡單的多數決，而是肯定各家擬音的正確，沒有必要就不再詞費，但有問題時就要再檢討，例如之部的擬音就有商量的餘地，詳見下文。

除去這兩個元音之外，其他的元音就難有一致的看法，我們只能從 a, ə 兩個元音未能涵蓋的其餘未構擬的韻部說起。同時還有些韻部鄭張和 Baxter 兩位構擬

一個以上的韻母，也要加以考慮。

第三、元音 i。先看脂真支（佳）耕四部的情形，他們跟中古各韻的關係如下：

| 中古韻類 上古韻部 | | 一 等 | 二 等 | 三 等 | 四 等 |
|--------------|----|-----|-----|-------------------|-----|
| 脂 部 | 陰聲 | ○ | 皆 | 脂（支） ⁶ | 齊 |
| | 入聲 | ○ | 黠 | 櫛、質、術 | 屑 |
| 真部 | | ○ | 山 | 臻、真 | 先 |
| 支 部 | 陰聲 | ○ | 佳 | 支 | 齊 |
| | 入聲 | ○ | 麥 | 昔 | 錫 |
| 耕部 | | ○ | 耕 | 清 | 青 |

這四部共同的特點是變到中古音沒有一等韻，⁷如果我們相信中古一等韻應該是一個偏後的低元音，再參考這些韻在現代方言的讀法，認為這幾部具有一個前高元音 i，正如李先生擬測的一樣，大概是極可能的結論。

如果要給這幾部擬測 e 之類的前元音，亦無不可，但是脂真和支耕平行的現象不能忽略。假使分別擬成不同的元音可能不符合韻部的結構，例如 Pulleyblank 擬成 əj（脂）和 aj（支），鄭張和 Baxter 都擬成 i（脂）跟 e（支）的對比，恐怕未必合適。同時脂真支耕假設是 e 元音，那麼別的韻部就不能再擬 e 元音，因為其他各韻部都有變入中古一等韻的韻母，主要元音如也是 e，就難以解釋彼此演變上的差異。

6 脂部陰聲字中有少數後來變到中古支韻的字，如“爾、邇、璽”等字，基本上都是從“爾”得聲的字，漢代都入支部，李先生沒有擬音，是有待解決的一個小問題。

7 這一個分配上的特點早就有人注意到，見董師(1948:107)及李先生(1971:23)的討論，但是頗有人忽略這一點，這裡其實只是重申師說而已，下文侯東兩部的情形亦復如此。

另外，鄭張提出許多脂部入聲中古變入職韻的字，認為上古另有 -ik 的來源，例如質屑韻的“節，血，必”跟後來職韻的“即，洫，弋”分別諧聲，又提出別的諧聲證據，又讀現象，推斷上面這一類的字本來都是 -ik，另外真韻有些字本來該是 -iŋ。這當然是一種見解，但我想諧聲詩韻時代的 -it, in 在某些方言裡後來變成 -ik, -iŋ 也是可能的演變。正如閩語龍溪話有下列的讀法：筆 pik，鬚 piŋ，蜜 bik，陣 tiŋ 等等，顯然都是從 -it, -in 變來的。

總之，在一般語言中，i 遠較 e 元音更為常見，我相信李先生為這四部擬測的 i 元音，還是最有說服力的系統。

第四、元音 u。跟上面同樣的理由，再以侯東兩部來說：

| 中古韻類 上古韻部 | 一等 | 二等 | 三等 | 四等 |
|--------------|----|----|----|----|
| 侯 陰聲 | 侯 | | 虞 | ○ |
| 部 入聲 | 屋 | 覺 | 燭 | ○ |
| 東部 | 東 | 江 | 鍾 | ○ |

這兩部的字變到中古都沒有四等韻，李先生據中古音上推為高元音 u，我覺得理由非常充分，因為後來三等韻的字在上古是 -juk, -juŋ，自然就沒有 -iuk, -iuŋ 這一類的韻母。如果要把這兩部改擬為元音 o，就會產生一些不可解的問題，何以 i 不能跟 o 配合？何以 u 元音的韻部後來可以產生四等韻，反而 o 元音的韻部不能產生？例如鄭張和 Baxter 的幽部都有 u，到中古有四等韻蕭和錫。王力擬成 -ɔ, -ɔk，問題一樣存在。

第五、元音 ɿ。上古音還有兩部跟侯東的現象一致，似乎沒有人特別注意，就是之蒸兩部一向擬測為 ə 元音的，也沒有四等韻的字。

| 中古韻類 上古韻部 | 一 等 | 二 等 | 三 等 | 四 等 |
|--------------|-------|-----|-------|-----|
| 之 陰聲 | 哈、灰、侯 | 皆 | 之、脂、尤 | ○ |
| 部 入聲 | 德 | 麥 | 職、屋 | ○ |
| 蒸部 | 登 | 耕 | 蒸、東 | ○ |

這一個現象李先生沒有解釋，大概因為之部長久以來已經擬為 ə 元音，沒有什麼爭論。現在看到這樣的組織，我們要說明當文部的 -ən 可以配 i，具有 -iən 韻母，變成後來的四等先韻；侵部也可以有 -iəm 韻母，變成後來的添韻，那麼何以只有 -əŋ 不能配 i 呢？我想比較可能的解釋是這一部具有一個跟 u 類似的央高元音 ɨ，正如鄭張和 Baxter 的擬音一樣，同是高元音，有了 jɨŋ, jɨk，就沒有 iɨŋ, iɨk，就像侯東兩部沒有 iuŋ, iuk 一樣的道理，因此不會產生中古的四等韻。

元音 ɨ 只出現在 -g, -k, -ŋ 的前面，環境既有限制，跟 ə 元音出現的環境又互補，在詩經時代可以說只有一個 ə。那麼分佈上的缺漏可以歸之於更早的來源。我們可以認為 ɨ 是之蒸部諧聲時代的元音，到詩經時代已經變成 ə 了。

剩下未討論的韻部只有幽、中、宵三部，正好是李先生擬為 -gw, -kw, -ŋw 的韻部，到現代方言大部分都還保存 -u 韻尾。在結構上幽、中兩部沒有特別的地方，中部沒有四等字可能只是偶然的現象，因為幽部是有四等韻的。至於宵部沒有陽聲韻是很特殊的分配，大概也是從諧聲時代演變到詩經時代的結果，早期原來可能有 -auŋ 韻，到了詩經時代已經變入其他的陽聲韻了。⁸

對於這幾部的擬音，本來我傾向於採用張琨的系統，認為幽部是 -əug, -əuk，中部是 -əuŋ，而宵部則是 -aug, -auk。一方面免除為上古音擬測三種合口韻尾的困擾，一方面也因為這樣的韻母在福州話中可以找到類似的實例。但是，如果觀察 əu 和 au 出現的環境，就有一些不好解釋的現象：

8 李先生(1971:46)認為宵部的陽聲字可能老早併入陽部了。

| | -g-k-ng | -d-t-n | (-b)-p-m |
|----|---------|--------|----------|
| əu | x | o | o |
| au | x | o | o |

何以 əu, au 只出現在舌根韻尾之前？ə, a 既可以跟 u 配成複元音，何以不能跟 i 也配成複元音，如 əi, ai。這樣看來，李先生原來擬測的 -əgw, -əkʷ, -əŋw 和 -agw, -akw, -aŋw，還是有他的優點。

到這裡爲上，我們只從韻部的結構上作了一些討論，還須要從別的角度再加以觀察。

三、從音節結合的特徵論上古元音的擬測

根據上文的討論，真正肯定的元音只有四個：i, u, ə, a，其中 ə 的一部分可能來自早期諧聲時代的 ɿ。這四個元音正是李方桂先生的系統。現在要討論音節組合必須要有一個出發點，我們就把四個元音配合的情形列成一表（參見下頁）。聲母按照發音部位及方法分爲五組：唇音(P)、舌尖音(T)、舌尖塞擦音及擦音(Ts)、舌根音(K)、圓唇舌根音(Kw)；介音分成五種：無介音 ø、二等介音 -r-、三等介音 -rj-, -j-, -ji-。四等的 -i- 李先生歸之於元音，現在仍舊照辦。除去 -iə, -ia 之外，李先生的系統裡還有 -ua-，現在把它放在相關的地方。韻尾按照部位分成舌根、圓唇舌根、舌尖、雙唇等四類，-r 單獨列出，作爲舌尖音看待。

這張表上對 ia、iə 這一類的音採取了兩種排列法。一種像 -jiang，我把 -ji- 看成介音；另一種像 -rian，我把 -r- 看成介音，ia 作爲複元音。因此凡是 -ji- 接元音時，就不可能再有 -j- 接 iə、ia 複元音的情形出現。例如有 -ji 接 -an，就不會有 -j- 接 -ian。現在討論下列兩個問題：

第一、複元音 -iə 和 -ia。Pulleyblank (1962)，鄭再發(1983)，Baxter (1992) 從不同的角度討論 -rj- 的問題。鄭和 Baxter 都認爲李先生的 -ji- 的一部分應該改擬爲 -rj-。這樣一來就減少了很多擬成 iə、ia 等複元音的韻母。

| 聲 母 | 介 音 | -g -k -ng | -gw -kw -ngw | -r | -d -t -n | (-b) -p -m |
|--------|--------|-----------|--------------|--------|------------------------|------------|
| | | i u ə a | ə iə a ia | ə a ua | i ə iə a ia ua | ə iə a ia |
| P | ø | x x x x | x x | x | x x x x | x x |
| | r | x x x x | x x | x | x x x x | |
| | rj | | | | | |
| | j | x x x x | x x | | x x x | x x |
| | ji | x x | x x | x | x x | x |
| T | ø | x x x x | x x x x | x x x | x x x x x x | x x x x |
| | r | x x x x | x | x | x x x x x | x |
| | rj | x x x x | x x | x x | x x x x | x x x |
| | j | x x x x | x x | x x | x x x x | x x |
| | ji | x | | x | x | x |
| Ts | ø | x x x x | x x x | x x x | x x x x x x | x x x |
| | r | x x x | x | x | x x x x x | x x x |
| | rj | x x x | x | | x x x | x |
| | j | x x x x | x x | x x | x x x x | x x |
| | ji | x | | x | x | x |
| K | ø | x x x x | x x x x | x | x x x x | x x x |
| | r | x x x x | x x | x | x x x x | x x |
| | rj | x x x x | x x | | x x x | x x |
| | j | x x x x | x x | x | x x x (x) ⁹ | x x |
| | ji | x | x x | | x x | x x |
| Kw | ø | x x x | | x x | x x x x | |
| | r | x x x | | x | x x x | |
| | rj | | | | | |
| | j | x x x | | x x | x x x | |
| | ji | x x | | x | x | |

9 這裡由於李先生把群母和喻三都擬作 g- 的關係，產生一些例外，因此有蹶 gjuat，蕨 kjuat，以及圉 gjuan 等擬音。

現在檢看表上 P 和 Kw 之後的 -rj-，根本不配任何韻母。鄭再發指出，-ji- 跟 -rj- 一樣，都有使後面的元音前移的作用。最有意思的一點，是李先生的系統中有些中古的重紐無法分別，如弁 = 便，都是 bjian，如把部分的 -rj- 跟 -ji- 合併，就多出一個可能的地位來分辨重紐，因為重紐只出現在唇牙喉音之後。鄭和 Baxter 都注意到這個問題，Baxter 的說明尤其清楚。

在 T, Ts, K 等部位之後仍有 -rj-, -ji- 的對立，換句話說，還有 iə, ia 的存在。有的為分辨重韻，也有的為分辨重紐，不必更動，詳細的擬音還須要仔細檢討。

第二、複元音 -ua。在李先生的系統裡，ua 只出現在歌祭元三部，而且只在舌尖音聲母之後才有 a 和 ua 的對立。要是把 ua 改擬為合口的元音如 u 或 o 似乎都言之成理。但是我們必須要注意擬測為 u 或 o 的時代問題，李先生 (1971:54) 自己就曾推測 uan 和 uat 有來自早期 un 和 ut 的可能。如果認為詩經時代歌祭元三部都各有三種韻母，如元部有 en, an, on 等三種，那麼就要費許多力量來解釋詩經押韻的現象，未必與事實相合。

四、從語音對比論上古元音的擬測

一個語言裡最需要的元音應該可以從語音對比之中看出來，例如英語的 beat, bit, bet 等等。對古語而言，有了對比之後，再看擬測幾個元音最為合適。

根據上一節的表格觀察，在同一類韻尾之前出現的單元音及複元音最多只有六種，例如在舌尖音和 -d, -t, -n 之間可以有 i, ə, iə, a, ia, ua 等六種。例字如下：

洒 sin : 孫 sən : 先 siən : 姍 san : 霰 (去) sian : 酸 suan

如果把其中的 iə, ia, ua 三種複元音改擬為單元音的話，在理論上就可以得到六個元音的系統。只要稍加變化，就可以寫成下面的情況：

洒 sin : 孫 sun : 先 sin : 姍 san : 霰 (去) sen : 酸 son

鄭張和 Baxter 的系統可能就是如此。這樣一來，在音節結構上確實比李先生

的系統簡單，但是增加出來的元音必須設法也增加它出現的環境，除去改擬一些韻部的元音之外，他們兩位都把緝侵，葉談等部鼎分爲三，因此分別有 ip, ɪp, up; im, ɪm, um; ep, ap, op; em, am, om 等韻母。在詩經中緝部字入韻的只有十個韻組，十五個不同的字。葉部字入韻的更少，只有五個韻組，六個不同的字。¹⁰ 要作這樣細密的分別，恐怕有一點勉強，我總是不敢坦然接受這樣的擬音。但是，我的態度並不能推翻理論上的可能性，因此下文還要提出別的反面的證據來辨駁。

至於加上介音之後的最小對比，自然數目大爲增加，例如在上列例字之外，還有以下諸字：

刪 sran：仙 sjan：莘 srjin：新 sjin。

因爲各家大體上都承認幾種介音，現在用不著再細說。

五、從漢代語音的演變論上古元音的擬測

研究上古音的人通常都注意語音演變到切韻的規則，但是注意跟漢代語音結構比較的就比較少。以往可能是受了材料的限制，現在有了羅常培、周祖謨(1958)的漢代韻部資料，以及 Coblin (1983) 對於東漢聲訓、音義、譯音的詳細研究，我們就多了一個觀察的角度。

羅周兩位(1958:13-14)分析漢代韻字的結果跟上古音非常接近，主要的不同只有以下幾點：

1. 上古的陰聲部脂微、其入聲質術，以及相當的陽聲韻部真文，到西漢分別合而爲一，成爲脂、質、真三部。
2. 上古侯魚兩部到西漢合而爲一，成爲新的魚部。
3. 之部“牛丘龜”等字到西漢變入幽部。
4. 西漢魚部“家華”等字轉入東漢歌部，西漢歌部“奇爲”等字轉入東漢支部，西漢蒸部“雄弓”等字轉入東漢冬部，西漢陽部“京明”等字轉入東

¹⁰ 詳見張日昇(1968:126-7)。

漢耕部。

以上前兩條是韻部的合併，後兩條是韻部之中部分韻字的轉變，從上古到東漢的語音演變如此而已！因此羅周兩位歸納出來的韻部，除將入聲韻從陰聲韻分列以外，間架跟上古音幾無二致。我們既沒有看到“歌、祭、元”各有三種元音不同的韻母，也沒有看到“緝、侵、葉、談”等部還可以再分小部的現象。

根據羅周的資料，我(1975)曾經試擬過漢代的元音系統；梅祖麟(1980)也曾研究西漢及東漢各方言之間去入通押的情形。如果要批評，當然可以說我的擬音是從李先生的系統出發，難免受到範圍。但我們不能忘記我的擬音符合羅周兩位單獨研究的韻部間架，也曾考慮韻部與韻部之間的關係。如果說，上古的二十二部影響力量太大，大家不敢貿然再加細分，但以羅周兩人的眼光，也不至於忽略漢代韻部重要的區別。同時我研究魏晉韻部的結果也顯示一脈相承的關係，等於是自動證明。

再退一步，即使我們對韻字分部有意見，其他的資料又如何呢？Coblin (1983)的書中曾經有系統地分析過東漢佛經中梵漢譯音的情形，我從梵文出發，可以列成下表：

| 梵 音 | 東漢譯音中包含之韻部 |
|--|---|
| i | 支部；脂（微）部脂齊韻字、真（文）、質部 |
| ī | 支、耕部；脂（微）部脂齊韻字、質部 |
| ^e ai(=Pkt.e) ¹¹ | 支部；質部 |
| a | 1. 歌部＝魚部麻韻字、鐸部；祭、月、元部；盍、談部 2. 之、職、蒸部；真（文）質部；侵部 |
| ā | 1. 宵部 2. 歌部；鐸部；祭、月、元部；談部 3. 脂微部哈灰韻字；緝侵部 |
| ^o au(=Pkt.o) | 幽部12%，沃部；侯部39%；魚部模虞韻字 |
| u | 幽部88%；侯部61%，屋部；真（文）、質部 |

11 Pkt. 是Prakrit的簡稱，指印度與文言梵文相對的白話語言。

表上梵文中沒有的音就是未在佛經譯音中出現的。東漢韻部據 Coblin 用羅周的名稱。爲對照方便，只把已經合併的上古韻部放在括號裡，如真（文）部。

儘管這裡譯音代表的時代只有東漢，跟上古音也許還有方言的不同。但是我們看到一些有意義的現象，可以作一些推論：

第一、對譯梵文的 i, ī 和 e，漢代基本上用支耕、脂（微）質真（文）等部的字，大體上正是上古的 i 元音韻部。支脂平行的現象還可以看得出來。我跟 Coblin 都認爲東漢的元音支耕部是 -ei-，脂真等部是 əi。

第二、真（文）質部的字有時對 a，有時對 u，有時對 i，方向不明，Coblin (1983:117) 擬測元音 ə，認爲語音環境可能使 -ə- 有不同的表現。

第三、之職蒸部的字對譯梵文的 a，緝侵部的字對譯 a 或 ā。容易令人覺得這些部的上古音似乎都不該是高元音。

第四、幽侯兩部的字對譯 u 和 o，但跟 u 的關係遠比 o 近。

第五、幾乎所有李先生系統中具有 a 元音的韻部都對譯梵文的 a 和 ā，例如魚鐸、宵、歌祭月元、盍談，可以說無一例外。從反面來說，宵部只對譯長 ā，不對譯 e, i 或 o；歌祭元部也沒有對譯 e, i, o 的例子，因此我們相信上古的 a 元音在許多韻部中到東漢並沒有大的改變。如果要給這些韻部擬測 a 以外的元音，解釋起演變來就要大費周章。

總結東漢的佛經譯音，對李先生的系統有很大的支持力。Coblin 對於漢代注經家的音義、聲訓有深入的研究，他的結論也顯示從李先生的系統解釋後來元音演變的情形似乎最有說服力。這裡不再贅引。

六、結 語

從以上幾節的檢討，我們看到種種線索指向相當一致的結論，也就是詩經時代的元音系統還是李先生的四個元音 i, u, ə, a 最爲可靠，在諧聲時代目前看到的可能是五個元音 i, ɪ, u, ə, a，其中 ɪ, ə 兩個央元音在出現的環境上是互補的。

作爲本文的結語，還有兩點要加以說明的：

1. 龔煌城(1980)曾從漢藏語的比較角度論證上古四元音系統的正確性，相當確鑿可靠。本文先從漢語本身的證據建立元音系統，現在可以引用他的研究作為輔證，那就更為有力。

2. 黃季剛，董同龢先師(1948)，陳新雄(1989)，余迺永(1985)都曾從諧聲字的角度討論“談添盍帖”應分四部的說法。對於早於詩經時代的諧聲時代相信還有發展的餘地。余迺永已經做了許多基本的工夫，我最近正在探討甲骨文中的聲韻現象，希望將來對諧聲時代的系統能有進一步的看法。

(本文於民國八十二年二月十八日通過刊登)

引用書目

丁邦新

- 1979 〈上古漢語的音節結構〉，《中央研究院歷史語言研究所集刊》（史語所集刊）50.4:717-739。
- 1981 〈漢語聲調源於韻尾說之檢討〉，《中央研究院漢學會議論文集》267-283。
- 1987 〈上古陰聲字具輔音韻尾說補證〉，《國立台灣師範大學國文學報》16:59-66。

王 力

- 1957-58 《漢語史稿》，科學出版社。
- 1987 《漢語語音史》，王力文集 第十卷。

李 榮

- 1956 《切韻音系》，科學出版社。

李方桂

- 1971 〈上古音研究〉，《清華學報》，新九卷第1.2期合刊，1-61。
- 1976 〈幾個上古聲母問題〉，《中央研究院總統蔣公逝世論文集》1143-1150。

余迺永

- 1985 《上古音系研究》，中文大學出版社。

周法高

- 1969 〈論上古音〉，《香港中文大學中國文化研究所學報》2.1:109-178。
- 1970 〈論上古音和切韻音〉，《香港中文大學中國文化研究所學報》3.2:321-457。

俞 敏

- 1984 《中國語言學論文選》，光生館，東京。

丁 邦 新

張日昇

- 1068 〈試論上古四聲〉，《香港中文大學中國文化研究所學報》1:113-170。

梅祖麟

- 1980 〈四聲別義中的時間層次〉，《中國語文》6:427-443。

陳新雄

- 1989 〈論談添盍怙分四部說〉，《中央研究院第二屆國際漢學會議論文集》，語言文字組，53-66。

黃季剛

- 〈談添盍怙分四部說〉，《黃侃論學雜著》290-298。

董同龢

- 1948 〈上古音韻表稿〉，《史語所集刊》18:1-249。
1960 〈四個閩南方言〉，《史語所集刊》30:729-1042。

鄭張尚芳

- 1987 〈上古韻母系統和四等，介音，聲調的發源問題〉，《溫州師範學院學報》1987.4:67-90。

羅常培、周祖謨

- 1958 《漢魏晉南北朝韻部演變研究》，第一分冊，北京。

顧百里 (Kubler, Cornelius)

- 1978 《澎湖群島方言調查》，台大碩士論文。

Baxter, William H. III

- 1980 Some Proposals on Old Chinese Phonology, *Contributions to Historical Linguistics*, Ed. by Frans Van Coetsem & Linda R. Waugh, 1-33.
1992 *A Handbook of Old Chinese Phonology*. Berlin: Mouton de Gruyter.

Bodman, Nicholas C.

- 1971 A Phonological Scheme for Old Chinese, Paper presented for the Chinese Linguistics Project, Princeton University.

Chang, Kun and Betty Shefts Chang

- 1972 *The Proto-Chinese Final System and the Ch'ieh-yün*, Monographs Series A, No.26, Institute of History and Philology.

Cheng, Tasi-fa 鄭再發

- 1983 The Distribution of -r- and -j- in Archaic Chinese, *Bulletin of the Institute of History and Philology (BIHP)* 54:363-75.

Coblin, W. South

- 1983 *A Hand Book of Eastern Han Sound Glosses*, The Chinese University Press, Hong Kong.

Gong, Hwang-cherng 龔煌城

- 1980 A Comparative Study of the Chinese, Tibetan, and Burmese Vowel System, *BIHP* 51.3:455-490.

Karlgren, Bernhard

- 1954 Compendium of Phonetics in Ancient and Archaic Chinese, *Bulletin of the Museum of Far Eastern Antiquities* 26:211-367.
1957 *Grammata Serica Recensa*, *BMFEA* 29:1-332.

Pulleyblank, E.G.

- 1962-63 The Consonantal System of Old Chinese, *Asia Major* 9:58-265.
1977-79 The Final Consonants of Old Chinese, *Monumenta Serica* 33:180-206.
1989 Ablaut and Initial Voicing in Old Chinese Morphology: *a* as an Infix and Prefix, *Proceedings of the Second International Conference on Sinology*, Academia Sinica.

Ting, Pang-Hsin 丁邦新

- 1975 *Chinese Phonology of the Wei-Chin Period ----- Reconstruction of the Finals as Reflected in Poetry*, Special Publications No. 65, Institute of History and Philology, 296pp.

丁 邦 新

Yakhontov, S.E.

1960a Consonant Combinations in Archaic Chinese, Paper presented to
25th Internatinal Congress of Orientalists.

1960b The Phonolgy of Chinese of the first millenium B.C. (Translated by
Jerry Norman, *Unicorn* 6:52-75, 1970.)

關於上古音的四個假設*

William H. Baxter (白一平)

密西根大學

1. 前言

擬測上古漢語的語音系統是一個逐漸的過程。不同的研究者提出不同的假設。有的假設已經為很多人所接受。比方說，現在很多人都同意，中古音的二等韻母是從有介音 **-r-* 的音節來的。

本文討論的是四個還有爭論的假設。既然學者們對它們還沒有一致的看法，所以我覺得很值得討論。我今天只能說大概的內容；在我最近出版的書 (Baxter 1992)，對這些問題討論得比較詳細。¹

我給這四個假設起了下面的名字：

1. **rj* 假設
2. 圓唇元音假設
3. 前元音假設
4. 清塞音韻尾假設

討論這些假設以前，我先簡單地說上古音的聲母、介音、主要元音、和韻尾。我認為中古音的聲調是從上古音的韻尾後面的成分來的：上聲是從喉塞音 **-ʔ* 來的；去聲是從 **-s* 來的。

* 編者按：本文是 1991 年 8 月專題討論的講稿。

1 在我寫這篇論文的時候，密西根大學的連心達同學給我不少的幫助；初稿發表以後，鄭張尚芳先生在中古音方面也指出了一些錯誤的地方，還有一位審查者也提出了一些應該修改的地方，特此致謝。

我擬測的聲母跟李方桂先生的大同小異。有一套圓唇的舌根音和喉音 *k^w- 等；還有一套清鼻音 *hm-、*hn-、*hng-、*hng^w- 和清的 *hl- 等。跟李先生不一樣的地方是，我認為中古音的來母 l- 是從包括 *r- 的複聲母來的：²

(1) 藍 lán < lam (談) < *g-ram (李：*glam)

蠻 luán < lwan (寒) < *b-ron (李：*bluan)

(在這裡，中古音的標法是按照我書裡用的系統(Baxter 1992: 45-95)；後面括弧裡有《切韻》的韻的名字。)我認為上古音另外有一個聲母 *l-，跟中古音的 l- 沒有關係；這個 *l- 相當於李先生的 *r- 和 *d- 的一部分：³

(2) 以 yǐ < yiX (止) < *ljɪʔ (李：*rəgx)

苔 tāi < doj (哈) < *li (李：*dəg)

現在說介音吧。我擬測的介音也跟李先生的差不多：有二等的介音 *-r- 和三等的介音 *-j-；這兩個介音可以使聲母捲舌化或者顎化。跟李先生不同的是，*-r- 和 *-j- 可以更自由地在一塊兒出現。這樣擬測介音就可以說明為甚麼傳統的韻部裡常常是三等韻母比較多。這就是我所說的“*rj 假設”。⁴

2 龔煌城先生(1990)提出了不少中古音 l- 來自上古音帶 *r 的複聲母 *C-r- 的例子。龔先生也認為中古音的 l- 也可以來自上古音的單獨的 *r-，而我暫時接受包擬古(Bodman)的假設，認為單獨的 *r- 可能變成中古音的 y- (喻四)。參看 Bodman (1980:74) 和 Baxter (1992:199-202)。

3 這樣擬測 *l- 本來是 Pulleyblank 的建議(1962, 1973)；龔煌城(1990)也接受了這個說法。

4 *rj 假設的基本內容也應歸功於 Pulleyblank (1962)。李方桂先生(1976)也提出了 *-rj- 使舌根聲母變成舌前音的假設(*Krj- > TSy-)；我不同意他這個說法。他的說法可以說明一部分正齒音聲母的字為甚麼跟舌根音聲母有諧聲關係。但有一些三等韻母的區別(包括重紐韻母)是李先生的系統不能解釋的。比如元部開口明明有三個不同的三等韻母，即 -jen (仙三)，-jien (仙四)，和 -jon (元)，但李先生的上古音只有 *-jan 和 *-jian 兩個韻母。用 *-rj- 來解釋重紐及其相關的韻母也有諧聲字的根據，如京 jīng < kjæŋ (庚三) < *krjang，涼 liáng < ljang < *g-rjang，泣 qì < khip < *khrjip，立 lì < lip < *g-rjip。這類的例子如果不擬測 *Krj- 之類的複聲母，就很難解釋。

我擬的主要元音跟李先生的不太一樣。我認為上古音有六個主要元音：

- (3)
- | | | |
|----|----|----|
| *i | *ɨ | *u |
| *e | | *o |
| | *a | |

這樣，有兩個前元音 *i 和 *e；有兩個圓唇的後元音 *u 和 *o；還有兩個展唇的央元音，一個高的 *ɨ 和一個低的 *a。

有前元音的音節，如果沒有介音，就變成中古音的四等音節：

- (4) 堅 jiān < ken (先) < *kin (李：*kin)
 肩 jiān < ken (先) < *ken (李：*kian)

這就是“前元音假設”的主要內容。⁵

圓唇元音的分布比李先生的 *u 和 *ua 廣一點。我擬的 *u 和 *o 可以在舌根韻尾前出現：

- (5) 冬 dōng < towng (冬) < *tung (李：*təngw)
 東 dōng < tuwng (東) < *tong (李：*tung)

也可以在 *-n、*-t、*-j 等舌尖韻尾前出現。在這種音節裡，上古的 *u 和 *o 到了後來就分裂成合口的 -wɨ- 和 -wa- 了：

- (6) 敦 dūn < twon (魂) < *tun (李：*tən)
 端 duān < twan (寒) < *ton (李：*tuan)

這個說法本來是雅洪托夫提出的 (Jaxontov 1960)。

我認為，連唇音韻尾前本來也有圓唇元音和展唇元音的區別；這樣可以解釋為甚麼本來收 *-p 韻尾的去聲字有的是開口，有的是合口：

5 這樣擬測前元音，好像有過三個人不謀而合：除了我 (1977) 以外，還有鄭張尚芳 (n.d., 1987) 和 Starostin (1989)。

- (7) 合 hé < hop (合) < *gop (李: *gəp)
 會 huì < hwajH (泰) < *gwats < *gots < *gops (李: *gwadh)
 盍 hé < hap (盍) < *gap (李: *gap) = 胡不 *ga pɿ
 蓋 gài < kajH (泰) < *kaps (李: *kabh)

那麼“圓唇元音假設”的主要內容就是說，上古圓唇元音的分布是相當整齊的；中古音的合口介音 -w- 有一部分是從圓唇元音來的，其他的都是從圓唇聲母 *kʷ- 等來的。

最後說韻尾和產生聲調的成分。我認為上古音的韻尾跟中古音的差不多：有鼻音 *-m、*-n、*-ng（但是不必擬測圓唇舌根鼻音 *-ngʷ）；有清塞音 *-p、*-t、*-k、*-wk（*-wk 也可以寫成 *-kʷ）；也有半元音 *-j 和 *-w：

- (8)
- | | | | |
|-----|-----|------|------|
| *-m | *-n | *-ng | |
| *-p | *-t | *-k | *-wk |
| *-w | *-j | | |

到了《切韻》時代，有一部分清塞音韻尾在一定的條件之下早就消失了，特別是後綴 *-s 之前：

- (9) 憶 yì < ʔik (職) < *ʔjik (李 *jək)
 意 yì < ʔiH (志) < *ʔjiks (李 *jəgh)

說 shuō < sywet (薛) < *hljot (李 *hrjuat?)
 又讀 shuì < sywejH (祭) < *hljots (李 *hrjuadh?)

這樣，中古音的陰聲字，特別是去聲字，有一部分本來有塞音韻尾。不過，我認為大多數的陰聲字在上古的時候沒有輔音韻尾；上古音沒有濁塞音韻尾 *-b、*-d、*-g、*-gw 等：

- (10) 耳 ěr < nyiX (止) < *njiʔ (李 *njəgx)
 九 jiǔ < kjuwX (有) < *kʷjuʔ (李 *kwjəwx)
 五 wǔ < nguX (姥) < *ngaʔ (李 *ngagx)
 死 sǐ < sijX (旨) < *sjiʔ (李 *sjidx)

這就是我所說的“清塞音韻尾假設”。

我現在把這四個假設說得詳細一點。先說 *-rj- 假設。

2. *rj 假設

傳統的上古韻部裡常常是三等韻母比較多。比方說，陽部只需要擬一個一等韻母，一個二等韻母，可是要擬兩個三等韻母，即《切韻》的陽韻和庚韻三等：

- (11) I -ang (唐) < *-ang (李 *-ang) 岡 gāng < kang < *kang
 II -æng (庚二) < *-rang (李 *-rang) 庚 gēng < kæng < *krang
 III -jang (陽) < *-jang (李 *-jang) 薑 jiāng < kjang < *kjang
 -jæng (庚三) < *-rjang (李 *-jiang) 京 jīng < kjæng < *krjang

(陽部的合口韻母都是從圓唇聲母來的，不必討論。)陽部的兩個三等韻母，李方桂先生擬測了 *-jang 和 *-jiang。不過，我覺得李先生把“複合元音” *ia 歸在這個韻部裡有一點問題。既然有三等的 *-jiang，為甚麼沒有四等的 *-iang，二等的 *-riang 呢？如果擬測 *-jang 和 *-rjang，語音單位的分布就比較整齊了：

- (12) *-ang
 *-rang
 *-jang
 *-rjang

我們也可以提出一些諧聲字的證據：

- (13) 京 jīng < kjæng (庚三) < *krjang (李 *kljiang)
 涼 liáng < ljang (陽) < *g-rjang (李 *gljang)，藏語 grang-ba ‘cold’
 丙 bīng < pjængX (梗三) < *prjang? (李 [*pljiangx?])
 兩 liǎng < ljangX (養) < *b-rjang? (古代的「兩」字是兩個「丙」字)

還有一點要注意。如果說庚韻三等是從 *-rjang 來的，那介音 *-r- 對主要元音的

影響是很一致的：不管後面有沒有三等介音，有介音 *-r- 的字都到《切韻》的庚韻裡去了。

蒸部的情形有一點像陽部的。唇音聲母之後有兩個三等韻母：

- (14) 馮 féng < bjuwng (東三) < *bjǝng (李 *bjǝng) ,
又讀 píng < *brjǝng (蒸) (李 *bjǝng)

李先生這裡擬了合元音 *iə。但是 *iə 的分布也很有限：沒有四等韻母 *-iǝng，也沒有二等韻母 *-riǝng。還有同源字可以證實介音 *-rj- 的存在：

- (15) 冰 bīng < ping (蒸) < *prjǝng (李 *pjǝng)
凌 líng < ling (蒸) < *b-rjǝng (李 *ljǝng?)

《豳風·七月》第八章(154.8)有「凌陰」詞，毛傳說是“冰室”的意思。

擬測 *-rj- 也可以解決一些別的問題。請看耕部：

- (16) II -eng (耕) < *-reng (李 *-ring) 耕 gēng < keng < *kreng
III -jieng (清) < *-jeng (李 *-jing) 輕 qīng < khjieng < *khjeng
-jǝng (庚三) < *-rjeng (李：“不合規則”) 驚 jīng < kjǝng
< *krjeng
IV -eng (青) < *-eng (李 *-ing) 經 jīng < keng < *keng

耕部跟陽部一樣有兩個三等韻母：有很多清韻字，可是還有庚三的字。李先生說耕部的庚三字“不合規則”(1971: 51)。但是這類的字真不少。我認為這類的字裡應該擬介音 *-rj-：

- (17) 平 píng < bjǝng (庚三) < *brjeng
鳴 míng < mjǝng (庚三) < *mrjeng
≠ 名 míng < mjieng (清) < *mjeng
荆 jīng < kjǝng (庚三) < *krjeng
命 mìng < mjǝngH (敬三) < *mrjengs (< *mrjings)
比較：令 líng < ljengH (勁) < *C-rjengs (< *C-rings, 李 *ljingh)
榮 róng < hjwǝng (庚三) < *wrjeng (李：“聲母，韻母皆不合規則”)
≠ 營 yíng < yweng (清) < *wjeng (李 *gwrjeng)

其他的有前元音的韻部也有不少字不合李先生的規則，也應該擬介音 *-rj-：

- (18) 技 jì < gjeX (紙三) < *grje? (支部)
 碑 bēi < pje (支三) < *prje (支部)
 ≠ 卑 bēi < pjie (支四) < *pje (支部)
 履 jì < gjæk (陌三) < *grjek (昔部)
 筠 yūn < hwin (真三) < *wrjin (真部)
 ≠ 畇 yūn < ywin (真) < *wjin (真部)
 密 mì < mit (質三) < *mrjit (質部)
 ≠ 蜜 mì < mit (質四) < *mjit (質部)

沒有介音 *-rj- 就很難解釋這個現象。

總而言之，一個韻部裡有幾個不同的三等韻母的時候，多半應該用介音 *-rj- 來區別。介音 *-j- 和 *-rj- 在展唇元音之前的作用可以概括如下：

- (19) *-jt- 、 *-ja- > 普通的三等
 *-ji- 、 *-je- > 重紐四等
 *-rjt- 、 *-rja- > 重紐三等
 *-rji- 、 *-rje- > 重紐三等

這樣也可以說明重紐的來源。重紐四等只有一個來源，即介音 *-j- 加前元音 *i 或 *e（這是“前元音假設”的一部分）。可是重紐三等是來自介音 *-rj- 加任何展唇元音。

3. 圓唇元音假設

圓唇元音假設的主要內容是說，中古音的合口介音 -w- 有一部分是從圓唇的主要元音 *u 或 *o 來的，其他的都是從圓唇聲母 *kʷ- 等來的。這樣可以解釋中古音的合口介音的分布。中古音的合口韻母有一大部分不能在舌齒音聲母之後出現。比方說，中古音有 kwang、kwen 之類的音節（即唐韻合口和先韻合口），可是沒有 twang 或 twen 之類的音節。

不過，還有一部分合口韻母可以在舌齒音聲母之後出現。這種音節雅洪托夫 (Jaxontov) 說本來有圓唇的主要元音 *u 或 *o，後來，主要元音分裂成 *wi 或 *wa：

- (20) 敦 dūn < twon (魂) < *twɪn < *tun
端 duān < twan (寒) < *ton
說 shuō < sywet (薛) < *hljwat < *hljot

李方桂先生雖然注意到雅洪托夫的論文 (1971: 39)，但是他認為這樣擬測上古音就跟《詩經》的韻文有衝突。李先生提出了一個很重要的假設：他說，“上古同一個韻部的字一定只有一種主要元音” (1971: 20)。我很贊成他這個假設。而如果用清代學者所擬定的韻部，圓唇元音假設確實有問題。比方說，按照圓唇元音假設，文部的一部分字要擬測展唇的 *-ɪn，還有一部分要擬測圓唇的 *-un，而 *-ɪn 跟 *-un 有不同的主要元音，不應該相押。

我本來接受李先生的說法，認為雅洪托夫的圓唇元音到了《詩經》的時代已經變成複合元音了，這樣說就避免跟傳統韻部發生衝突。不過，我自己研究《詩經》的韻文的時候就發現，圓唇元音和展唇元音相押的例子實在不多，多半不超過清代學者的韻部之間的接觸。我也採用了概律論的方法來回答這個問題：《詩經》韻文裡圓唇元音和展唇元音相押的例子那麼少，可能不可能是偶然的現象？結果是，這個可能性非常小。這個問題很複雜；我的書裡說得相當詳細，但我現在只能舉幾個例子。

文部的情形特別清楚。我按照圓唇元音假設，把《詩經》的文部韻字分成 *-ɪn 部和 *-un 部，在附錄裡列出。結果是，*-ɪn 和 *-un 相押好像只有一次，即《大雅·鳧鷖》第五章 (248.5) 有一個句子“公尸來止熏熏”，韻字是「熏」，這裡跟展唇的 *-ɪn 押韻；但是《大雅·雲漢》第五章 (258.5) 有一個句子“憂心如熏”，同一個「熏」字跟圓唇的 *-un 押韻：

- (21) 《大雅·鳧鷖》(248.5)：“公尸來止熏熏”（跟 *-ɪn 押韻）
《大雅·雲漢》(258.5)：“憂心如熏”（跟 *-un 押韻）

那麼，除了「熏」字以外，展唇的 **-in* 部和圓唇的 **-un* 部之間的界限是非常清楚的，很多傳統的韻部之間沒有那麼清楚的界限。⁶

圓唇元音假設有的時候好像跟諧聲字有衝突，但是這可能是《詩經》時代以後的現象。比方說，《說文解字》說「聞」字是從「門」字得聲的（《說文解字詁林》5356）：

- (22) 聞 wén < mjun (文) < *mjun
門 mén < mwon (魂) < *mɪn

按照圓唇元音假設，這兩個字的主要元音不同：「門」字跟 **-in* 押韻（參見《詩經》40.1A、93.1A、199.1A、261.4C）而「聞」字跟 **-un* 押韻（參見《詩經》71.3B、258.5A）；跟「聞」字大概有同源關係的「問」字也跟 **-un* 押韻（參見《詩經》82.3B、237.8B）。

不過從「門」的「聞」字可能出現得相當晚。《說文》裡也有一個從「昏」的古文「聞」字，而這個「昏」字應該屬於圓唇的 **-un* 部：

- (23) 昏 hūn < xwon (魂) < *hmun

從「昏」得聲的字也有

- (24) 緡 mín < min (眞三) < *mrjun，

在《召南·何彼穠矣》第三章(24.3)這個字跟圓唇元音的「孫」*sun 字押韻。

金文沒有從「門」的「聞」字，而從「昏」的字是常見的（參見《金文詁林》1509）。這樣，從「昏」的「聞」字好像比從「門」的「聞」字早。我推測圓唇的 **-un* 和展唇的 **-in* 在唇音聲母之後已經合流了的時候才出現了從「門」

6 按照概律論的分析，**-in* 和 **-un* 合韻的例子這麼少的概律不超過 0.00042 (Baxter 1992:430)。如果跟脂微兩部的情形比較，王力先生說，110個例子之中，脂微合韻的例子只有 26 個，而這“不能認為偶然的現象”（王力 1980 [1937]:146；1980 本的數目跟 1937 的原本稍有出入）。據我的分析，傳統文部裡有 38 條韻文，其中下面討論的《大雅·鳧鷖》第五章是惟一的 **-in* 和 **-un* 合韻的例子。

的「聞」字了。

這個例子提醒我們，經書裡出現的字不是周朝的字，也不一定能代表周朝的語音系統。就是《說文》裡的字很可能受了《詩經》時代以後的語音變化的影響。

有的時候，圓唇元音假設也可以幫助我們研究校勘學的問題。比方說，《齊風·猗嗟》第三章(106.3)有六個韻字：

(25) 《齊風·猗嗟》第三章(106.3)：

變 [luán] < ljwenX (獮) < *b-rjon?
婉 wǎn < ?jwonX (阮) < *?jon?
選 [xuǎn] < sjwenH (線) < *s(k)jons
貫 guàn < kwanH (翰) < *kons
反 fǎn < pjonX (阮) < *pjan?
亂 luàn < lwanH (翰) < *C-rons

按照清代學者的韻部，這六個韻字都屬於元部。不過，按照圓唇元音假設，元部裡要分出圓唇的 *-on 和展唇的 *-an 來。這六個韻字之中，五個要擬圓唇的 *-on，只有第五行的「反」字因為常常跟 *-an 押韻（參看《詩經》54.2A、58.6A、220.3A、223.1A、253.5B、274.1B）所以要擬展唇的 *-an。⁷

「反」*pjan? 字跟 *-on 押韻好像跟圓唇元音假設有衝突。但是，韓詩這裡沒有「反」字而有「變」字（參見《經典釋文》）。「變」字因為諧聲的關係要擬圓唇的 *-on：

(26) 變 biàn < pjenH (線三) < *prjans < *prjwans < *prjons

我推測韓詩這裡代表《詩經》的原文。這樣，我們不但可以用《詩經》來試驗音韻學的假設；也可以用音韻學的結果來研究《詩經》。

7 ‘變’字也在《齊風·甫田》裡出現，而一般認為跟‘見’字押韻。不過，有原因認為‘見’字不入韻（參看 Baxter 1992:387-388）。我認為這一章的韻文是‘婉、變’（*-on?，第一行，句中韻）和‘邶、弁’（*-ons，第二、四行）。

4. 前元音假設

第三個假設是“前元音假設”。高本漢本來說中古音的四等字有所謂的“強的元音性的介音”-i-，跟三等的“弱的輔音性的介音”-ɿ- 不一樣。他認為不但中古音有這兩個介音，上古音也有：

- (27) III 彥 yàn < ngjenH (線三)；高本漢 nglän- < *nglan，李 *ngjianh
IV 硯 yàn < ngenH (霰)；高 ngien- < *ngian，李 *ngianh

但是高本漢的四等介音很可疑。它在中古音裡沒有辨義作用；而且，《切韻》裡四等韻母的分布跟一等韻母的分布一樣：就是說，四等韻母之前能出現的聲母和一等韻母之前能出現的聲母完全一樣。黃侃早就注意到這一點，所以他說一等韻和四等韻是“古本韻”。這樣，好像最好是說《切韻》時代的四等韻母根本沒有前介音，而有前的主要元音 -e-。

如果中古音沒有高本漢的“強的元音性的介音”-i-，那他的上古音裡的介音 *-i- 也就更可疑了。“前元音假設”的主要內容是說，上古音沒有這個介音；中古音的四等韻母是來自上古音裡有前元音的韻母：

- (28) 肩 jiān < ken (先) < *ken (高 kien < *kian，李 *kian)
堅 jiān < ken (先) < *kin (高 kien < *kien，李 *kin)

這樣，如果一個傳統的韻部裡有一等韻母和四等韻母的區別，要擬測兩個不同的主要元音。例如元部又有一等的寒韻，又有四等的先韻，所以元部裡至少要擬央元音的 *-an 和前元音的 *-en：

- (29) I 乾 gān < kan (寒) < *kan (高 kân < *kân，李 *kan)
IV 肩 jiān < ken (先) < *ken (高 kien < *kian，李 *kian)

這樣擬元部可以解決上古音的一些棘手的問題。例如元部有三個不同的三等韻母：

- (30) 飯 fàn < bjonH (願) < *bjans (高 *b'ɿwan, 李 *bjanh)
 弁 biàn < bjenH (線三) < *brjans < *brjwans < *brjons (高 *b'ɿan, 李 *bjianh)
 便 biàn < bjienH (線四) < *bjens (高 *b'ɿan, 李 *bjianh)

李方桂先生的上古音裡只有兩個韻母 *-jan 和 *-jian 相當於中古音的這三個韻母。這樣他只好把重紐三等的「弁」和重紐四等的「便」寫成一樣。如果承認元部裡又有央元音又有前元音，就可以解決這個問題。從中古音的觀點來看，元部的開口部分是這樣的：

- I -an (寒) < *-an (李 *-an) 乾 gān < kan < *kan
 II -æn (刪) < *-ran (李 *-ran) 姦 jiān < kæn < *kran
 -ɛn (山) < *-ren (李 *-rian) 間 jiān < kɛn < *kren
 III -jon (元) < *-jan (李 *-jan) 建 jiàn < kjonH < *kjans
 -jen (仙三) < *-rjan, *-rjen (李 *-jian) 辯 biàn < bjenX < *brjen?
 -jien (仙四) < *-jen (李 *-jian) 便 biàn < bjienH < *bjens
 IV -en (先) < *-en (李 *-ian) 辯 biàn < benX < *ben?

從上古音的觀點來看，元部的開口韻母相當於清代學者的陽部和耕部（以牙喉音聲母的字為代表）：

- | | | |
|------|--------------------|----------------------|
| (31) | 元部 (*-an) | 陽部 (*-ang) |
| | *-an > -an (寒) | *-ang > -ang (唐) |
| | *-ran > -æn (刪) | *-rang > -æng (庚二) |
| | *-jan > -jon (元) | *-jang > -jang (陽) |
| | *-rjan > -jen (仙三) | *-rjang > -jæng (庚三) |
| | 元部 (*-en) | 耕部 (*-eng) |
| | *-en > -en (先) | *-eng > -eng (青) |
| | *-ren > -ɛn (山) | *-reng > -eng (耕) |
| | *-jen > -jien (仙四) | *-jeng > -jieng (清) |
| | *-rjen > -jen (仙三) | *-rjeng > -jæng (庚三) |

如此，元部的開口部分可以分成一個像陽部的央元音韻部 *-an 和一個像耕部的前元音韻部 *-en。

當然，這樣擬測元部跟清代學者的分析有衝突。如果想避免這樣的衝突，可以用李方桂先生的複合元音 *ia 來代替前元音 *e；可以說，到了《詩經》的時候，原來的前元音已經變成複合元音了。但是根據概律論的分析，我認為元部和類似的韻部不但可以分，而且必須分，要不然沒法子解釋為甚麼前元音的字跟其他的字押韻押得那麼少。⁸

比方說，《詩經》韻字中收 *-en 的字比收 *-an 或 *-on 的字少得多，但是 *-en 字很少跟 *-an 或 *-on 押韻，而常常跟別的 *-en 字押韻。例如《齊風·還》第一章 (97.1A) 有四等字跟重紐四等字相押；《小雅·頍弁》第三章 (217.3B) 有兩個四等字相押；《魯頌·有駟》第三章 (298.3A) 有兩個四等字相押。唯一的可以確定為例外的是《鄘風·氓》第六章 (58.6A) 有一個前元音的 *-en 跟 *-an 押韻。《氓》也有圓唇元音的 *-on 跟 *-an 相押的例子。這一篇也有文學方面的獨特性，可能寫得相當晚。

5. 清塞音韻尾假設

最後說清塞音韻尾假設。上古音有濁塞音韻尾，這本來是高本漢的說法。在《分析字典》裡 (Karlgren 1923)，他指出，有的陰聲字跟入聲字有諧聲關係。他認為這種陰聲字本來有濁塞音韻尾，只是這些濁塞音韻尾到了《切韻》的時候已經消失了或者元音化了，只保留了清塞音韻尾。（他想到這個假設可能是因為瑞典語的方言有類似的現象。）

比方說，《分析字典》裡說下面的陰聲字有濁塞音韻尾 *-g（括弧裡有高本漢十幾年以後的擬音和李方桂的擬音）：

8 據分析，元部前元音的字 (*-en) 和非前元音的字 (*-an 和 *-on) 合用的例子會偶然那麼少的概律不超過 .000002 (Baxter 1992:375-377)。

- (32) 惡 wù < ʔuH (暮) < *ʔaks (高 *.âg, 李 *.agh)
 又讀 è < ʔak (鐸) < *ʔak (高 *.āk, 李 *.ak)
- 意 yì < ʔiH (志) < *ʔjiks (高 *.jæg, 李 *.jægh)
 憶 yì < ʔik (職) < *ʔjik (高 *.jæk, 李 *.jæk)

高本漢寫《分析字典》的時候，他判斷哪些字有濁塞音韻尾是根據諧聲字，他沒有考慮到清代學者的韻部。例如「惡」(wù)字屬於傳統的魚部；但是「魚」字本身因為好像跟入聲沒有甚麼關係，所以他沒有說「魚」字有濁塞音韻尾。又如「意」字屬於傳統的之部，但是他沒有說「之」字有濁塞音韻尾。這樣，在《分析字典》裡他把魚部跟之部都分成兩部分：一部分跟入聲字有關係，他擬測了濁塞音韻尾；另一部分跟入聲沒有特別的關係，他沒有擬測濁塞音韻尾。

後來高本漢改變了主意了，說所有的之部字都有濁塞音韻尾 *-g。但是魚部他一直認為只有一部分字有濁塞音韻尾，其他的是開音節：

- (33) 之 zhī < tsi (之) < *tji (高 *tjæg, 李 *tjæg)
 魚 yú < ngjo (魚) < *ngja (高 *ngjo, 李 *ngjagx)

我認為高本漢早期在《分析字典》裡的說法是比較可信的。像「惡」、「意」之類的陰聲字跟入聲字有直接的，明顯的關係，它們有塞音韻尾是不可否認的。（塞音韻尾是不是濁的是另外一個問題。）可是像「魚」、「之」之類字的情形則不一樣。這一類的字很少跟入聲字有接觸，沒有足夠的理由說它們有濁塞音韻尾。那麼，我認為中古音的陰聲字只有一部分跟入聲有關係；其他的陰聲字在上古音裡是開音節。

董同龢早就指出，《詩經》裡有高本漢的開音節跟閉音節相押的例子(1948)。為甚麼會有這種現象呢？有幾種可能：

1. 在《詩經》時代（或者在一部分方言裡）上古音收尾的 *-ks 很可能已經變成簡單的 *-s 了，所以原來的 *-aks 和原來的 *-as 可以相押。

2. 入聲字跟上聲字押韻可能代表韻尾 *-k 跟上聲的喉塞音 *-ʔ 押韻的情況，例如《大雅·桑柔》第十二章 (257.12) 有如下的韻字：

(34) 《大雅·桑柔》第十二章 (257.12)：

谷 gǔ < kuwk (屋) < *kok (高 *kuk , 李 *kuk)

穀 gǔ < kuwk (屋) < *kok (高 *kuk , 李 *kuk)

垢 [goǔ] < kuwX (厚) < *k(r)oʔ (高 *ku , 李 *kugx)

偶然有這種事情是不足為奇的。

3. 有的例外韻文可能是方言的現象，或者時間前後的問題，或者有不規則的變化。比方說，「來」字的情形是相當獨特的，它大概經過了一種不規則的變化。「來」字又跟平聲字押韻，又跟去聲字押韻，又跟入聲字押韻。入聲的「麥」字從「來」字得聲，兩個字也是同義字。「來」字要擬塞音韻尾是沒有問題的。不過，之部的其他的平聲字沒有這種現象。我推測「來」字原來有 *-k 韻尾，後來這個 *-k 不知道因為甚麼不規則的變化就消失了。可能是重音的問題。有意思的是，「來」字跟平聲字押韻多半在《國風》裡；「來」字跟入聲字押韻多半在《小雅》或者《大雅》裡。

4. 還有一個更基本的問題。我們判斷《詩經》的哪些字是陰聲字，哪些字是入聲字，只好依靠比《詩經》本身晚得多的資料，像《切韻》、《經典釋文》等。我們能看到的《詩經》不可能百分之百地保留它原來的面貌。

總而言之，我認為中古音的一部分陰聲字在上古音裡有塞音韻尾。至於是不是濁塞音，我覺得是次要的問題，可是清塞音韻尾在 *-s 之前消失好像是比較可信的。

有的歐洲語言（像英語和瑞典語）的語尾確實有清濁的區別，但連歐洲語言也常常失掉濁塞音語尾（像德語、俄語等）。歐洲語言的歷史上出現濁塞音語尾多半是因為它們是多音節性的語言，失掉了最後的音節（如英語 food < 古英語 fōda）。我推測單音節性的語言裡出現濁塞音韻尾是罕見的。上古漢語有濁塞音韻尾不能說是不可能的，可是從類型學的觀點來看，好像可能性不大。

以上講的只是上古漢語的語音系統的一部分。不過我希望經過這四個假設的試驗，我們可以進一步了解古代中國的語言情況。

（本文於民國八十二年八月十九日通過刊登）

附錄：文部的分析

《詩經》 *-in 部的韻字

| | |
|------------------------------|------------------------------|
| 辰 chén < dzyin (眞) < *djɪn | 貧 pín < bin (眞) < *brjɪn |
| 晨 chén < dzyin (眞) < *djɪn | 芹 qín < gjɪn (殷) < *gjɪn |
| 塵 chén < drin (眞) < *drjɪn | 勤 qín < gjɪn (殷) < *gjɪn |
| 存 cún < dzwon (魂) < *dzɪn | 忍 rěn < nyinX (軫) < *njɪn? |
| 恩 ēn < ?on (痕) < *ʔɪn | 詵 shēn < srin (臻) < *srjɪn |
| 芬 fēn < phjun (文) < *phjɪn | 殄 tiǎn < denX (殄) < *dɪn? |
| 雰 fēn < phjun (文) < *phjɪn | 先 xiān < senH (霰) < *sɪns |
| 鰥 guān < kwen (山) < *kʷrɪn | 欣 xīn < xjɪn (殷) < *xjɪn |
| 艱 jiān < ken (山) < *krɪn | 殷 yīn < ?jɪn (殷) < *ʔjɪn |
| 巾 jīn < kin (眞) < *krjɪn | 慇 yīn < ?jɪn (殷) < *ʔjɪn |
| 近 jìn < gjɪnX (隱) < *gjɪn? | 胤 yìn < yinH (震) < *(l)jɪns |
| 瑾 jìn < ginH (震) < *grjɪns | 耘 yūn < hjun (文) < *wjɪn |
| 壺 kūn < khwonX (混) < *kʷhɪn? | 云 yūn < hjun (文) < *wjɪn |
| 門 mén < mwon (魂) < *mɪn | 員 yūn < hjun (文) < *wjɪn |
| 臺 mén < mwon (魂) < *mɪn | 雲 yūn < hjun (文) < *wjɪn |
| [底] mín < min (眞) < *mrjɪn | 隕 yǔn < hwinX (軫) < *wrjɪn? |
| 瘠 mín < min (眞) < *mrjɪn | 振 zhēn < tsyin (眞) < *tjɪn |
| 閔 mǐn < minX (軫) < *mrjɪn? | 畛 zhěn < tsyinX (軫) < *tjɪn? |

*-in 部獨韻：5.1A、40.1A、43.2A（跟 *-ij）、58.4A、93.1A、104.1A、155.1A、169.4（跟 *-ij 和 *-ij?）、182.3A（跟 *-ij）、192.12B、197.6A、197.6B、199.1A、206.1A、210.2A、222.2A（跟 *-ij）、247.6A、257.4A、261.4C、290.1B、299.1A（跟 *-ij）。

-in 部、-un 合韻：248.5A。

《詩經》 *-un 部的韻字

| | |
|----------------------------------|-------------------------------|
| 奔 bēn < pwon (魂) < *pun | 困 qūn < khwin (眞) < *khrjun |
| 川 chuān < tsyhwen (仙) < *KHjo/un | 群 qūn < gjun (文) < *gjun |
| 春 chūn < tsyhwin (眞) < *thjun | 惇 rūn < nywin (眞) < *njun |
| 鶉 chūn < dzywin (眞) < *djun | 順 shun < zywinH (震) < *sGjuns |
| 滑 chūn < zywin (眞) < *sdjun (?) | 孫 sūn < swon (魂) < *sun |
| 遯 dùn < dwonH (慁) < *luns | 飧 sūn < swon (魂) < *sun |
| 焚 fēn < bjun (文) < *bjun | 噀 tūn < thwon (魂) < *thun |
| 隳 jūn < kwin (眞) < *krjun | 聞 wén < mjun (文) < *mjun |
| 君 jūn < kjun (文) < *kjun | 問 wèn < mjunH (問) < *mjuns |
| 昆 [kūn] < kwon (魂) < *kun | 薰 xūn < xjun (文) < *xjun |
| 淪 lūn < lwin (眞) < *C-rjun | 熏 xūn < xjun (文) < *xjun |
| 輪 lūn < lwin (眞) < *C-rjun | 訓 xùn < xjunH (問) < *xjuns |
| 璊 mén < mwon (魂) < *mun | 慍 yùn < ?junH (問) < *?juns |
| 緡 mín < min (眞) < *mrjun | |

*-un 部獨韻：23.1A、24.3A、49.1A、49.2B、71.3B、82.3B、112.3A、128.3（跟 *-uj, *-on）、（183.1A、183.2A 大概不入韻）、190.1A、209.4A（跟 *-an）、237.8A、256.2A、258.5A、269.1B（跟 *-in、*-eng? 大概不入韻）。

參考書目

- 丁福保 1928-32 《說文解字詁林及補遺》。
- 王 力 1980 [1937] 〈上古韻母系統研究〉，《龍蟲並雕齋文集》80-154。
中華書局。
- 李方桂 1971 〈上古音研究〉，《清華學報》新九卷一、二期合刊，1-61。
——. 1976 〈幾個上古聲母問題〉，《總統蔣公逝世週年論文集》1143-
50。中央研究院。
- 周法高等 1974 《金文詁林》，香港中文大學。
- 梅祖麟、龔煌城 1991 〈上古音對談錄〉，《中國境內語言暨語言學》655-
709。
- 董同龢 1944, 1948 《上古音韻表稿》。
- 鄭張尚芳 n.d. 《漢語上古音系表解》。
——. 1987 〈上古韻母系統和四等、介音、聲調的發源問題〉，《溫州師院
學報（社會科學版）》第四卷，67-90。
- 龔煌城 1990 〈從漢藏語的比較看上古漢語若干聲母的擬測〉，《西藏研究論
文集》3:1-18。
- Baxter, William H. 1977. Old Chinese origins of the Middle Chinese chóngniǔ
doublets: a study using multiple character readings. [Unpublished Ph.D.
dissertation, Cornell University.]
——. 1992. *A handbook of Old Chinese phonology*. Berlin: Mouton de
Gruyter.
- Bodman, Nicholas C. 1980. Proto-Chinese and Sino-Tibetan: data towards
establishing the nature of the relationship. In Frans van Coillie and
Linda R. Waugh (eds.), *Contributions to historical linguistics: issues and
materials* (Leiden: E. J. Brill).

- Jaxontov, Sergej Evgen'evič. 1960. Fonetika kitajskogo jazyka 1 tysjačletija do
n. e. (labializovannye glasnye). *Problemy Vostokovedenija* 1960, 6:102-15.
- Karlgren, Bernhard. 1923. *Analytic dictionary of Chinese and Sino-Japanese*.
[Reprint: Taipei, Ch'eng-Wen Publishing Company.]
- Pulleyblank, E. G. 1962. The consonantal system of Old Chinese. *Asia Major* 9:
58-144, 206-65.
- _____. 1973. Some new hypotheses concerning word families in Chinese.
Journal of Chinese Linguistics 1:111-25.

唐代、宋代共同語的語法和 現代方言的語法

梅 祖 麟

康奈爾大學

現代漢語方言都有以下四種結構：（甲）處置式，（乙）“張三打死李四”這種〔施事＋動補＋受事〕結構，（丙）動補結構的兩種可能式，如“打得死”、“打不死”，（丁）體貌詞尾“了”、“過”、“著”。方言語法不同之處在於所用的虛詞不同，但基本上各大方言都有這四種以及其他的結構。

這四種結構上古、早期中古都沒有，於是需要解釋何以現代方言都會不約而同地產生這四種結構。本文認為這些結構最初發生於以長安為標準的唐代北方方言。當北方方言在晚唐宋初變成全國的共同語，這四種結構也散播到其他方言。

文章重點在解釋何以閩語沒有一個可以出現於動賓之間的完成貌詞尾。筆者認為狀態補語是完成貌詞尾的前身。閩語沒有〔動＋狀態補語＋賓〕這樣的結構，所以也沒有〔動＋完成貌詞尾＋賓〕。

一．概 說

首先想談一下為什麼要寫這篇文章，為什麼會從研究方言語法的角度想到唐宋時代共同語的語法這個觀念。¹

第一，漢語語法史是四十年代才興起的一門學問，很多方面需要向漢語音韻史借鏡。從高本漢開始，音韻史和方言學結合在一起研究，以致成果遠遠超過清

1 本文寫作期間受蔣經國基金會、法國東亞語言研究所的資助。若干想法1989年跟史語所二組、清華大學語言研究所的同行討論過，最近又在東亞語言研究所繼續討論。楊秀芳、林英津、魏培泉三位給我很多寶貴的意見。在此一併表示衷心的感謝。

儒。歷史語法和方言語法結合在一起研究，也是早晚要走的一條路。

另一方面，方言音韻的研究，一直是拿《切韻》音系作為基點；《方言調查字表》就是按照《切韻》音系排列的。把各地方言的音系放在《切韻》音系框架中，歷時演變一目瞭然。語法史中缺少一個和《切韻》音系在音韻史中地位相當的概念，以致描寫方言語法往往只著重某個方言的特殊語法，跟普通話相同的就一筆帶過。我想，無論是研究漢語語法史還是方言語法都需要一個類似《切韻》音系的概念，而這個概念就是唐宋時代共同語的語法。

第二，翻檢王力《漢語史稿》（中）（1958）、太田辰夫《中國語歷史文法》（日文本，1958），就會發現不少現代漢語常用的結構都是晚唐或北宋興起的，例如：（甲）處置式：“莫把杭州刺史欺”（白居易《載醉客》），（乙）“張三打死李四”這種〔施事＋動補＋受事〕結構，其中動補結構²是使成複合動詞，如“打死”、“吹散”、“鉤破”等，（丙）“打得死”、“打不死”這種動補結構的可能式。唐代還有“打未死”這種表示否定的實現式，相當於現代漢語的“沒打死”（梅祖麟 1981:74），（丁）體貌詞尾“了”“過”“著”。³

一般說來，各地方言都有（甲）－（丁）四項，但用的虛詞可能不同。例如袁家驊先生（1960:14）曾經指出：“北京人說‘吃了飯了’，蘇州人說‘吃仔飯哉’，廣州人說‘食咗飯咯’”。結構是：〔動詞＋完成貌詞尾＋賓語＋語助詞〕。三個方言用同樣的結構，所用的虛詞不同。完成貌詞尾用“了”“仔”“咗”；表示新情況的語助詞用“了”“哉”“咯”。其他（甲）（乙）（丙）三項情況類似，這裡不一一舉例說明。下一步的問題是這些各地方言中的新興語法結構是怎麼來的？我想，不見得是各個方言中個別地獨立發展出來的；大概是在唐宋時代的京師語言中先興起，然後這些結構，甚至於連帶著虛詞，再散播到各地的方言中去的。

第三，趙元任先生是漢語方言學的創始者，但他對於方言語法的看法跟我們

2 本文“動補結構”是狹義的用法，相當於太田先生（1987:196）的“使成複合動詞、王力先生（1958:403）的“使成式”。

3 羅杰瑞（Norman 1988:123, 131）已經指出（甲）（丁）兩類是新興的結構。

不同。趙先生說(1980:8):「在文法方面,中國各地方言最有統一性。除去一些小的分歧:像吳語粵語的間接賓語放在直接賓語之前,而國語(跟英語一樣)正好相反,還有南方的能性補語(potential complements)的否定次序略有不同等等。另外再除去一些詞尾跟語助詞的不同,其實各方言之間還可以找出相當接近的對應。咱們可以說,中國話其實只有一個文法。即使把文言也算在內,它的最大的特點只在單音節詞多,複詞少,還有表示地方,來源的介詞組可以放在主要動詞之後,而不放在前面。除此以外,實質上,其文法結構不僅跟北平話一致,跟任何方言都一致。因此把北平話的文法稱為中國語的文法,比把北平話叫中國話更有理。」這段話有一部份我們贊成,另有一部份值得商榷。

贊成的部份是,漢語若干方言的若干語法現象是結構相同,只是所用的虛詞不同,例如上面說過的北京人說“吃了飯了”,蘇州人“吃仔飯哉”等等。趙先生所說的“在文法上,中國各地方言最有統一性”就是指這種現象。

值得商榷的有兩點。第一點是趙先生所說的:“即使把文言也算在內……,實質上,其文法結構不僅跟北平話一致,跟任何方言都一致”。按照一般的看法,文言是以先秦典籍為典範的一種書面語言;其實各時期的文言都有當時的口語成份滲雜在內。趙先生認為文言的文法結構跟北平話一致,這似乎是說從先秦到現在,漢語的語法一直保持不變。

上面所說的四種語法結構都是上古沒有的,也是文言不常用的:(甲)處置式,(乙)由“打死”、“吹散”、“鉤破”這種使成複合動詞構成的〔施+動詞、結果補語+受〕句式,(丙)動補結構的可能式和否定實現式,(丁)體貌詞尾“了”、“著”、“過”。

說得更具體一些,一直到晚唐,漢語沒有“著”、“了”、“過”這種表示體貌(aspect)的動詞詞尾。換句話說,動詞和賓語之間不能插入體貌詞尾。“吃了飯了”唐末要說“喫鉢了也”;“吃了飯就走了”唐末要說“喫鉢了便去”或者“食飯已乃去”。此外文言一般不用“了”、“過”、“著”。明顯的例子是趙良嗣《燕雲奉使錄》(1120, 1123年)白話成份頗高,裡面用“了”、“著”。宋代李燾《續資治通鑑長編》和楊仲良《續資治通鑑長編紀事本末》據此把白話

改作文言，“了”、“著”都取消了。例如《奉使錄》“屯著人馬，專地等候回使相報”、“不先下了燕京”，《紀事本末》分別改作“時屯兵候使回”、“若不得燕京”（參看梅祖麟 1980:46-49）。

第二點值得商榷的是趙先生所說的“在文法上，中國各地方言最有統一性”。上面看到北京話、蘇州話、廣州話都有完成貌詞尾。但是閩語卻不一樣。

北京話說“我吃了”、“我吃了飯了”，台灣閩南話說“我食飽”，是用動補結構來表示。北京話說“他正在睡著”，閩南話說“伊 teʔ. 睏”。北京話說“我去過”，閩南話說“我 bat. 去”，也說“我去 (k'iʔ) 過 (kueʔ)”，“我 bat. 去過”。閩南話不但不用完成貌詞尾“了”，也不用其他的完成貌詞尾。所以袁家驊(1960:277)說：“總的看來，閩南話的‘體’，基本上沒有採用‘動詞＋詞尾’這個形式，而是用動詞前加狀語或動詞後加補語的方式表示的”（參看鄭良偉 1990）。

本文主要目的之一是想解釋為什麼閩語沒有產生完成貌詞尾，為什麼官話、吳、粵等其他方言會產生完成貌詞尾。此外也想說明，閩語雖然沒有完成貌詞尾，也少用其他體貌詞尾，它的體貌體系還是屬於晚唐的格局。

把上面種種想法集在一起，本文打算提出一套假設：

(1) (甲) 中國現代各地方言的語法結構基本上是一致的，不同之處在於各方言用自己的虛詞。換句話說，“結構相同，虛詞不同”是漢語方言在語法方面的特徵。

(乙) 漢語方言之所以結構基本上一致，是因為它們都用近代——也就是唐宋時期興起的——語法系統。其中又可以分成兩個時間層次。唐末以前已經形成的結構，每個大方言都受到影響。唐代以後才興起的結構，影響到閩語以外的方言，只有一小部份影響到閩語。

(丙) (i) 隋唐統一中國。以長安、洛陽為標準的早期官話，至晚在晚唐變成全國的共同語。以後宋元首都（汴梁、大都）都在北方，還是用北方官話作為共同語。

- (ii) 以“京師語音”為標準的共同語興起後，非官話地區開始流行雙方言制，同時又由移民帶來官話的影響，以致各種方言中本來分歧的語法向共同語看齊。

上面提出來的幾個論點，不是一兩篇文章可以說得清楚的。本文主要是想拿（丁）項體貌系統中的一部份來做個實驗，看看是否各地方言都有表示完成貌的詞尾，是否都有表示新情況的語助詞，此外還要注意各地方言中這兩種虛詞在句子裡的配搭和分佈。目的是為了解說明就這兩種虛詞來看，各地方言的體貌系統都是晚唐以後的格局。其中的關鍵問題是為什麼北方官話在唐宋之際產生完成貌詞尾，而閩語一直沒有產生完成貌詞尾。

進入正文以前還想做三件事。第一，說明（乙）項“張三打死李四”這種結構是唐代興起的。第二，說明“穿破”、“穿未破”、“穿得破”、“穿不破”這四種動補結構的實現式、可能式是中唐以後興起的，而且閩南話的“穿有破”、“穿無破”、“穿 e² 破”、“穿 be² 破”是跟晚唐的四式結構相同，虛詞不同。第三，從文獻方面說明至晚在晚唐，以長安洛陽為標準的早期北方官話，已經成為全國的共同語。證據之一是在泉州編寫的《祖堂集》，用的不是閩語而是早期北方官話。由於篇幅的限制，以上三點都只能簡略地討論。

第一，用“V”代表及物動詞，“V死”是動補結構，“V殺”是由兩個及物動詞並立而組成的複合動詞，不是動補結構。從先秦到南北朝末年，基本上只有兩種句式：〔受事+V死〕和〔施事+V殺+受事〕，例如（梅祖麟，待刊；1990:200）：

(2) 壓殺：岸崩，盡壓殺臥者，少君獨得脫，不死。（史記，1973）

壓死：暮寒臥炭下，百餘人炭崩盡壓死。廣國獨得脫。（論衡·吉驗）

燒殺：火從藏中出，燒殺吏士數百人（論衡·命義）

燒死：見巢難盡墮地，有三戴殼燒死。（漢書·五行志）

兩漢，魏晉還沒有〔施事＋V死＋受事〕這種句式。當時可以說“大貓壓殺小貓”，“小貓壓死（矣）”，但是不能說“大貓壓死小貓”。太田辰夫（1987:197）指出最後一種句式要到唐代才出現。

(3) 律師律師，撲死佛子耶？（開天傳信記，太平廣記 92 卷引）| 主人欲打死之。（廣古今五行記，廣記 91 卷引）| 是鄰家老黃狗，乃打死之（劉義慶《幽明錄》，廣記 438 卷引，但《古小說鈎沈》作“殺”）

《幽明錄》一例有異文，而且是南北朝的孤例。因此，太田先生認為這種句式到唐代才產生。我們贊成他的說法。

〔施事＋V死＋受事〕這種句式，各地方言都有。例如“張三打死李四”，閩語說“張三拍死李四”、吳語說“張三打煞（脫）李四”。這種句子都是晚唐以後興起的。

第二，“穿得破”、“穿不破”這種動補結構的可能式，太田辰夫先生（1987:219-220）已曾舉例說明它們在晚唐產生，這裡不贅。此外晚唐表示否定的實現式是“V未R”（梅祖麟 1981:74），例如“眠未著”（杜荀鶴〈宿村舍〉，《全唐詩》7982），“聽未足”（方干〈郭中山居〉，7478），“行未到”（方干〈題贈李校書〉，7489），“聽未慣”（韓愈〈鄭群贈簞〉，3776），相當於現代漢語的“沒睡著”，“沒聽夠”、“沒走到”、“沒聽慣”。據此，實現式和可能式在晚唐的四種形式是：

| (4) 實現式 | | 可能式 | |
|---------|-------|-------|-------|
| V R | V 未 R | V 得 R | V 不 R |
| 穿破 | 穿未破 | 穿得破 | 穿不破 |

現代各地方言都有這四種形式，但是同中有異。例如官話和吳語的“沒 V R”詞序和“V未R”不同，粵語除了“V m R”（相當於“V不R”）以外，還有“V m 得 R”（張洪年 1972:120）。閩語比較特殊，例如閩南話就有八種形式：

| (5) 實現式 | | 可能式 | |
|---------|-----|--------------------|---------------------|
| 穿有破 | 穿無破 | 穿 e ² 破 | 穿 be ² 破 |
| 有穿破 | 無穿破 | e ² 穿破 | be ² 穿破 |

按照羅杰瑞 (Norman 1989:337) 的說法，〔e²〕的本字是濁母的“解”字，中古音 ɣai，〔be²〕是否定詞〔m〕和“解”的合音詞，然後再聲母非鼻音化。閩語和晚唐相比，可見也是結構相同，虛詞不同；其他幾個形式雖然用法不同，但在結構上只是顛倒詞序：

| (6) 實現式 | | 可能式 | |
|---------|-----|--------------------|---------------------|
| 晚唐：穿破 | 穿未破 | 穿得破 | 穿不破 |
| 閩南：穿有破 | 穿無破 | 穿 e ² 破 | 穿 be ² 破 |

總起來說，現代各地方言裡動補結構的實現式和可能式，都是以例(4)所列的晚唐四式為基礎而發展出來的，所以都是晚唐以後的格局。

第三，從文獻方面可以看到唐代的北方話至晚在唐末已成為全國的共同語。

(i) 《祖堂集》是最早的一部禪宗史，在泉州編成，序寫在南唐保大十年（952年）。書中所記主要是福州雪峰義存禪師（822-908）一系在福州、泉州、漳州的歷史，所記錄的其他宗派大多活躍於湖南、湖北、江西、廣東、浙江。這部在泉州編成，主要紀錄雪峰義存一系在福建傳播的禪宗史，語法詞彙和八九世紀在西北邊陲寫成的敦煌變文大同小異。《祖堂集》的語法和閩南話確實有很多相像的地方；那是因為唐末北方官話的成份還保存在閩語裡，而不是《祖堂集》反映當時閩語獨特的語法（見下）。(ii) 北宋沈括（1031-1095）錢塘（杭州）人，所著《乙卯入國奏請》（1075）是很通順的，用北方話寫的語體文。(iii) 《朱子語類》是南宋最有代表性的白話資料。朱熹（1130-1200）安徽婺源人（今江西），在世最後三十年集徒講學，學生各自寫下語錄，匯集在一起，分類纂編成《朱子語類》。朱子門人來自江南各地，包括浙江的永嘉、嘉興、天台，福建的邵武、建陽、莆田、泉州，江西的臨川，廣東的潮州，安徽的宣城。《朱子語類》用的是官話，偶而有些江南方言的語法成份滲雜在內（參看梅祖麟 1988:199）。

我們說《祖堂集》、《朱子語類》、《乙卯入國奏請》用官話方言，是基於兩層考慮。第一，這些白話文獻我們看得懂。現在有些用方言寫的作品，如香港報章上用粵語寫的笑話故事，用吳語寫的小說《海上列花傳》、《九尾龜》，用閩語寫的《荔鏡記戲文》等等。碰到這類作品，只懂得官話方言的讀者讀起來非常困難，其難懂的程度超過《祖堂集》、《朱子語類》。這就說明，一般人能懂的白話文獻只限於以官話方言為基礎的。

第二，羅杰瑞(Norman 1988:182; 1971:23-24)曾經提出辨別南北方言的幾個標準，其中三個是用虛詞：

(7) (甲) 否定詞：最簡單的否定詞，北方話用雙唇塞音聲母的“不”或同源詞。南方方言用(雙唇)鼻音聲母，如福州 η^2 ，廈門 m^2 ，梅縣 ϵm ，廣州 ϵm 唔(按：蘇州話的 $f\gamma^?$ 、溫州話的 fu 可能是例外)。

(乙) 第三身人稱代詞：北方話用舌尖音聲母的“他”，南方話用舌根音聲母或零聲母，如福州、廈門、上海“伊”，梅縣“其”，廣州 $k'o\gamma$ “渠”。

(丙) 規定詞：北方話用舌尖音聲母的“的”或同源詞，南方話用舌根音聲母或零聲母，如福州“其” ϵ_i 、 ϵki 、廈門 ϵe 、梅縣、廣州“嘅” $k\epsilon^2$ 。

《祖堂集》、《乙卯入國奏請》、《朱子語類》用“不”、“他”、“底”。按照這三個標準，《祖堂集》等的方言基礎是北方話。

《祖堂集》的情形需要補充一下。第三身人稱代詞主要用“他”，也用“伊”。最簡單的否定詞用“不”。此外閩語還有兩個特殊的虛詞。(i) 方位介詞“著”。北方話說“坐在椅子上”，廈門話說“坐 ti^2 椅頂”，福州話說“坐 $ty\alpha^2$ 椅懸頂”。〔 ti^2 〕、〔 $ty\alpha^2$ 〕都是“著”字(參看梅祖麟 1989)。(ii) 遠指詞“許”，如福州話 'hi ，潮州話 'hu 。台灣閩南話的 hit_2 是“許” 'hi 和“一” it_2 的合音詞。方位介詞“著”字在劉宋《世說新語》和東吳康僧會譯的《六度集經》中已經出現了(太田 1987:211)，遠指詞“許”則最早出現在

南朝的樂府（魏培泉 1990:58）。這兩個虛詞的分佈一開始就偏南。據此，閩語中的遠指詞“許”、方位介詞“著”一直可以遠溯到南朝，而且歷來也知道這兩個虛詞的寫法。如果《祖堂集》的方言基礎是閩語，第三身人稱代詞應該用“伊”、遠指詞用“許”、方位介詞用“著”。但事實上《祖堂集》主要用“他”、間或用“伊”；用“那”、不用“許”；主要用“在”，間或用“著”（如《祖》2.041.06; 2.008.08）。這些現象都說明《祖堂集》主要是用早期官話，偶而滲入南方話的成份。

據上所述，禪宗南宗各種宗派之間交談爭論用的可能是方言，朱門師徒論學用的也可能是他們自己的方言，但寫下來的語錄都是用早期官話。由此可知雙方言制至晚從晚唐開始已經流行。這裡所說的“雙方言制”就是南方人不但會說自己的方言，還會說北方話。另一個原因是衆所周知的一波一波的從中原地帶遷到華南的移民。上面看到否定詞、第三身人稱代詞、規定詞這些基本虛詞，南北的差別跨越閩、粵、吳、客等方言，可以想像是時間悠久，同時可以想像唐宋時期中國方言的內部分歧還是很大。但根據（1甲）的說法，現代各地方言的語法結構基本上是一致的。這是很值得注意的現象，（1丙）用共同語的興起和雙方言制的流行來做解釋。

二．近代漢語的體貌和情態

2.1 緒 言

上古，中古漢語（所謂“文言”）表示動作的時間關係，基本上只有兩個位置。一個是動詞前面，如副詞“曾、嘗、方、且、將、正、寢、已、既、未”。另一個是句末，如語助詞“矣”。此外中古還有句末的動詞“已、畢、訖、竟”，如“敘情既畢，便深自陳情”（世說·言語）、“作數曲竟，撫琴曰……”（世說·傷逝）。“敘情既畢”、“作數曲竟”這樣的句子是主謂結構；拿動賓結構“敘情”、“作數曲”作為主語，“既畢”、“竟”作為謂語。

上古、中古在謂語中表示情態(modality)的位置，基本上也只限於動詞之前，如“可、能、得、必、宜、當、須”等。如果要表示可能，只能在動詞前面加“能、可、得”。唯一的例外是從東漢一直到晚唐，還有“VO不得”，例如太田(1987:218)引的“且使妾搖手不得”(漢書·外戚傳)、“田爲王田，賣買不得”(後漢書·隗囂傳)、“太原兵敵回鶻不得”(會昌一品集)。但是唐代只有“V(O)不得”，沒有“V不得O”。宋代才出現“V不得O”，例如(太田 1987:219)：

- (8) 在古雖大惡在上，一面誅殺，亦斷不得人議論。(河南程氏遺書 12) | 若理不相關，則聚不得他(朱，3)

近代(唐宋)和上古、中古的主要差別在於：(i)產生了體貌詞尾“著”、“了”、“過”，(ii)產生了動詞後面的種種補語成份，例如晚唐已出現了“動詞+結果補語”的實現式，可能式的四個形式“V-RC”、“V未RC”，“V得RC”、“V不RC”。於是，宋代就有這樣的謂語結構：

- (9) V-X O

“-X”代表表示體貌或情態的成份。X有種種可能：(i)表示體貌的“著”、“了”、“過”，(ii)表示完成貌的結果補語，如“打死”的“死”，“穿破”的“破”，(iii)表示可能或不可能的情態中綴，如“穿得破”、“穿不破”的“得”、“不”。這樣一來，動賓之間就多了一個表示體貌或情態的成份。

我們觀察體貌、情態表現方法的發展史，主要注意三方面：(甲)X的種類；(乙)種種X出現的年代；(丙)跟動詞黏得緊不緊；如果X能嵌在V和O之間，如(8)，就算黏得緊；否則形成VOX，就算黏得不緊。從這個角度來看，上古根本沒有X。中古有，但種類不多，而且和動詞黏得不緊。近代不但X的種類繁多，而且和動詞黏得越來越緊。

唐宋之際又是一個轉折點。唐代只有詞尾“著”（太田 1987:212），沒有詞尾“過”、“了”（太田 1987:206-207, 213）。唐代的詞序是“V O 了，V P₂”。宋代“了”字挪前才產生“V 了 O，V P₂”，於是“著”、“過”、“了”三種詞尾都已具備。

現代各地方言表現體貌、情態的手段也可以從這個角度去觀察。各地方言都有“V-X O”，所以都是近代的格局。但是種種X的形成時代不同，近代又可以分成兩個層次。下面就要圍繞這些問題，拿“吃了飯了”、“吃了飯就去”這樣的句子作為實例，簡約地綜述它們的演變史，再去看各地方言是否有它們的痕跡。

2.2 完成貌詞尾的來歷及其相關問題

2.2.1 簡史

現代漢語的“吃了₁飯了₂”用兩個“了”。“了₁”是完成貌詞尾，它主要出現在兩種句子裡面。一種就是“V 了₁ O 了₂”，如“吃了飯了”。第二種是“吃了（飯）就去”，其中有兩個分句，“了₁”出現在第一個分句；這種句子的結構是“V 了₁（O），V P₂”。

“了₂”是句末語助詞，表示新情況的出現，典型的用法是“下雨了₂”、“不下雨了₂”、“來了₂”。此外就是跟“了₁”配合，形成“V 了₁ O 了₂”。如果有人問“吃了飯沒有”？用“已經吃了”回答，“吃了”的“了”是“了₁了₂”，實際說話的時候，兩個“了”融合成一個。（趙元任 1980: 133）

“吃了飯”還需要接下去說點什麼，像“吃了飯就去”，“吃了飯我們就來了”這類的話。“吃了飯了”可以打住，不需要接下去。碰到數量化賓語，情形稍微不同（參看朱德熙 1982:209; Li and Thompson 1981:270-279）。為了把問題簡單化，下面避開帶數量化賓語的句子，把重點放在“V 了₁ O 了₂”和“V 了₁（O），V P₂”這種句型中“了₁”、“了₂”的來歷。

《祖堂集》裡有兩段可以說明晚唐的情形：

- (10) 有一日齋後忽然有一僧來具威儀……師曰：“喫鉢也未”？對曰：“未喫飯”。師曰：“去庫頭覓喫飯”。其僧應喏便去庫頭。當時百丈造典座，卻自個分鉢與他供養，其僧喫飯了便去。（祖，4.37）
- (11) 師問：“僧喫鉢也未”？對曰“喫_了也”。（祖，4.16）

兩相比較，現代和晚唐的對應關係是：

- | (12) | 晚唐 | 現代 |
|------|-----------------------------|--|
| | 喫鉢了也（VO了也） | 吃了飯了（V了 ₁ O了 ₂ ） |
| | 喫飯了便去（VO了，VP ₂ ） | 吃了飯就走（了）（V了 ₁ O，VP ₂ ） |
| | 喫鉢也未 | 吃了飯沒有 |
| | 未喫 | 沒吃飯 |

《祖堂集》裡還有兩個值得注意的現象。第一，“V了O”的用例一個也沒有（曹廣順 1986:202）。此外按照曹廣順先生（1986:202，注11）的說法，唐詩、五代詞和變文裡總共只有五個用例：⁴

- (13) 幾時獻了相如賦，共向嵩山採茯苓（張喬〈贈友人〉）|將軍破了單于陣，更把兵書仔細看（沈傳師〈寄大府兄侍史〉）|林花謝了春紅，太匆匆（李煜〈烏夜啼〉）|見了師兄便入來（變，396）|唱喏走入，拜了起居，再拜走出。（變，211）

據此，“V了O”在唐代還沒有形成。《祖堂集》裡代表傳入閩地的早期官話，其中也沒有“V了O”。

第二，《祖堂集》裡“VO了也”獨自成句，可以打住。“VO了”不能獨自成句，需要再加另外一個分句才能打住。這是劉勳寧分析133條用作動詞或虛

4 曹廣順（1986:202，注11）原來引了六句。另一句引作“切怕門徒起妄情，迷了多諫斷（維摩詰經講經文）”。按：此句出現於《敦煌變文集》、521頁，我以前（1981:66）也如此引過。但下半句應在“了”後點斷。所以本文只轉引曹文的五句。

詞的“了”字所得的結果，例如：

(14)(A) V (O) 了 V P₂

其時天降白乳，入口味如甘露，食了輕建〔健〕，乃作是言……（祖，1.61） | 師游西院了歸山次，問泯典座（2.112）

(B) V (O) 了 # V P₂

仰山見了，賀一切後，向和尚說……（5.82） | 師與紫璘法師共論義次，各登坐了，法師曰……（1.118）

(C) V (O) 了也 # #

法師曰：便請立義。師曰：立義了也。法師曰：立是什麼義？（1.118）

| 師曰：何不問老僧？僧曰：問則問了也。（1.156）

A、B 兩式裡的“V (O) 了”都是不自由的，後面總有後續分句承接。A 和 B 的差別只在 B 中的“了”後有以“#”號代表的停頓。C 式則是自由的，不需要加別的成份就可以打住。

《祖堂集》裡“VO了”、“VO了也”的用例在《敦煌變文集》裡也看得，例如：

(15) (甲) 上來第一，說不念重德了也。（變，692） | 上來總是第一，明成長教示了也。（變，687）

(乙) 有於〔相〕夫人於石室比丘所，受戒了，歸來七日滿，身終也。歡喜國王出天丈〔仗〕，如法殯葬後……（變，778）

只是《變文集》中“V (O) 了也”用例不多；而且《祖堂集》有引得，《變文集》沒有；《變文集》中“V (O) 了”、“V (O) 了也”用例的分佈不容易看得很真切。

據上所述，晚唐五代昀早期官話(1)有個表示事情完成的“了”字，另有個表示新情況的出現的語助詞“也”字；(2)“V (O) 了”是不自由的，後面需要加上後續分句或其他成份才能打住；(3)“V (O) 了也”是自由的，本身就是獨立的句子，可以打住。現代漢語(1')有個完成貌詞尾“了₁”，另有個句末

語助詞“了₂”；(2’)“V了₁(O)”是不自由的，不能打住；(3’)“V了₁O了₂”(以及“V了”<“V了₁了₂”)是自由的，可以打住。從這個角度去看，現代漢語體貌系統的結構，在晚唐已具輪廓。

以後官話方言裡的發展可以分成三個階段來敘述（參看太田 1987:358-359；楊聯陞 1957:199-200, 207）。

(16) 第一階段（晚唐五代）

| | | |
|---------------------|---------|--------|
| （甲）吃飯了便去 | （乙）吃飯了也 | （丙）門開也 |
| VO了，VP ₂ | VO了也 | VP也 |

第二階段（宋元）

| | | |
|---------------------|------|-----|
| 吃了飯便去 | 吃了飯也 | 門開也 |
| V了O，VP ₂ | V了O也 | VP也 |

第三階段（元末至今）

| | | |
|---------------------|---------------------------------|------------------|
| 吃了飯就去 | 吃了 ₁ 飯了 ₂ | 門開了 ₂ |
| V了O，VP ₂ | V了 ₁ O了 ₂ | VP了 ₂ |

第一階段的特徵是“了”字出現在賓語的後面，也是在前一分句的句末。第二階段的演變是：VO了>V了O，然後“了”字虛化，從狀態補語(Phase complement)變成詞尾。第三階段的演變是句末的“也”被“了”替代，而且詞尾“了”和語助詞“了”都元音弱化變成[.lə]，以致表示完成貌的詞尾和表示新情況的語助詞在字形上、音韻上都混而為一。

2.2.2 VP也，VO了也，V了O也，V了O了

上面談到“VP也”、“VO了也”、“V了O也”等結構，現在要舉例說明它們的歷史。

VP也

從南北朝開始，用句末語助詞“也”表示新情況的出現（太田 1987:357-

358) 。

(17) 石賢者來也，一別二十餘年。(幽明錄) | 門已開也。(隋·《佛本行集經》卷 17) | 事事無成身老也。(白居易詩) | 碑動也(妖亂志，廣記 290) | 阿與，我死也(舊唐書安祿山傳) | 低聲向人道知也(馮衰詩) | 自得五陰後，忘卻也(祖，1.115) | 僧問：居此多少年也？(祖，4.86) | 師云：箭過也(祖，3.35)

請注意，這種“也”用法和上古不同。上古的“也”主要是表示判斷語氣。上面例中的“也”卻是表示新情況的出現，和上古的“矣”相當。例如“門已開也”就是《左傳》宣二年的“寢門闢矣”，現代漢語說“門已經開了₂”；“知也”就是《左傳》宣二年的“吾知所過矣”；“身老也”就是《左傳》僖十年的“今老矣”。上古句末的“矣”，按照王力主編《古代漢語》232-234 頁的說法，“總是把事物發展的現階段作新的情況告訴別人”。趙元任先生(1980:395, 134)也把現代句末“了₂”的主要用法解釋為表示新情況的出現。中古的“也”、上古的“矣”、現代的“了₂”，這三個語助詞出現地位和語法意義都一樣，我們用同樣的分析法，都認為它們是表現新情況的出現。太田先生猜想“也”的本字是“矣”或“已”，我們覺得“矣”的可能性大些。

V O 了也 > V 了 O 也 > V 了 O 了

“V(O)了”後面加“也”，就形成可以獨立成句的“V(O)了也”例如(太田 1987:357)：

(18) 道吾曰：早說了也。(祖，1.173) | 僧曰：問則問了也。(祖，1.156) | 師問：僧喫鉢也未？對云：喫鉢了也。(祖，4.16)

下一步(第二階段)“了”字挪前，“V了也”不變，“VO了也”變作“V了O也”，例如(太田 1987:357, 359)：

(19) 被百姓喚作賊臣，已撕辯了也。(〈山西軍前和議奉使錄〉《三朝北盟會編》卷 63，頁 6) | 致他死後，便是恁懣不肯推戴，故殺了他也。(〈遺

史》，《三朝北盟會編》卷83，頁8）

以上是十二世紀北宋末年的情形。

這種格局一直維持到元明之際的《老乞大》、《朴通事》（楊聯陞 1957: 200）：

(20) V了O也：馬敢喫了草也（老，59）| 揀定了馬也（朴，153）

V也：我去也（老，68）| 參兒高也，敢是半夜了（老，103）

V了也：雨晴了也（朴，239）| 駝馱都打了也（老，82）

《老乞大》裡面同時還有“V了O了”，“VP了₂”：

(21) V了O了：這店裡都閉了門子了。（老，90）

VP了₂：參兒高也，敢是半夜了（老，103）

明星高了，天道待明也（老，104）

最後兩句，是“了₂”、“也”互用的例。《老乞大》、《朴通事》雖然作於元末，我們現在能看到的最早的版本，卻是明代改過的。其他明代白話作品中“V了O了”更是常見，南宋《朱子語類》裡已經有“VP了₂”（太田 1987: 357）。在“VO了也>V了O也”這種演變發生的同時，“VO了，VP₂>V了O，VP₂”也在發生。這兩種演變都是“了”字挪前，其實是同一種演變。沈括《乙卯入國奏請》（1075）就有不少“V了O，VP₂”，趙良嗣《燕雲奉使錄》（1120, 1123）也有：

(22) V了O，VP₂

（甲）後來蕭禧已受了聖旨，乃改臣等爲回謝（乙卯入國奏請）| 因蕭禧已受了聖旨，乃改差臣等作回謝之意（同上）

（乙）本朝取了燕京，卻要係官錢物（〈燕雲〉，《三朝北盟會編》，卷4，頁5）| 一住半年，滯了軍期，更不遣回使。（同上，卷11，頁6）

據上所述，“VO了>V了O”這種“了”字挪前演變發生在十一、十二世紀，以致以前的“VO了也”變成“V了O也”，以前的“VO了，VP₂”變

成“V了O，VP₂”。換句話說，第二階段的絕對年代是宋元。

從這個角度來看，廣州話的“食咗飯咯”、蘇州話的“吃仔飯哉”，結構上和“吃了飯也”（V了O也）相同；完成貌詞尾在賓語之前，完成貌詞尾和句末語助詞用兩個不同的虛詞；所以都是第二階段的產物。

“了”字的虛化

另外一個演變是“了”字的虛化——從動詞變成狀態補語，再從狀態補語變成完成貌詞尾。不過應該指出，這三種形式的“了”長期共存，並不是新的形式出現以後舊的就消滅。

現在先解釋“狀態補語”這個名詞。“狀態補語”（Phase complement）是趙元任先生（1980:228-230）提出的詞類。他給“狀態補語”下的定義是“有幾個補語是表示首位動詞的動作狀態（the phase of an action），而不是動作的結果或目的”，下面又舉了幾個狀態補語的例：“著〔tʂau〕”（如“碰著”、“逮著”）、“到”（如“碰到”）、“見”（如“聽見”、“遇見”）、“完”、“過”（如“錯過”）。

現代漢語的狀態補語（PC）有兩個語法特徵。第一，能形成動補結構的可能式，如“逮得著”、“逮不著”、“碰得到”、“碰不到”等等。在這方面，狀態補語和其他結果補語一樣；“穿破”、“打死”、“折斷”等“V-RC”也能形成“穿得破”、“穿不破”等等。第二，一般的“V-RC O”可以拆開來說，例如“穿破鞋子”是“穿鞋子而鞋子破了”，“打死張三”是“打張三而張三死了”。但是“V-PC O”卻不能這樣拆開來說：“逮著耗子”不等於“逮耗子而*耗子著了”，“打完網球”不等於“打網球而網球完了”。

回來看“了”字在唐宋時的詞類、“了”字用作動詞有李後主的名句為證：“春花秋月幾時了”。《敦煌變文集》中常見“動（賓）+副+了”的結構，如“拜舞既了”（305）、“升座已了”（460）、“地上築境（墳）猶未了”（105），前面的副詞說明“了”字用作動詞。北宋“VO了”的“了”挪前以後，“了”字仍舊用作動詞，《乙卯入國奏請》中例子很多，如“地界事已了，蕭琳雅已受

了撷撥文字，別無未了”，“公事已了十分，但北朝道了，便了也”。

“了”字在唐代也用作狀態補語，證據之一是“了”字出現在“V不了”、“V得了”這種動補結構的可能式，例如（梅祖麟 1981:74）：

(23) V得了：將謂嶺頭閑得了。（成彥雄〈松〉，《全唐詩》，8627）

V不了：自冬歷夏，搬運不了。（〈談賓錄〉，《廣記》，239）

另一個判斷標準是：用作狀態補語的“了”，意義上跟現代的狀態補語“完”相當。請看下面的兩個例：

(24) (甲)如是與君解了也，我聞次第處唱將來（變，521）

(乙)前解長行文已了，重宣偈誦唱將來（變，497）

(甲)(乙)分別是兩段韻文的結尾兩聯，出現地位相同，(24)(乙)上句意思是“前面解釋長行文已經完結”，其中“了”字意思是“完”。兩相比較，(24)(甲)應讀作“這麼樣給您解釋完了₂，……”，變文的“了”是現代的“完”，變文的“也”是現代的“了₂”。

《變文集》中用作狀態補語的“了”還有：

(25) (甲)我是天女，見君行孝，天遣我借君償債。今既償了，不得久住。

(變，887) | (乙)兵馬既至江頭，便須宴設兵士。軍官食了，便即渡江。(變，20) | (丙)子胥祭了，發聲大哭。(變，21)

(甲)句前文說天女“織經一句”替董永還債，“今既償了”是“今既償完”，“了”是狀態補語。至於(乙)(丙)兩句，因為“食”、“祭”是有時間幅度的動作動詞(action verb)，我們覺得這兩句的“了”也是狀態補語，意思是“完”。

至於狀態補語“了”字維持到什麼時候，請看下面一句：

(26)我寫了這個契了（老乞大，156）

十八世紀的《老乞大新釋》重寫《老乞大》，這句作（張泰源 1986:91）：

(27)我寫完這契了（老新28，前8）

兩相比較，可見元明之際的《老乞大》裡的“我寫了這個契了”，第一個“了”字應讀作狀態補語。在十四世紀的《老乞大》和十八世紀的《老乞大新釋》這段時間之間，狀態補語“了”繼續虛化而全部變成詞尾，“完”、“好”等補語就用來替代以前的狀態補語“了”字。

表示完成貌的“了”字在《敦煌變文集》中可以看到少數用例，例如（張洪年 1977:62-63）：

(28) 王陵只是不知，或若王陵知了，星夜倍程入楚救其慈母（變，44）| 迷了，菩提多諫斷（變，521）| 聖君才見了，流淚兩三行。（變，772）

用現代漢語來打個比方。我們可以說“討論完這件事情，再去討論那件事情”，可是不能說*“知道完這件事情，再去知道那件事情”。差別在於“討論”是動作動詞，“知道”是成就動詞。同樣的，(28)例中的“知”、“見”、“迷”是沒有時間幅度的成就動詞，後面的“了”不能讀作“完”義的狀態補語，只能讀作表示完成貌的詞尾。

上面說的現象可以幫助我們了解“了”字虛化的過程。在晚唐敦煌變文中，(24)例的“解”（解釋）、(25)例的“償”、“食”、“祭”都是動作動詞，緊跟在它們後面的“了”字幾乎一定是狀態補語，意思是“完”、“完成”。(28)例中成就動詞“知”、“見”、“迷”後面的“了”都是完成貌詞尾。由於這兩類動詞的語意結構參差不齊，但形式上都是單音節的及物動詞，下一步的發展就是把“知”、“見”、“迷”等後面“了”字的語法意義用在“償”、“食”、“祭”、等後面的“了”字身上，把這些動作動詞的時間幅度壓縮成一個點，促成“食了（O）”、“償了（O）”中“了”字的虛化。

2.2.3 陝北清澗話中詞尾“也”和“了也”的遺跡

劉勳寧(1985)說明他的家鄉話——陝北清澗方言——一直到現在還有表示新情況的“也”〔.ɛ〕，也有“了也”。清澗方言的動詞詞尾是“了”〔.lɿ〕，句末語助詞是〔.lɛ〕，〔.lɛ〕是“了也”的合音詞，例如：

(29) 陝北清澗話句末“也”〔.ɛ〕：你哪兒去也？|我山裡去也。|大了他自然兒解開也。（大了他自然明白了。）詞尾“了”〔.ɫ〕：吃.ɫ再算|步行.ɫ十五天。句末〔.ɛ〕：下上雨.ɛ（下起雨了）|老赤天明.ɛ（天大亮了）|衣裳早收.ɛ。

按照劉氏的說法“下上雨.ɛ”、“衣裳早收.ɛ”更先是“下上雨了也”、“衣裳早收了也”。此外劉氏還舉例說明其他北方官話方言——山西文水、河北昌黎、內蒙古包頭等——其中詞尾“了₁”和句尾“了₂”發音不同，“了₂”是“了也”的合音詞。文水、包頭也有句尾“也”。

清澗話這種現象的意義有二。第一，上面看到在福建寫成的《祖堂集》中有句末“也”、“了也”，在華北寫成的《山西軍前和議奉便錄》、《老乞大》、《朴通事》也有。下面會看到閩南話也有“也”、“了也”。清澗話在西北，閩語在東南，都有句末“也”、“了也”，參照文獻上的分佈，也是華南華北都有，可見“也”、“了也”曾經是“四方之通語”。閩南話的“也”、“了也”是唐末從中原傳入的。

第二，句尾“了₂”的來源是“了也”。楊聯陞先生(1957:200)曾經說過：“了也”頗像“了啊”合成的“啦”。太田先生(1987:360)也曾指出威妥瑪(T. Wade)的《語言自邇集》中有這樣的例：

(30) 請坐喇。（正音咀華）|走著逛拉！（兒女英雄傳，38）|你道如何啦啊（兒，10）

這樣看來，北京話在十九世紀句尾的語助詞是“啦”〔la〕，“啦”是“了也”的合音。以後元音弱化，詞尾“了₁”liao和句尾“啦”la都變成.lə，再加上用同一個方塊字“了”，於是“了₁”和“了₂”在音韻上和書面形式上都混而為一。

2.2.4 閩南話的情況

我們認為閩南話保存著唐末體貌系統的輪廓是基於兩層考慮。第一，從消極的方面看，閩南話沒有完成貌詞尾。吳語的“吃仔飯哉”，粵語的“食咗飯咯”

都用完成貌詞尾“仔”、“咗”，只是不用官話方言的“了₁”。閩南話不但不用“了₁”，其他完成貌詞尾也不用。這是各地方言中最特殊的。

第二，從積極的方面看，本文(16)所列第一階段的三種句法結構在台灣閩南話裡都保存著。

| (31) | 《祖堂集》 | 閩南話 |
|------|----------------------|-----------------------|
| (甲) | 吃飯了便去 | 飯食了後 to 去 .a |
| | VO了, VP ₂ | OV了後, VP ₂ |
| (乙) | 吃飯了也 | 飯食了 .a (飯吃完了) |
| | VO了也 | OV了也 |
| (丙) | 門開也 | 門開 .a |
| | VP也 | VP也 |

此外閩南話的“OV了”不能獨立成句。閩南話“OV了”出現時，後面不是帶著另一個“VP”，就是帶著表示新情況的“也”。這也和“了”字在《祖堂集》裡的分佈相同。

此外《祖堂集》本身就是說明唐末早期官話傳入閩地的記錄。書中所記主要是福州雪峰義存禪師一系在福州、泉州、漳州的活動。第一節已經說過《祖堂集》第三身人稱代詞主要用“他”、否定詞用“不”、規定詞用“底”、不用遠指詞“許”，難得用方位介詞“著”，本節又看到(甲)(乙)(丙)這三種句法結構都在晚唐五代的變文中出現，更可以說明在泉州編成的《祖堂集》主要是用早期官話。

第一、第二兩項放在一起正好說明閩南話是第一階段(晚唐五代)的格局。本節以閩南話為例是爲了方便，福州話基本上也是這種格局。

閩南話的“VP也”

台灣的閩南話有個句末的語助詞〔.a〕，表示新情況的出現。語助詞〔.a〕的調值隨前字調值高低和調型而有不同。〔.a〕的本字是“也”，例如：

(32) 閩南話：死 .a | 門開 .a | 罵 .a

閩南話的“死 .a”就是《舊唐書》的“我死也”，“門開 .a”就是《佛本行集經》的“門開也”（參看(17)）。

閩南話的“O V了也”

《祖堂集》裡常見“V(O)了也”，如“吃飯了也”、“早說了也”。閩南話跟它對應的有兩種句子，一種詞序完全相同，如：

(33) 閩南話“VO了也”：已經看三本了也。（已經看了三本了）

但是最常見的另一種用“OV”詞序：

(34) 閩南話“OV了也”：伊飯食了也（他飯吃完了）| 阿英衫洗了也（阿英衣服洗完了）| 伊功課寫了也（他功課寫完了）

閩南話“洗了”、“寫了”、“食了”裡的“了 liau”是個狀態補語，不是個動詞詞尾；意思是“完”。晚唐五代有些“OV了也”結構完全相同，例如：

(35) 《變文集》OV了也：“我聞”解了也，次弟處唱將來（變，529；比較(23)）

意思也跟閩南話的“OV了也”一樣；“‘我聞’這段經文解釋完了₂”。歷史上的北方官話也不乏“OV了也”的例；2.2.2 節例(20)就曾引過“駝馱都打了也”（老，82）。以上是閩南話和《變文集》、《老乞大》相像的地方。

但是閩南話的“V-PC”（“PC”代表態補語 phase complement）如“V煞”（V完），“V成”、“V了”一定要在句末，不能在句中。所以“V-PC”和光桿賓語在同一句裡出現時，賓語一定要前移（鄭良偉 1990:5；楊秀芳 1990:49），否則不合語法。

(36) 閩南語 * “V了O也”：*我食了飯也 | *阿英洗了衫也

閩南話 * “VO了也”：*我食飯了也 | *阿英洗衫了也

至於為什麼閩語選擇“OV”詞序，可能跟例(2)所說的現象有關，本文不

能詳論。晚唐五代既然有不少“升座已了”、“地上築境〔墳〕猶未了”、“拜舞既了”的句子，當時“VO”後面的“了”至少有一部份還是動詞。因此，“VO了也”這種句法的“吃飯了也”結構可能是遞進式的主謂結構〔(VO)s(了)p〕s'〔也〕p'，也可能是較簡單的(VO)s(了也)p。反正動詞“吃”和動詞“了”不在同一直接成份(immediate constituent)之中。“VO了也”、“VO了，VP₂”從中原傳入閩地後，閩語作了兩種調整。一個是賓語挪前，另一個是用“V-PC”式的“V-了”來替代原來分開的“V”和“了”。

閩南話的“(O)V-了，VP₂”和“VP₁了後，VP₂”

閩南話有兩種句子跟晚唐的“VO了，VP₂”相當。一種是：“OV-了，VP₂”。

- (37) 閩南話OV-了，VP₂：伊飯食了，to³去.a(他吃完飯就去了)|阿英塗
 髒掃了換去le²，拭眠床(阿英地掃完接著去擦床)|阿英手洗了始倚來食
 飯(阿英手洗完才靠過來吃飯)|電風修理了.liam.p'i ko².p'ai去(電扇
 修完馬上又壞掉)

以上“食了”、“掃了”、“洗了”、“修理了”都是動詞後帶狀態補語“了”。

晚唐“V(O)了，VP₂”表示做完了一件事，又做另一件事，也可以表示某一件事發生以後，又發生另一件事。表示這種承前接後關係，閩南話最常用手段是前一分句的末尾加“了後(liau au)”，例如：

- (38) 閩南話VP₁了後，VP₂：阿英衫洗了後 to³出門.a(阿英洗了衣服後就
 出門了)|伊聽見 tsit 項 tai tsi 了後，ko² k'a 覺得好笑(他聽見這項事以
 後，更加覺得好笑；董同龢 1959:748)|經過幾日了後，tu tu a si ti 九
 月初九(經過幾天以後，恰巧是在九月初九；出處同上)

“了後”前面的“VP₁”，結構沒有什麼限制；“VO”也行，“OV”也行。句末的“了後”在《祖堂集》裡已經出現：

(39) (甲) 師委得這消息，便下山來，迎接歸山，一切了後，請寺主上禪床

(祖，4.58) | (乙) 達書一切了後，藥山問…… (祖，1.177)

(乙) 句跟“受戒一切了，諮白和尚” (祖，2.50) 比較，可知句末“了後”的用法和“了”同。“ VP_1 了後， VP_2 ”是“ VP_1 了， VP_2 ”的異型。

除了(39)這種例句以外，還其他理由可以說明“了後”是第一階段（晚唐五代）的產物。第一、第二階段最大的別在於第一階段“了”字在前一分句的末尾；第二階段“了”字還屬於前一分句，但已挪到賓語之前。產生“了後”的方式是在“了”後加“後”字。設若發生在第二階段（宋元），這時的詞序是（40甲）。加上“後”字變成（40乙）：

(40) (甲) V 了 O ， VP_2 ：吃了飯便去

(乙) * V 了後 O ， VP_2 ：*吃了後飯便去

(乙) 句是個不通的句子。

其次，在敦煌變文、《祖堂集》裡跟“了後”同型的還有“了手”（變，155, 157）、“已後”（祖，5.136）、“畢手”（祖，3.31），都是在表示完成的動詞後面再加一個音節。在南北朝到唐朝這段時間，常見〔動（賓）+完成動詞， VP_2 〕這樣的複句（梅祖麟 1981:68），完成動詞包括“了、已、畢、竟、訖”，在這種句式裡的完成動詞的後面，加上“後”或“手”，就產生“畢手”、“了手”、“已後”。“了後”也是同時期，同一方式的產物。

綜上所述，晚唐“ OV 了， VP_2 ”的“了”有兩種功能，一種表示完成體貌，另一種承前接後。閩南話裡，前一種由（甲）“ OV -了， VP_2 ”中的狀態補語“了”承繼，後一種由（乙）“ VP_1 了後， VP_2 ”中的“了後”承繼。當然，（甲）也有承接功用，（乙）也表示“ VP_1 ”所指的事情業已完成。

另一方面，閩南話“ OV -了也”這一類型的句子（如“阿英衫洗了也”、“伊功課寫了也”），句末的語助詞“也”去掉，會變成不完整的句子：

(41) 閩南話 * S O V-了：* 阿英衫洗了 | * 伊功課寫了

彌補的辦法，一個是後面加“也”，恢復(34)的面目；另一個辦法是後面加個分句，結果像(37)。閩南話“O V了”不能獨立成句，這也跟《祖堂集》裡“V O了”不能獨立成句一樣。

總起來說，閩南話用“O V了(後) V P₂”、“O V了也”、“V P也”；沒有“V了O”；“O V-了”不能獨立成句。這些語法特徵都說明閩語還保存著唐體貌系統的格局。

2.2.5 “V O了>V了O”這個挪前演變是怎樣產生的？為什麼閩語沒有產生完成貌詞尾？

完成貌詞尾“了”的產生過程是近代語法史中的重要問題。正好閩語沒有完成貌詞尾。現在把這個問題的一正一反兩面放在一起看。

完成貌詞尾“了”字的產生牽涉兩個問題：一個是唐宋之際“了”字的挪前演變，另一個是“了”字挪前以後的虛化。後者在2.2.2節約略地談過。這節把注意力放在前一個問題：“V O了”的“了”是什麼條件下挪到賓語前面去的？

閩語跟這個問題的關係是這樣的。第一，上面剛說過閩語的體貌系統是承繼晚唐五代的格局。也許有人會想，閩語沒有產生完成貌詞尾是因為閩語沒有跟宋代以後、含有“V了O”的方言接觸。但是經歷貌詞尾“過”產生於宋代(太田1987:206-207)，這時已有“V了O”詞序。閩南話、福州話都用詞尾“過”。顯然閩語曾經和宋代或宋代以後的官話方言接觸，而且在用“過”方面，受到它的影響。第二，吳語、粵語跟官話方言的“V了O也”(“吃了飯也”)接觸以後，發展出來“V仔O哉”、“V咗O咯”，我們認為是爲了官話方言的結構影響。在浙南閩語和吳語接觸，在廣東潮州話和粵語接觸，所以閩語接觸到的方言，其中有完成貌詞尾的，不僅是官話。閩語不但自己沒有發展出來完成貌詞尾，跟有完成貌詞尾的方言接觸後，仍然沒有完成貌詞尾。這是怎麼回事？

我們假設唐宋之際的早期官話有某種條件Y，能導致賓語後的“了”字挪前，促成“V O了>V了O”這個演變。閩語缺少這個Y，所以雖然接觸到“V

了O”、“V仔O”、“V咗O”，仍然把這種結構拒之門外。現在就要想法找出Y這個條件。

“VO了>V了O”這個“了”字挪前演變發生在唐宋之間。晚唐五代已有零星的“V了O”的用例（見(13)），宋代才大量出現。

至於為什麼“了”字會挪前，以前有兩種說法。（甲）說是筆者（梅祖麟1981）提出的。晚唐出現“動+結果補語+賓”（V-RC O）這種結構（參看(3)）其中的“RC”（如“打死”、“穿破”、“折斷”的“死”、“破”、“斷”）完成貌的語法意義。因為在動詞和賓語之間可以插入一個表示完成貌的成份，如“死”、“破”、“斷”等結果補語，只是沒有專詞來擔任這個角色，所以當“了”挪佔據這個位置時，並不是無中生有，而是把以前用“破”、“斷”、“死”等結果語來表示的完成貌，集中在一個唯我獨尊的“了”字身上。

（乙）說認為晚唐或更早有“V卻O”、“V著[tʂau] O”、“V得O”等結構，裡面的“卻”、“著”、“得”是狀態補語（PC）。這些“V-PC O”是“V了O”的開路先鋒。“VO了”變成“V了O”其實是由於模倣作用而“了”字佔據“卻”、“得”、“著”在動賓之間的位置。主張（乙）說的學者頗多，如張洪年（1977:64-65）、曹廣順（1986:195-196）、太田辰夫（1958:226）。

（甲）（乙）兩說都肯定“VO了”中的“了”字挪前是由於模倣作用，不同之處在於模倣的對象。（甲）說認為是“V-RC O”中的RC（結果補語）；（乙）說認為是“V-PC O”中的PC（狀態補語）。最近看到閩語裡的現象，我現在覺得（乙）說是對的。

先看一些晚唐五代“V著O”、“卻O”、“V得O”的例：

- (42) V著O（王力 1958:309）：馬前逢著射雕人（杜牧詩）| 還應說著遠遊人（白居易詩）| 道著姓名人不識（同上）| 銜泥點汙琴書內，更接飛蟲打著人（杜甫詩）| 方響聞時夜已深，聲聲敲著客愁心（雍陶詩；“方響”、樂器）| 趙州曰：遇著個太伯（祖，2.41）

這一類的“著”演變到現代漢語裡，讀重音〔tʂau〕，所以是狀態補語。

(43) V 卻 O (曹廣順 1986:195-196)：見泥須避著，莫入污卻鞋（王梵志詩） | 籬邊老卻陶潛菊，江上徒逢袁紹杯（杜甫，秋盡） | 吾早年好道，常隱居四明山，從道士學卻黃老之術（宣室志） | 太宗嘗罷朝，自言：殺卻此田舍漢。（大唐新語） | 百丈收卻面前席，師便下堂（祖，4.40） | 急手出火，燒卻前頭草，後底火來，他自定（變，86） | 纜卻扁舟蓬底睡（李珣〈南鄉子〉）

“卻”本來有“退卻，掉，去”的意思。由於虛化，到晚唐五代“去、掉”這種表趨向的實詞義逐消失，像“纜卻扁舟”、“學卻黃老之術”的“卻”，所表示的幾乎只是完成貌。

(44) V 得 O：臣見陛下飲似不樂，臣與陛下邀得一箇飲流（變，221） | 今日射得半個聖人（祖，575） | 然竊於水濱拉得范相國來，定以補其尤矣。（集異記，太平廣記卷309）

晚唐五代的狀態補語還有“見”（如“聽見”、“聞見”、“遇見”）、“取”（如“接取”、“領取”、“聽取”）、“將”（如“領將”、“持將”、“收將”）（志村 1967:278-281）。這裡不一一舉例。

2.2.2 節例(23)-(25)曾經說明“了”字在晚唐五代也有狀態補語的用法。但是“了”這個狀態補語跟“卻、著、見、將”等其的狀態補語有一點不同：如果動詞帶著賓語，“了”字一定出現在賓語之後。

於是，按照張洪年、曹廣順以及我們現在的看法，“VO了>V了O”這個“了”字挪前的原因是：

(45) (甲) 晚唐五代有若干〔動+狀態補語+賓〕的結構，如“V 卻 O”、“V 得”、“V 著〔tʂau〕O”

(乙) “了”字也有一部份是狀態補語，但“了”字在晚唐五代總是處在賓語之後。

(丙) 由於模倣作用，“了”字佔據“卻”、“得”“著”在動賓之間的位

置，形成“V了O”。

以後“V了O”中的“了”再繼續虛化，變完成貌詞尾。

以前的學者也曾舉出若干詞彙中的現象，可以引申來說明“了”、“卻”之間的詞彙替換。

(i) 曹廣順先生(1986:197)指出：

(46)《續古尊宿語要，白雲端和尚語錄》中收了洞山和尚的一首詩：“天晴蓋卻屋，乘時刈卻禾，輸賦皇租，鼓腹唱謳歌”。到了《靈隱大川濟禪師語錄》，其中“卻”均被改作“了”，變為“趁晴蓋了屋，乘時刈了禾，輸納皇租了，鼓腹唱謳歌”。

(ii) “忘卻”是個熟詞在《劉知遠諸宮調》、《西遊記》、《拍案驚奇》初刻二刻裡常見（香坂順一 1967:324）。《祖堂集》裡的“忘卻什麼路”（祖，2.137）現在說“忘了什麼路”或“忘掉什麼路”。

(iii) 趙元任先生(1980:134)說過，北方官話裡的“死了”其實是“死了₁了₂”而兩個“了”合併為一，在吳語裡作“死脫哉”、閩南話裡作“死去也”，其他方言裡作“死掉也”。“死卻”在《祖堂集》裡出現(2.87)；此外還有“占卻也”(2.60)、“忘卻也”(1.115)、“污卻也”(5.104)。我們假設“死卻也”在差不多在同時出現。北方官話裡“了₁”替代“卻”，“了₂”替代“也”。其他方言裡“掉”、“脫”、“去”含有趨向義的狀態補語替代“卻”；“哉”、“了₂”替代“也”，結果就造成趙先生所說的現象。這類例子也可以說明，普通話的“了₁”有兩種。一種相當於其他方言的狀態補語；另一種在有詞尾的方言裡相當於詞尾“仔”、“咗”等，像閩語這樣沒有詞尾的方言相當於助動詞“有”（參看鄭良偉 1990:17）。

但是以上從詞彙著想的論證似乎不能令人信服。閩語正好沒有完成貌詞尾，所以想從閩語做更進一的探討。

閩南話有“動+結果補語+賓”的結構，如“拍死伊”（打死他）、“掀開鏡台要梳妝”等等。按照（甲）說，“V-R C O”是產生“V+完成貌詞尾+

O”的條件閩語有“V-R C O”，但是沒有完成貌詞尾。這就說明（甲）的說法有問題。

最值得注意的現象是閩南話有狀態補語“煞”、“成”、“了”、“完”、“去”等，是“V-P C”和賓語在同一句中出現時，賓語一定要前移（鄭良偉 1990:5；楊秀芳 1990:49）。本文的“狀態補語”鄭良偉先生叫做“時段語”（phase marker），定義略有不同。他說：「時段語在普通話裡基本是動詞詞尾，在台灣話裡卻是句尾詞。其中“起來”、“落去”、“煞”、“成”雖然也跟著動詞，但如有賓語，賓語一定要前移。沒有不前移的例子。」換句話說，台灣話沒有“V-P C O”，只有“O V-P C”，“V O P C”。下面轉引鄭良偉（1990）的例句。

(47) 台灣閩南話“O V-P C”、*“V-P C O”

（甲）V煞：(a) 代誌猶未做煞（事情還沒有做完）| (b)* 猶未做煞代誌

（乙）V成：(a) 親情一定會做成（婚事一定能談成）| (b)* 一定會當做成親事

（丙）V了：(a) 阿英衫洗了也（阿英衣服洗完了）| (b)* 阿英洗了衫也

（丁）V完：(a) 電影看完也（電影看完了）| (b)* 看完電影也

鄭良偉（1990:5）說明，老年人說台灣話不說（甲b）、（乙b）、年輕人漸漸開始用（甲b）、（乙b），是受普通話的影響。下面的例是動詞帶數量化賓語。

(48) 台灣閩南話“V O P C”、*“V-P C O”

（戊）V O 去：(a) 已經食三碗去也（已經吃掉三碗了）| (b)* 已經食去三碗也（台北地區可以說，台灣南部不可以）| (c) 比較：“上曰：汝殊未，我打卻三豎柜也”（大唐傳載；太田 1987:359 引）

（己）V O 了：(a) 已經看三本了也（已經看了三本了）| (b)* 已經看了三本也

還有個非常值得注意的現象。就一般老年人來說，台灣話的“過”可以出現在賓語的前面（庚a-癸a），也可以出現在後面（庚b-癸b）（鄭良偉 1990:6）：

(49) 台灣閩南話：“(bat₅) V 過 O” ~ “(bat₅) V O 過”

(庚) (a) 捌食過日本料理（吃過日本菜） | (b) 捌食日本料理過

(辛) (a) 來美國食過頭路（來美國做過事） | (b) 來美國食頭路過

(壬) (a) 攞嘢捌讀冊（都沒有念過書） | (b) 攞嘢捌讀冊過

(癸) (a) 猶嘢捌一日食過四頓飯（從來沒有一天吃過四頓飯） | (b) 猶嘢捌
一日食四頓飯過

經歷貌詞尾“過”產生於宋代。它的產生過程是把從空間經過的“V 過”
(49 (甲)) 用在時間場合 (49 (乙)) (太田 1987:206-207; 王力 1958:311-312) :

(50) (甲) 穿過須彌，無所罣礙（方廣大莊嚴經，12） | 蝦蟆跳過雀兒浴（韓
愈詩）

(乙) 合看過底文字也未看（朱子語類，10） | 須是入去裡面逐一看過是
幾多間架幾多窗櫺（同上）

完成貌“V 了 O”是從“V O 了”演變來的。經歷貌“V 過 O”不是從
* “V O 過”演變來的；據目前所知，“V 過 O”從來沒有經過* “V O 過”的
階段。⁵ 台灣話“(捌) V O 過”這種句法說明，在接受外來的“V 過 O”時，
閩南話還是儘量想法調整一番，改作“V O 過”，以期和原有的“O V-
P C”、“V O P C”詞序一致。

上面說的可以歸納成幾點：(i) 閩南話習用“O V-P C”。這種跟其他方言
不同的詞序大概是相當古老的，至少可以追溯到中唐，可能跟例(2)顯示的“O
V-R C”詞序有關。(ii) 由於“O V-P C”早已根深蒂固，遇到跟這種詞序不

5 劉堅先生指出，上海話說“我從來沒看見伊過”（我從來沒有看見過他）、“儂阿會看見伊過？（你有没有看見過他？）”。可能文獻中有“V O 過”詞序的例句，只是目前還沒看到。

同的外來的“V過O”、“V卻O”就把它們調整過來，變成“(bat₅)VO過”、“VO去”。⁶ (iii) 閩語既然本來沒有*“V-PCO”，也排斥外來的“V-PCO”，這個方言就沒有條件可以使表示完成的狀態補語挪前。質言之，“完”、“了”、“煞”這些閩語裡表示完成的狀態補語，在句中出現總是維持“OV完”，“OV了”、“OV煞”的詞序。(iv) 這也就是閩語沒有完成貌詞尾的原因。反過來看，唐宋早期官話有種種“V-PCO”，而且出現頻率頗高，所以促成“VO了>V了O”這種移位演變。

也許有人會說，閩南話的“有V”往往跟官話方言的“V了₁”用法一樣，例如：

- | | | |
|------|-------------|-------------------|
| (51) | 閩南話 | 普通話 |
| | (甲) 前日我有看電影 | 前天我看了電影 |
| | (乙) 你交代的代誌 | 你交代的事情，我已經做了 |
| | 我已經有做也 | (或者：我已經做了你叫我做的事情) |

官話方言的“V了₁”的功用既已由閩語“有V”滿足了，所以閩語不必產生“V+完成貌詞尾+O”。我們認為這並不是關鍵的因素。廣東話“有冇去”可以用“有去”回答，相當於普通話的“去了”。“有冇做咗？”(做了沒有？)，肯定的回答可以用“有做”或“做咗”，都跟普通話“做了”相當。廣東話“有V”跟一部份普通話的“V了₁”相當，依然產生完成貌詞尾“咗”。可見“有V”之有無，不是個關鍵的因素。

從完成貌的發展史可以得到若干關於語法演變規律的啓示：

- (甲) “了”字虛化的過程可以分成三個階段：(i) 動詞，(ii) 狀態補語，(iii) 詞尾。另一方面，我們看到這三種形式長期共存。晚唐五代這三

6 呂叔湘(1955:62)提到一個現象可能跟“V卻O”、“VO去”詞序的問題有關：「又唐人小詩有“草色青青柳色黃”一首，《老學庵筆記》(4.11)云，賈至與趙嘏集中皆有之(案《全唐詩》編入賈集)；其第三句“東風不爲吹愁去”者，放翁云，“至詩中作‘吹愁去’，嘏詩作‘吹愁卻’，‘卻’字爲是，蓋唐人語，猶云‘吹卻愁’也。”」

種形式都已具備；現在還是這樣。變化的是這三種形式的比例。

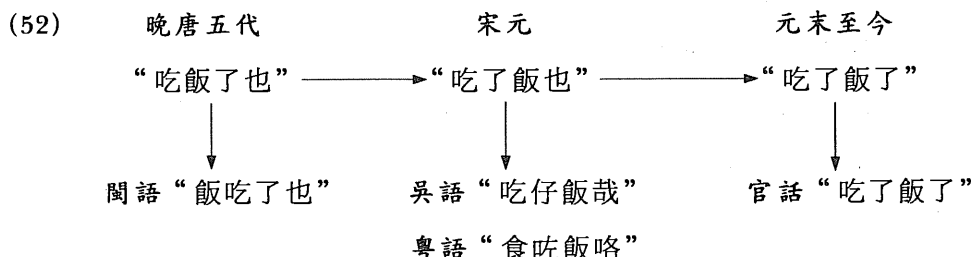
(乙) 一個漢語方言有“V-PC₁O”、“V-PC₂O”、“V-PC₃O”等等，是這個方言產生“V+完成貌詞尾+O”的必要條件。換句話說，如果一個方言有完成貌詞尾（如“了”、“仔”、“咗”），出現在動賓之間，那麼這個方言更早有狀態補語出現在同樣的位置。

(丙) 爲什麼“了”字需要挪前？爲什麼“了”字不一早就出現在動賓之間？大概是因爲遠在魏晉南北朝，“了”字基本上是個不及物動詞。相反的，唐代其他的幾個狀態補語如“卻”、“著”、“得”、“將”、“取”、“見”在先秦兩漢都是及物動詞，例如“卻”字常見的用法就有“卻之不恭、受之有愧”等等。因此“V卻”、“得”、“V見”等最初是兩個及物動詞組成的並列結構，這種複合動詞還是及物動詞，當然出現在賓語之前。等到“V-RCO”（如“打死他”）在中唐興起以後，“V卻”、“V得”、“V著”等由於模倣作用開始虛化，“卻”、“著”、“得”等從動詞變作狀態補語。同時“VO了”的“了”也虛化變成狀態補語。在這種情形下，及物／不及物之別給取消了，因而“了”字也可以挪前佔據“V-PCO”中PC的位置。

三。餘論和結論

本文說明漢語方言之所以語法結構基本上一致，是因爲它們都用近代的——也就是唐宋時代共同語的——語法系統。具體的例證拿新興的“V-XO”這種謂語作爲重點。“X”代表表示體貌或情態的成份，包括“V-RC”（“打死”）中的RC（“死”）、“V得RC”（“穿得破”），“V不RC”（“穿不破”）中的“得”、“不”，還有體貌詞尾“了”、“過”、“著”，現代的狀態補語“著〔tʂau〕”、“完”、“到”，晚唐的狀態補語“卻”、“著”、“得”等等。

在泉州編寫的《祖堂集》(952)用的是早期官話，閩語還保存著其中的體貌系統。以《祖堂集》中的“喫飯了也”為例，這種句式的演變如下：



方言之間的相互影響，我們往往只想到“拷貝”（抄錄）這一種形式。甲方言受到乙方言的影響，在這種觀念下就是甲方言把乙方言的特徵拷貝到自己身上。何大安先生的《規律與方向：變遷中的音韻結構》(1987)突破了這種“拷貝”的理論架構。一個方言有自己的音韻結構，遇到外來的影響，可以採取種種手段來適應。可以拷貝，可以調整後吸收，也可做選擇性的抗拒。

語法中有類似的現象。中原的“V卻O”、“V過O”在閩南話裡變成“VO去”、“(bat₃)VO過”代表一種調整後的吸收。閩語不產生完成貌詞尾是種抗拒——因為跟本身的語法結構不合。吳語粵語產生“吃仔飯哉”、“食咗飯咯”是受了宋元官話“吃了飯也”的結構影響，但用自己的虛詞。動補結構的可能、實現正反四式在閩語裡變成八式，其中牽涉到詞彙替代和詞序演變。這形形色色的演變類型需要做更進一步的探求。本文主題其實是“變遷中的語法結構”，副題是“方言在共同語影響下的語法演變”。當然，這只不過是初步的嘗試。

（本文於民國八十二年二月十八日通過刊登）

參考書目

張洪年 (Samuel Cheung)

1972 : 《香港粵語語法的研究》。

1977 : “Perfective particles in the Bian Wen language,” *Journal of Chinese Linguistics* 5.1.55-74.

張泰源

1986 : 《“了”字完成式的語意演變研究》，台大中文所碩士論文。

趙元任

1928 : 《現代吳語的研究》。

1980 : (丁邦新譯)《中國話的文法》。

鄭良偉

1990 : 〈台灣話和普通話的時段一時態系統〉，第一屆國際中國境內語言暨語言學研討會。

志村良治

1967 : 〈中古漢語の語法と語彙〉，牛島德次等編著《中國文化叢書》1. 言語，254-295。

朱德熙

1982 : 《語法講義》。

何大安

1987 : 《規律與方向：變遷中的音韻結構》。

香坂順一

1967 : 〈近世・近代漢語の語法と語彙〉，牛島德次等編著《中國文化叢書》1. 言語，296-356。

Li, Charles and S, Thompson

1981 : *Mandarin Chinese*.

劉勳寧

1985：〈現代漢語句尾“了”的來源〉，《方言》1985.2.128-133。

劉 堅

1985：《近代漢語讀本》。

呂叔湘

1955：《漢語語法論文集》。

梅祖麟

1980：〈三朝北盟會編裡的白話資料〉，《中國書目季刊》14.2.27-52。

1981：〈現代漢語完成貌句式和詞尾的來源〉，《語言研究》1.65-77。

1989：〈漢語方言虛詞“著”字三種用法的來源〉，《中國語言學報》3.193-214。

1990：〈唐宋處置式的來源〉，《中國語文》1990.5.191-206。

Norman, Jerry

1971：“A characterization of the Min dialects,” *Chilin* 6.1.

1988：*Chinese*.

1989：“What is a Kejia dialect?,” *Proceedings of the Second International Conference on Sinology* (Section on Linguistic and Paleography), 323-334.

潘維柱・楊天戈

1984：〈宋元時期“了”字的用法，兼談“了”字虛化的過程〉，《語言論集》2.71-90。

太田辰夫

1958：《中國語歷史文法》（日文原版，江南書院）。

1961：《「敦煌變文集」口語語彙索引》（油印本）。

1987：《中國語歷史文法》（蔣紹愚・徐昌華譯，北京大學出版社）。

董同龢

1959：〈四個閩南方言〉，《史語所集刊》30.729-1092。

梅 祖 麟

曹廣順

1986：〈祖堂集中的“底（地）”、“卻（了）”、“著”〉，《中國語文》1986.3.192-202。

王 力

1958：《漢語史稿》（中）。

1962：《古代漢語》。

魏培泉

1990：《漢魏六朝稱代詞研究》，台大中文所博士論文。

楊秀芳

1990：〈從歷史語法的觀點看閩南話的“了”及完成貌〉（待刊稿）。

楊聯陞

1957：〈老乞大朴通事裡的語法語彙〉，《史語所集刊》29.197-208。

袁家驊

1960：《漢語方言概要》。

The Grammar of T'ang-Sung *Koine* and the Grammar of Modern Chinese Dialects

Tsu-Lin Mei
Cornell University

The paper observes that almost all Chinese dialects have the following constructions: (A) the disposal construction, (B) verb + resultative complement construction, (C) the positive and negative forms of the potential complement, (D) aspect markers which can occur between the verb and the object. Since none of these constructions occur in Old Chinese or Early Middle Chinese, the question then arises why modern Chinese dialects have these and other constructions in common.

The author proposes the thesis that these constructions first emerged in the northern dialect of the T'ang capital Ch'ang-an. When that northern dialect became the *koine* during the late T'ang and early Sung, these constructions spread to other dialects. This explains why modern dialects use the same structures but often employ different grammatical particles.

The bulk of the paper tries to account for the non-occurrence of V + perfective aspect marker + O in Min dialects. The author claims that V + phase complement + O is the necessary antecedent for the development of V + perfective aspect marker + O. Since Min dialects lack the former, they also do not have the latter.

Reconstructing Scenarios of Sound Change

Matthew Y. Chen

University of California, San Diego

In reconstructing trajectories of sound change, linguists have resorted to several methods and techniques: (a) dating based on written records, (b) geographical distribution of the synchronic reflexes, and (c) logical inference from the interaction of various diachronic processes. This paper aims at reconstructing the chronological profile of a number of well known phonological changes in the history of Chinese by comparing and combining the conclusions one can draw from each of the methods used.

Central to the enterprise of historical linguistics is the reconstruction of earlier stages of a language, and the recreation of the trajectories of evolution between these successive stages. Thanks to generations of historical linguists, we now have a far better picture of the sound system of Chinese at various stages, such as Archaic Chinese, Middle Chinese, Early Mandarin etc. In contrast to diachronic syntax, where the mechanism of syntactic change occupies the center stage, in diachronic phonology the processes of sound change that link these synchronic stages have been traditionally relegated to the background.¹ The appearance of Ho (1988) has gone a long way toward

1 This disparity is reflected, for instance, in Lucas (1985), which covers publications that appeared between 1975 and 1982: it lists 45 entries under *Les changements phonétiques* compared with 363 entries under *Chinois archaïque*, *Chinois ancien*, and *Vieux Mandarin*.

redressing this imbalance. Instead of looking at historical phonology as a succession of synchronic states, Ho investigates phonological structures in motion. In a similar spirit, it is this latter aspect of historical phonology that will engage our attention in this paper.

In reconstructing past events through which languages evolve in time, the historical linguist works much like a detective: s/he sifts through written records for clues to the sequence of linguistic changes, makes logical inferences about what must have happened between the two end points, and compares his/her findings with other related languages for corroboration. One can refer to these parallel and mutually complementary methods as philological documentation, internal inference, and 'latitudinal reconstruction' respectively.

Philological documentation as a scholarly pursuit has long been enshrined in Chinese tradition (cf. Elman 1982). One notable landmark of scholarship in this tradition is aptly entitled *Dengyun yuanliu* [The origin and evolution of phonology] by Zhao Yintang (1957).² Drawing on such painstaking groundwork, one can piece together a broad chronological profile of the major sound changes that have left behind telltale signs in the various rime books and pronouncing dictionaries that can be dated with some measure of confidence. One picture that emerges is presented in Table 1 (based on Cheng 1966, with certain details omitted).

The dates in Table 1 are undoubtedly conservative, as they reflect only the more or less idealized sound systems codified in the various rime books. Thus, despite the fact the first clear evidence of the attrition of Middle Chinese consonantal endings did not come until the 11th century and, in the

2 For similar large-scale surveys of philological sources see Ying 1972 and references cited therein.

case of nasal codas, as late as the 16th century, there is good reason to think that the process had started considerably earlier. One oft-cited piece of evidence is a doggerel *Xi qi zuyu buzheng shi* [Teasing my wife for her mispronunciations] by the Tang poet Hu Zeng [胡曾] (fl. circa 860):

| | |
|---|----------|
| hu SHI (-p) que wei SHI (-k) | 呼十卻爲石 |
| huan ZHEN (-m) jiang zuo ZHEN (-n) | 喚鉞將作眞 |
| hu ran yun yu zhi | 忽然云雨至 |
| zong dao shi tian YIN (-n) (for YIN -m) | 總道是天因(陰) |

A second approach toward recreating the historical profile of phonological evolution relies on logical interpolation between two known points of reference, say between Middle Chinese and modern dialect X: given the Middle Chinese categories and their reconstructed phonetic values and given their corresponding pronunciations in any contemporary dialect, one can formulate a set of mapping relations -- or diachronic rules. The earlier attempts, notably Wang Li (1958) and Dong (1966), had generally taken the form of sound correspondences. Generative phonology made more explicit the concepts and sharpened the tools of diachronic reconstruction. Both Chen (1976a) and Hashimoto (1978, vol 2, ch.6) aimed to formulate an ordered set of coherent diachronic rules in the generative framework that should in principle mirror the historical events leading from Middle Chinese to modern day Northern Mandarin.

Table 1

| Dates | Major changes | Philological sources |
|---------|---|---|
| -907 | - Deletion of initial *ɣ - Merger of retroflex and palatal affricates and fricatives | Yunxue Canjuan |
| 907-951 | - Bilabials become labiodentals | Shouwen's 36 Initials |
| 1011-77 | - Devoicing of initial consonants - Deletion of initial glottal stop - Attrition of p,t,k endings - Split of 'ping' tone into yin/yang | Huangji Jingshi Shengyin Changhetu |
| 1270-90 | - Affrication of palatal stops | Qieyun Zhizhangtu Jieyao |
| 1324 | - Deletion of velar nasal initial - The rise of apical vowels - Low register 'shang' tone merges with 'qu' tone | Zhongyuan Yinyun |
| 1442 | - The four vowel 'grades' are replaced by -i,u,y,0- medials | Yunlüe Yitong |
| 1586 | - Final -m merges with -n | Shuwen Yinyi Biankao Silan |
| 1602 | - Deletion of labiodental nasal initial | Chongding Simawengong Dengyun Tujing |
| -1605 | - Palatalization of velar initials - The rise of r-rimes | Chengshi Moyuan |

Logical interpolation complements philological documentation sometimes in surprising ways. Take, for instance, the retroflexion of palatal initials, a process referred to as the merger of the Zhang (palatal) and Zhuang (retroflex) series of initial consonants. According to Table 1, this merger occurred very early on, during the 9th century. Deretroflexion, on the other hand, a process whereby retroflexes merge in the direction of dentals (widely

observed in non-standard Mandarin and most Southern dialects), is commonly assumed to be a late development. The truth is quite the contrary, as demonstrated by the following sets of examples:

| (1) MC | Beijing | Gloss |
|--------|---------|------------------|
| ----- | | |
| tɕiêk | ts'ê | 'to test' |
| ɕiêp | sê | 'puckery, raw' |
| ɕiêm | sên | 'forest' |
| ɕiu | sou | 'to search' |
| ----- | | |
| tɕiêt | tɕɿ | 'red' |
| ɕiêp | ɕɿ | 'ten' |
| ɕiêm | ɕên | 'deep' |
| ɕiu | ɕou | 'to guard, keep' |

ɿ = apical vowel

ê = schwa

ʈ, ʈʰ, tɕ, ɕ, dʒ, ʒ = palatals

tɕ, ɕ = retroflexes

It is obvious that under identical conditions whereas the original Middle Chinese retroflexes (Zhuang mu [莊]) undergo Deretroflexion, the secondary retroflexes derived from palatals (Zhang mu [章]) do not. This crucial *counterfeeding* order establishes the chronological anteriority of Deretroflexion before Retroflexion.

| | | | |
|-----|-------------|------------|----------------|
| (2) | 'to search' | 'to guard' | |
| | ɕiu | ɕiu | Middle Chinese |
| | siu | -- | Deretroflexion |
| | -- | ɕiu | Retroflexion |
| | sou | ʂou | other rules |

Had the sequence of events been reversed, both examples in (2) would have fused together into [sou] in modern reading. It goes without saying that this Deretroflexion of considerable time depth is a distinct process from the modern day contact-induced deretroflexion in a wide variety of non-standard Mandarin dialects spoken over a vast geographical area of China. For further details, see Chen (1976a).

Both philological documentation and logical inference instantiate what we may refer to as 'longitudinal' reconstruction. Diagonal to this is a method of 'latitudinal' reconstruction which, in essence, consists in a projection from the horizontal plane of geographical distribution (of synchronic reflexes) onto the vertical temporal axis of evolutionary path. The underlying logic is best illustrated with an example. Suppose we find the following hypothetical situation, where Mandarin dialects diverged along three major phonological changes: the devoicing of the onset (DEV), nasalization (NAS), and the loss of the -p, t, k coda (CODA). Suppose further that these diachronic changes are distributed geographically as follows:

| | | | | |
|-----|-----|------|-----|-------------|
| (3) | NAS | CODA | DEV | |
| | + | + | + | NW Mandarin |
| | | + | + | NE Mandarin |
| | | | + | SE Mandarin |

The most natural hypothesis is to assume that DEV occurred only once, say in Common Mandarin, before it split into regional dialects, rather than to suppose that DEV arose late in the history and was duplicated in each of the Mandarin groups. Similarly, it stands to reason to hypothesize that CODA took place before Northern Mandarin diverged into the Eastern and the Western branches. In other words, similar changes are best seen as monogenetic, shared innovation rather than chance convergence of independent occurrences. NAS, on the other hand, must have arisen as a localized innovation. It is, therefore, generally assumed that geographically the most widespread phonological changes are also the oldest in origin (see Bremer 1894, Bonfante 1945, Chen 1976b).

Apart from its diagnostic value for establishing relative chronology between two diachronic processes, the latitudinal method serves as a useful tool for recreating the internal profile of a particular sound change. Take the Middle Chinese initial *n. One of its reflexes in some NW Mandarin dialects (such as Tongwei and Wushan, both in Gansu) is [č]. A rule that directly links *n to [č] would represent an abrupt and phonetically implausible jump. However, once we juxtapose [č] with the modern reflexes of *n attested in other dialects (reported for the most part in Karlgren 1948, p.346ff), we begin to see an orderly path of evolution made up of smaller steps, each of which makes phonetic sense:

| | | | |
|-----|----|--------|------------------------------------|
| (4) | *n | | Middle Chinese |
| | | ↘ | |
| | | l | → Xiamen, Fuzhou, Chaozhou |
| | | ↘ | |
| | | ñ | → Jinan, Suzhou, Changsha, Meixian |
| | | | |
| | | | |
| | | n ~ nd | → Yanchuan (Shaanxi) |
| | | | |
| | | nd | → Wenshui, Xingxian (Shanxi) |
| | | | |
| | | d | → Kanon |
| | | | |
| | | t | |
| | | ↘ | |
| | | č | → Tongwei, Wushan |

MC *n shows up as [l] in many Min dialects; it also has an allophone [ñ] in diverse dialect groups (including Mandarin, Wu, Xiang and Gan). More importantly, *n has undergone partial denasalization, first as a free variant [n ~ nd] (Yanchuan), then as prenasalized stop [nd] (Wenshui, Xingxian), ultimately resulting in a voiced stop [d] (as attested in Kanon). Finally, in the NW Mandarin dialects of Tongwei and Wushan, this [d] underwent devoicing to become [t], which has a palatal affricate variant [č] (before i,y). Even though we do not have internal or documentary evidence for the intermediate forms [n -> n ~ nd -> nd -> d -> t -> č] in the rectilinear antecedents of modern day Tongwei and Wushan, the projection of the geographical plane onto the time axis gives us a clue to the internal evolution of a long chain of events that otherwise would be telescoped into an otherwise opaque, unrevealing sound law *n -> č (cf. Chen 1973).

In what follows I will focus on the rise and spread of apical vowels

among Chinese dialects as a case study of the mutual complementarity and inherent limitations of the three methods of linguistic reconstruction outlined in the preceding paragraphs.

Consider the following correspondences between MC and the modern Wu dialect of Wenzhou:

| (5) MC | Wenzhou | Gloss |
|--------|---------|--------------|
| tsi | tsɿ | 'to nourish' |
| ʃi | sɿ | 'teacher' |
| tɕi | tsɿ | 'branch' |
| fi | tsɿ | 'to know' |
| ki | tsɿ | 'self' |
| kiai | tsɿ | 'chicken' |
| xi | sɿ | 'hope' |

ɿ = apical vowel

ê = schwa

ʃ, ʈ, tɕ, ɕ, dʒ, ʒ = palatals

tʂ, ʂ = retroflexes

By logical inference alone, the simplest and most plausible diachronic picture is one in which three phonological processes formulated below as V-Shift, Sibilant and Palatal, jointly create the condition, namely a sequence of sibilants followed by a high front vowel [i], to which Apical then applies -- in one fell swoop, as it were -- to produce the modern Wenzhou reflexes. The sound changes are stated as follows:

- (6) V-Shift: $iai \rightarrow ici \rightarrow i$
 Sibilant: $palatal\ stops \rightarrow (dental)\ sibilants$
 Palatal: $velars \rightarrow palatals$
 Apical: $i \rightarrow \iota / sibilant ___ \#$

The change from /iai/ to [i] is part of a larger pattern referred to as Vowel Shift in Chen (1976a). Sibilant turns palatal stops into affricates, a processes better known as the merger of the Zhi and Zhang series [知章]. There are several ways of formulating the rule of apicalization. One is to assume that [i] in open syllables loses its dorsal features [high] and [back], with the spreading of the (remaining) coronal node from the onset to the ‘bleached’ nucleus. (cf. Lin 1989, p.55). The standard derivational history represented as (7) captures the scenario of sound changes combining the effects of the four processes in question.³

| | | | | | |
|-----|-----|-----|-----|------|----------|
| (7) | tɕi | fi | ki | kiai | MC |
| -- | -- | -- | ki | | V-Shift |
| -- | tɕi | -- | -- | | Sibilant |
| -- | -- | tɕi | tɕi | | Palatal |
| tsɿ | tsɿ | tsɿ | tsɿ | | Apical |

Given the Wenzhou data, (6,7) represent the optimal, simplest account in standard analysis. Under the assumption that the simplicity criterion can be used as a ‘tool for inferring the history of the language’ (Halle 1962:347), we are led to believe that apicalization occurred only once and fairly late, specifically after the fusion of Zhi [知] (palatal stops) and Zhang [章]

3 To simplify matters, (7) and (9) subsumes $tɕ > ts$ as part of apicalization.

(palatal affricates) series (dated at 1270-90 A.D.) and after the palatalization of the velar initials (circa 1605; see Table 1).

There is little doubt that (6,7) hides more than it reveals about the true picture of the origin and evolution of apical vowels. There are good reasons -- both documentary and comparative -- to believe that apical vowels must have appeared very early in the prehistory of Wenzhou and that apicalization must have occurred at three or more different points in time.

Let us look at apicalization from a broader cross-dialectal perspective. Table 2 (from Chen 1976b) shows the synchronic distribution of apical vowels corresponding to MC sources.

| | MC | Huangxian | Jinhua | Beijing | Wenzhou | Gloss |
|---|-------|-----------|--------|---------|---------|---------------|
| 1 | tçi | tşɿ | tsɿ | tşɿ | tsɿ | 'branch' |
| 2 | ŋi | tçi | tsɿ | tşɿ | tsɿ | 'to know' |
| 3 | ki | tçi | tçi | tçi | tsɿ | 'ground work' |
| 4 | tçiai | tçi | tsɿ | tşɿ | tsei | 'regulation' |
| 5 | ðiai | (tçi | ? | tsɿ | ? | 'stoppage' |
| 6 | kiai | tçi | tçi | tçi | tsɿ | 'chicken' |
| 7 | tçiêk | tçi | tçi? | tşɿ | tsei | 'to weave' |
| 8 | ðiêk | tçi | tçi? | tşɿ | dzei | 'straight' |
| 9 | kiêk | tçi | tçi? | tçi | tçiai | 'attack' |

Table 2

ɿ = apical vowel

ê = schwa

ŋ, ð, tç, ç, dz, ʒ = palatals

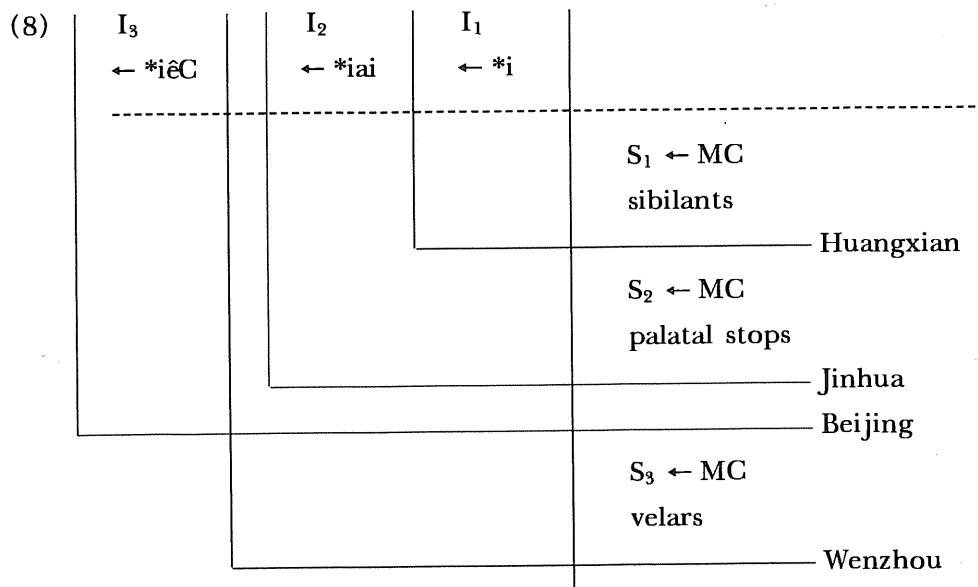
tş, ş = retroflexes

Basically, apical vowels come from /i/ in open syllables with a sibilant onset. This /i/ however, can be MC *i, or a secondary [i] from MC /-iai/ or a tertiary [i] from MC /iêC/. Likewise, the sibilant onset can be either the MC original, or a derivative of palatal stops (via Sibilant) or velars (via Palatal). Huangxian (N. Mandarin, Shangdong) exemplifies the most restricted scope of apicalization: only primary MC *i preceded by original MC sibilants become apicals. Thus only MC *tɕi becomes [tɕɿ] (= ex. 1 of Table 2).

Jinhua (a southern Wu dialect of Zhejiang) has extended its scope of apicalization somewhat, to secondary [i] (from MC *iai) and secondary sibilants (from MC palatal stops), to the exclusion of tertiary [i] (from MC *iêC) and sibilants (from MC velars). Thus, contrast MC *fi, *tɕiai > tsɿ (ex. 2,4) with *ki, tɕiêk > tɕi, tɕi? (ex. 3,7).

Beijing Mandarin and Wenzhou further expand the domain of apicalization, but in two different directions: Beijing extends apicalization to any [i] including the tertiary [i] form *iêC), whereas Wenzhou broadens the context of apicalization to sibilants of all origins, including the tertiary sibilants from Palatal.

If we superimpose the varying scopes of apicalization in just these four dialects, we get the following composite picture (8), where S and I stand for sibilants and [i] respectively, and where the subscripts 1,2,3... indicate primary, secondary and tertiary sources.



It can be seen that the direction of the gradual expansion of the domain of apicalization is top-to-bottom, and right-to-left. Clearly, apicalization must have grown by successive stages, each of which is instantiated by at least one modern dialect. Instead of (7), the latitudinal method based on cross-dialectal evidence suggests the chronological profile given as (9), where Wenzhou simply represents the end result of a long chain of events.

| | | | | | | | |
|-----|-----|-----|-------|-----|------|----------|-------------|
| (9) | tçi | ti | tçiai | ki | kiai | MC | |
| | tsɿ | -- | -- | -- | -- | Apical-1 | |
| | -- | tçi | -- | -- | -- | Sibilant | → Huangxian |
| | -- | -- | tçi | -- | ki | V-Shift | |
| | -- | tsɿ | tsɿ | -- | -- | Apical-2 | → Jinhua |
| | -- | -- | -- | tçi | tçi | Palatal | → Beijing |
| | -- | -- | -- | tsɿ | tsɿ | Apical-3 | → Wenzhou |

If this line of thinking is correct, there are at least three ‘waves’ of apicalization. But the evolution of apical vowels need not stop here. Hefei (SE Mandarin of Anhui) and Wenshui (NW Mandarin of Shanxi) instantiate more extreme forms of apicalization, suggesting the occurrence of Apical-4 and Apical-5. Thus in Hefei, we have readings like [p’ɿ, nɿ, tsɿ, zɿ] from MC /p’i, niai, ti, ia/ for ‘to break wind, clay, to lift, night’ respectively. In Wenshui, apicalization extends to nasal rimes, witness a syllable like [pɿ] which stands for ‘cake, pastry’ (from MC /ping/) as well as for ‘to close (door)’ (from MC /piai/).

Noting that the Mandarin dialects of Huangxian and Beijing are unlikely to represent modern relics of ancestral forms of a Wu dialect like Wenzhou, one may question the reliability of ‘latitudinal projection’ onto the longitudinal axis as a tool of historical reconstruction. Indeed, on the basis of the facts of Table 2 alone one cannot argue for the logical necessity of a historical scenario depicted in (9). On the other hand, the cross-dialectal argument is highly suggestive in conjunction with other corroborating types of evidence. Internal evidence in some dialects clearly point to the recurrence of apicalization at various points in time. Take the case of Beijing.

| (10) | MC | | Beijing |
|------|-------|-----|---------------|
| 1 | tɕi | tɕɿ | ‘branch’ |
| 2 | tɕiai | tɕɿ | ‘regulation’ |
| 3 | tɕiêk | tɕɿ | ‘to weave’ |
| 4 | tsi | tsɿ | ‘purple’ |
| 5 | tsiai | tɕi | ‘to squeeze’ |
| 6 | tsiêk | tɕi | ‘immediately’ |

For palatal sibilants, apicalization occurs regardless of the historical source of [i]. For syllables with a dental sibilant, on the other hand, apicalization applies only to the primary [i] (from MC *i) but not to secondary or tertiary [i] (from *iai and *iêC respectively). This asymmetry signals two different instances of apicalization, each with its distinctive sets of inputs. Specifically, Beijing calls for the following (partially) ordered set of diachronic rules:

- | | | | |
|------|------------|----------------------------|-----------|
| (11) | Retroflex | palatal sibilants | retroflex |
| | Apical-1 | i → ʈ / sibilant | ___ # |
| | V-Shift | iai → i | |
| | C-Deletion | iêC → iC → i | |
| | Apical-2 | i → ʈ / retroflex sibilant | ___ # |

Crucially, V-Shift and C-Deletion (which create the secondary and tertiary [i]) must come after Apical-1 and before Apical-2. This kind of chronological interdigitation is shown in a typical derivation given here as (12):

- | | | | | | | | |
|------|-----|-------|-------|-----|-------|-------|--------------------|
| (12) | 1 | 2 | 3 | 4 | 5 | 6 | |
| | tɕi | tɕiai | tɕiêk | tsi | tsiai | tsiêk | |
| | tɕi | tɕiai | tɕiêk | -- | -- | -- | Retroflex |
| | tɕʈ | -- | -- | tsʈ | -- | -- | Apical-1 |
| | -- | tɕi | tɕi | -- | tsi | tsi | V-Shift/C-Deletion |
| | -- | tɕʈ | tɕʈ | -- | -- | -- | Apical-2 |
| | -- | -- | -- | -- | tɕi | tɕi | other (Palatal) |

It is the asymmetry of the two apicalization rules in Beijing, each with a

distinct set of contextual conditions, that has preserved a clue to the multiple occurrence of this process in history. As soon as this asymmetry is levelled out, this clue would be lost forever. One way this asymmetry may disappear is, for instance, if Apical-1 were to recur with the effect that [tsi] from both *tsiai and *tsiêk becomes [tsɿ] as in (13):

| | | | | | | | |
|------|-----|-------|-------|-----|-------|-------|--------------------|
| (13) | tɕi | tɕiai | tɕiêk | tsi | tsiai | tsiêk | |
| | tɕi | tɕiai | tɕiêk | -- | -- | -- | Retroflex |
| | tɕɿ | -- | -- | tsɿ | -- | -- | Apical-1 |
| | -- | tɕi | tɕi | -- | tsi | tsi | V-Shift/C-Deletion |
| | -- | tɕɿ | tɕɿ | -- | -- | -- | Apical-2 |
| | -- | -- | -- | -- | tsɿ | tsɿ | Apical-1 |

In such a hypothetical eventuality, the diachronic picture inferrable from the MC:Beijing correspondence would undergo a drastic realignment, obliterating in the process any trace of multiple apicalization. From the distance of a historical linguist peering back into the past, (13) now becomes telescoped into something like (14):

| | | | | | | | |
|------|-----|-------|-------|-----|-------|-------|--------------------|
| (14) | tɕi | tɕiai | tɕiêk | tsi | tsiai | tsiêk | |
| | tɕi | tɕiai | tɕiêk | -- | -- | -- | Retroflex |
| | -- | tɕi | tɕi | -- | tsi | tsi | V-Shift/C-Deletion |
| | tɕɿ | tɕɿ | tɕɿ | tsɿ | tsɿ | tsɿ | Apical-1 |

In all probability, the picture of Wenzhou painted in (7) presents just such a distorted view of historical reality.⁴ The Huangxian dialect provides

4 The only notable difference between Wenzhou and the hypothetical scenario is that apicalization does not apply to tertiary [i] from *iêC in Wenzhou.

corroborating evidence for an early onset of apicalization. Here are the relevant data extracted from Table 2:

| | | | | |
|------|----------|--------|---------|------------|
| (15) | 'branch' | 'know' | 'weave' | |
| | tçi | fi | tçiêk | MC |
| | tçi | -- | -- | Retroflex |
| | tɕ | -- | -- | Apical |
| | -- | -- | tçi | C-Deletion |
| | -- | tçi | -- | Sibilant |

Apicalization must precede C-Deletion and Sibilant, both of which create potential new inputs to Apical; Apical, in other words, stands in a 'counter-feeding' order vis-a-vis both C-Deletion and Sibilant.

Let us now compare (7) with the more realistic pictures (12) and (15) with some known dates based on Table 1 attached:

| | | |
|----------------|------------|----------------------|
| (7) Wenzhou | V-Shift | |
| | Sibilant | 1270-90 |
| | Palatal | -1605 |
| | Apical | |
| (12) Beijing | Retroflex | -907 |
| | Apical-1 | |
| | V-Shift | |
| | C-Deletion | 1011-77 (circa 860?) |
| | Apical-2 | |
| (15) Huangxian | Retroflex | -907 |
| | Apical | |
| | Sibilant | 1270-90 (8-9th c.) |
| | C-Deletion | 1011-77 |

If we were to blindly accept the order of diachronic rules (7) established

exclusively on the sound correspondences between MC and modern Wenzhou, we would conclude that apicalization must have occurred some time after the palatalization of velar initials in the 17th century. Cross-dialectal evidence, on the other hand, points to a much earlier onset of apical vowels. In this respect the most conservative Huangxian is particularly revealing. It shows that apicalization must have taken place before Sibilant (palatal stops > affricates) and C-Deletion, whereby the entering tone checked syllables lost their stop endings. C-Deletion is dated by the rime books at the beginning of the second millenium. More importantly, although among the rime books *Qieyun zhizhangtu jiejiao* (1270-90) gives the first clear indication of the fusion of palatal stops and affricates, other philological sources bear unmistakable evidence of a much earlier date. For instance, the Dunhuang Sino-Tibetan texts (8-9th c.) transliterate MC palatal stops and affricates indifferently as *c*, *c'*, *j* [*tʃ*, *tʃ'*, *dʒ*]. Luo (1933, p.140) sees in this scribal practice the beginning of Sibilant. Luo's interpretation is strengthened by Shao's (1963, p.197-8) observation, that the authors of Tang popular literature often mistakenly substituted **t* words for **tʃ*, characters and vice versa (same with **t'*, **d* and **tʃ'*, **dʒ*). Such 'typos' (known as *biezi yiwen* [別字異文] or 'deviant graphs') clearly signal the disappearance of the original stop/affricate contrast in the actual pronunciation of the Tang period. Given the diachronic rule order established for (15) coupled with the early dates established for Sibilant, we conclude that the first apical vowels must have appeared by the 8th century.

Philological records lend further support for 'latitudinal interpolation' as a tool for recreating the evolutionary profile of sound changes. We argued on the basis of cross-dialectal distribution (Table 2) that apicalization must have gradually extended its domain in successive waves. We then projected

this ‘phylogenic’ evolution(8) onto an ‘ontogenic’ development within Wenzhou itself (9). While there is no logical necessity that ontogeny should mirror phylogeny, the plausibility of this kind of projection finds powerful support in philological documents. The first unambiguous evidence for the apical vowel as a distinct phonological category is given in *Zhongyuan Yinyun* (1324). This rhyme book split the traditional Zhi [止] rhyme into two separate headings: Qi-Wei [齊微] for /-i/ and Zhi-Si [支思] for /-i/. What is striking is that *Zhongyuan Yinyun* classed syllables ending in MC *i under the newly created Zhi-Si rhyme only if they had as onset one of the primary MC sibilants (not sibilants derived via Sibilant or Palatal). This means that the scope of apicalization attested in *Zhongyuan Yinyun* coincides precisely with that of Huangxian. The next document giving clues to the spread of apical vowels is Nicholas Trigault’s *Xiru Ermuzi* (1626). In contrast to *Zhongyuan Yinyun*, apicalization now extends to both primary and secondary sibilants (from MC palatal stops) and to both primary and secondary [i] (from MC *iai), to the exclusion of tertiary sibilants (from velar initials via Palatal) and tertiary [i] (from MC *iêC via C-Deletion). The scope of apicalization then, as attested by *Xiru Ermuzi*, is exactly coextensive with the synchronic reflexes of Jinhua. Modern Mandarin and Wenzhou all share this broader range of apicalization and each further extended it in different directions: Beijing Mandarin to tertiary [i] (from MC *iêC), Wenzhou to tertiary sibilants (from MC velars). By superimposing these three successive synchronic stages as reflected in the various documents, we get the following picture:

| | | | | |
|------|--------------------------|--------------------------|------------------------|--------------------------------------|
| (16) | I ₃ ← *iêC | I ₂ ← *iai | I ₁ ← *i | |
| | | | | S ₁ ← MC sibilants |
| | | | | Zhongyuan Yinyun (1324) |
| | | | | S ₂ ← MC palatal stops |
| | | | | Xiru Ermuzi (1626) |
| | | | | Modern Beijing |
| | | | | S ₃ ← MC velars |
| | | | | Modern Wenzhou |

We may think of (16) as multiple exposures of successive snapshots taken in real time. It is striking that (16) matches point by point the composite picture (8) representing ‘apparent time’ created by the technique of latitudinal projection. This convergence of evidence leads us to conclude that the apicalization must have progressed in stages.

Philological evidence is paradoxical in one respect. On the one hand, the Huangxian data clearly indicates the first onset of apicalization predating Sibilant, which must have taken place by the 8-9th c. based on the Dunhuang Sino-Tibetan transliterations and on the ‘deviant graphs’ dating back to the Tang period. On the other hand, the first philological evidence for apical vowels did not become available until Zhongyuan Yinyun (1324), which for the first time set up a distinct Zhi-Si /ʈ/ rime. Earlier documents like the Sino-Tibetan transliterations of the Tang and the Five Dynasties consistently used /i/ to transcribe both [i] and [ʈ]. Are we to conclude therefore that apical vowels did not come into existence until the 14th century? If so, how do we explain the discrepancy in dating by about 600

years, and more importantly, how do we reconcile the conflicting relative chronology between Sibilant (8-9th c.) and Apical (either by the 8th c. or in the first part of 14th c.)?

The answer is unambiguous: the fact that the MC *i, despite its split into [i, ɿ] showed a cohesion as a single category in the rime books as well as in the Sino-xenic transcriptions until the 14th c. cannot be construed as an argument *ex silentio* for the absence of apical vowels until the Yuan dynasty -- not more than the lack of a special symbol for the apical vowel in Pinyin can be interpreted as the non-existence of [ɿ] in Mandarin. The key to understanding this apparent paradox lies in the notion of complementary distribution. The situation facing the Dunhuang scribes is as follows:

| | | | |
|--------------|----|----|-------------|
| (17) | -ɿ | -i | other rimes |
| sibilants | + | - | + |
| other onsets | - | + | + |

There is no need for a special symbol for [ɿ], since a regular /i/ is predictably apicalized after sibilant initials. The principle is the same as the one-to-many spelling to sound relation we see in Pinyin: /ti, si/ = [ti, sɿ] respectively. Both the Dunhuang writers and the compilers of rime books clearly understood the principle of complementary distribution in choosing orthographic conventions in the first case and in setting up phonological categories in the latter. As far as the Dunhuang scribes are concerned, (18) is a perfectly adequate orthographic representation of (17):

| | | | |
|--|----|----|-------------|
| (18) | -ʈ | -i | other rimes |
| sibilants | i | * | V |
| other onsets | * | i | V |
| * = systematic gaps | | | |
| V = appropriate transcriptions for other rimes | | | |

Needless to say, this neat distributional pattern was destroyed with the appearance of secondary [i] (from *iai):

| | | | |
|--------------|----|-----|-------------|
| (19) | -ʈ | -i | other rimes |
| sibilants | + | <+> | + |
| other onsets | - | + | + |

The secondary [i] now can occupy the position indicated as <+>, creating a new contrast, say, between [tsʈ] (< MC tsi) and [tsi] (< MC tsiai). At this point a single letter 'i' can no longer suffice. Another letter was needed. As it turns out, this was precisely the situation facing the hP'ags-pa, a Mongolian script used in the 14th c. hP'ags-pa solved this problem by creating a new composite symbol 'hi', interpreted as an unrounded high central vowel by Hashimoto (1978). The new situation (19) then calls for a new orthographic convention given here as (20):

| | | | |
|--------------|----|----|-------------|
| (20) | -ʈ | -i | other rimes |
| sibilants | hi | i | V |
| other onsets | * | i | V |

It is worth noting that the new phonological category Zhi-Si became codified in Zhongyuan Yinyun (1324) at about the same time as the hP'ags-pa texts.

In short, we are confident, on the strength of comparative data we find in Huangxian, Beijing and other dialects, that Apical must predate Sibilant and other phonological processes known to have taken place at a fairly early date -- despite the absence of explicit philological testimony.

To sum up, by combining the techniques of logical interpolation between two end points, cross-dialectal or latitudinal projection, and a judicious interpretation of philological documents, we have recreated a profile of a long evolution of apicalization in Wenzhou, interdigitated with other historical processes, as chronicled below:

- | | | |
|------|----------|-------------------------|
| (17) | Apical-1 | by 8th c. |
| | Sibilant | 1270-90 (8-9th c.) |
| | V-Shift | ? |
| | Apical-2 | after 1324, before 1626 |
| | Palatal | by 1605 |
| | Apical-3 | after 1626 |

The origin and evolution of apical vowels in Wenzhou and other Chinese dialects illustrate the diagnostic value and, at the same time, the limitations inherent in the various linguistic methods of reconstruction. It is only by means of a judicious and imaginative use of these tools that we can recreate historically true scenarios of linguistic change. Given the residual morpho-phonemic alternations in the Chinese language, the method of internal reconstruction widely used in Indeo-European languages (cf. Hock 1988, p.532ff) is severely restricted in its usefulness as a tool. On the other hand, the long history of written records and extensive dialectological surveys, make Chinese an ideal testing ground for linguistic methods of diachronic reconstruction.

(Accepted for publication 18 February 1993)

REFERENCES

- Bonfante, G. 1945. On reconstruction and linguistic method. *Word* 1.83-94; 132-161.
- Bremer, O. 1894. Relative Sprachchronologie. *Indogermanische Forschung* 4.8-31.
- Chen, Matthew Y. 1973. Cross dialectal comparison: a case study and some theoretical considerations. *Journal of Chinese Linguistics* 1.38-63.
- Chen, Matthew Y. 1976a. From Middle Chinese to Modern Peking. *Journal of Chinese Linguistics* 4.113-277.
- Chen, Matthew Y. 1976b. Relative chronology: three methods of reconstruction. *Journal of Linguistics* 12.209-258.
- Cheng, Tsai-fa. 1966. Hanyu yinyunshi de fenqi wenti. [The periodization of Chinese phonology]. *Bulletin of the Institute of History and Philology* 36.635-48.
- Dong, Tonghe. 1968. *Hanyu yinyunxue*. [Chinese phonology]. Taipei: Xuesheng Shuju.
- Elman, Benjamin. 1982. From value to fact: the emergence of phonology as a precise discipline in late imperial China. *Journal of the American Oriental Society* 102.493-500.
- Halle, Morris. 1962. Phonology in generative grammar. *Word* 18.54-72.
- Hashimoto, Mantaro. 1978. *Phonology of Ancient Chinese*. Tokyo: Institute for the Study of Languages and Cultures of Asia & Africa. 2 vols. [= 1965 Ph.D. dissertation, Ohio State University]
- Ho, Dah-an. 1988. *Guilyu yu fangxiang: bianqian zhong de yinyun jiegou* [Regularity and direction: phonological structure in flux]. Taipei: Institute of History and Philology, Academia Sinica, monograph n.90.

- Hock, Hans H. 1988. *Principles of historical linguistics*. Berlin: Mouton de Gruyter.
- Karlgren, Bernhard. 1948. *Études sur la phonologie chinoise*. Tr. as *Zhongguo yinyunxue yanjiu*, by Yuenren Chao, Fangkuei Li and Changpei Luo. Commercial Press.
- Lin, Yen-hwei. 1989. *Autosegmental treatment of segmental processes in Chinese phonology*. Ph.D. dissertation, University of Texas at Austin.
- Lucas, Alain. 1985. *Linguistique chinoise: Bibliographie*. Centre de Recherches Linguistiques sur l'Asie Orientale, Paris: Editions Langues Croises.
- Luo, Changpei. 1933. *Tang, Wudai xibei fangyin*. [The northwestern dialects of Tang and the Five Dynasties]. Shanghai: Academia Sinica.
- Shao, Rongfen. 1963. Dunhuang su wenxue zhong de biezi yiwen he Tang, Wudai xibei fanyin. [The deviant graphs in the popular literature of Dunhuang and the northwestern dialects of Tang and the Five Dynasties]. *Zhongguo Yuwen* 124.193-217.
- Wang, Li. 1958. *Hanyu shigao*. [A history of the Chinese language]. Beijing: Kexue chubanshe.
- Ying, Yukang. 1972. *Qingdai yuntu zhi yanyiu*. [A study on the rime charts of the Qing dynasty]. Taipei: Hongdao wenhua shiye.
- Zhao, Yintang. 1957. *Dengyun yuanliu*. [The origin and evolution of Chinese phonology]. Shanghai: Shangwu.

劉宋時期在漢語音韻史上的地位

——兼論音韻史的分期問題

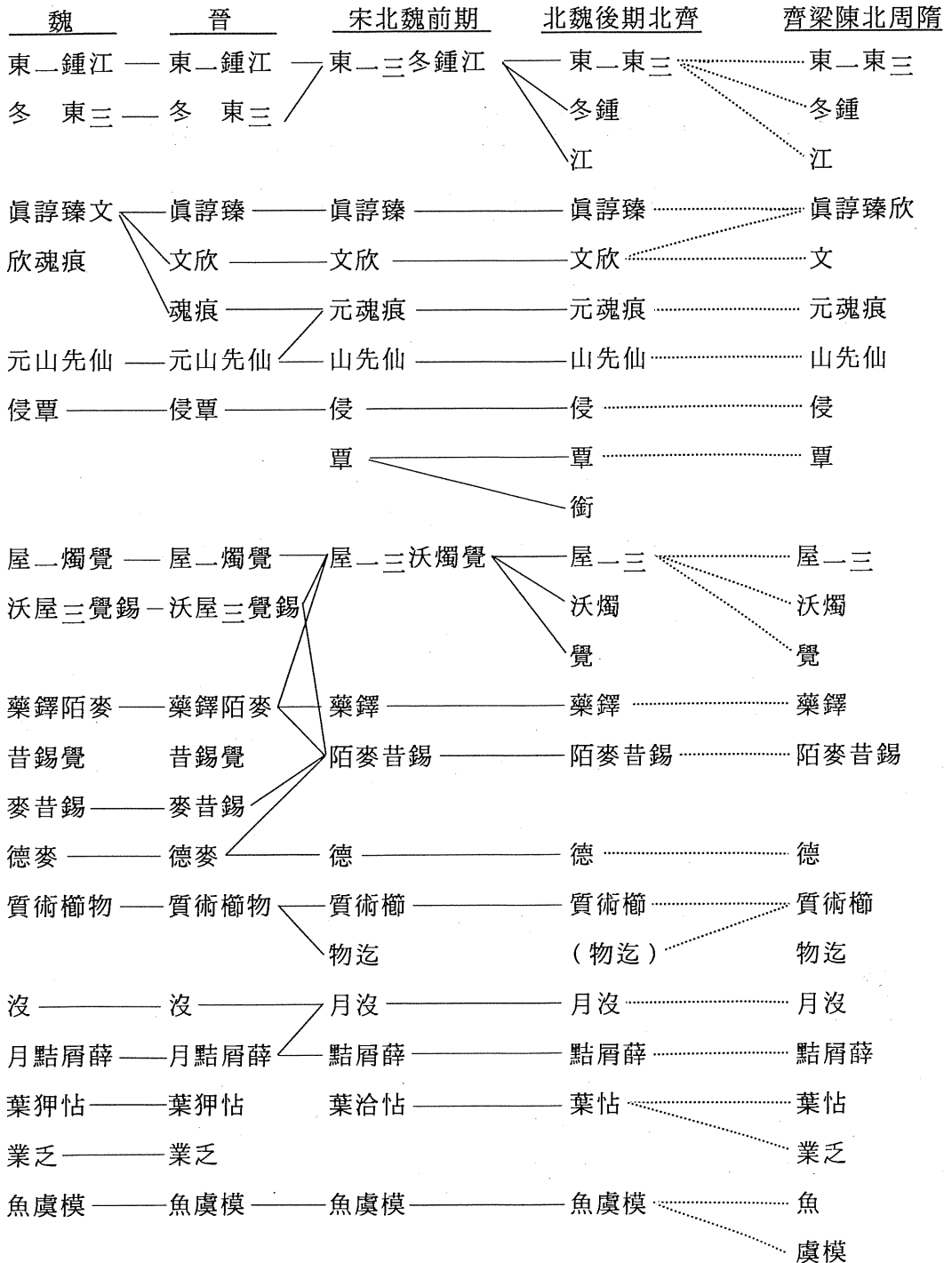
何 大 安

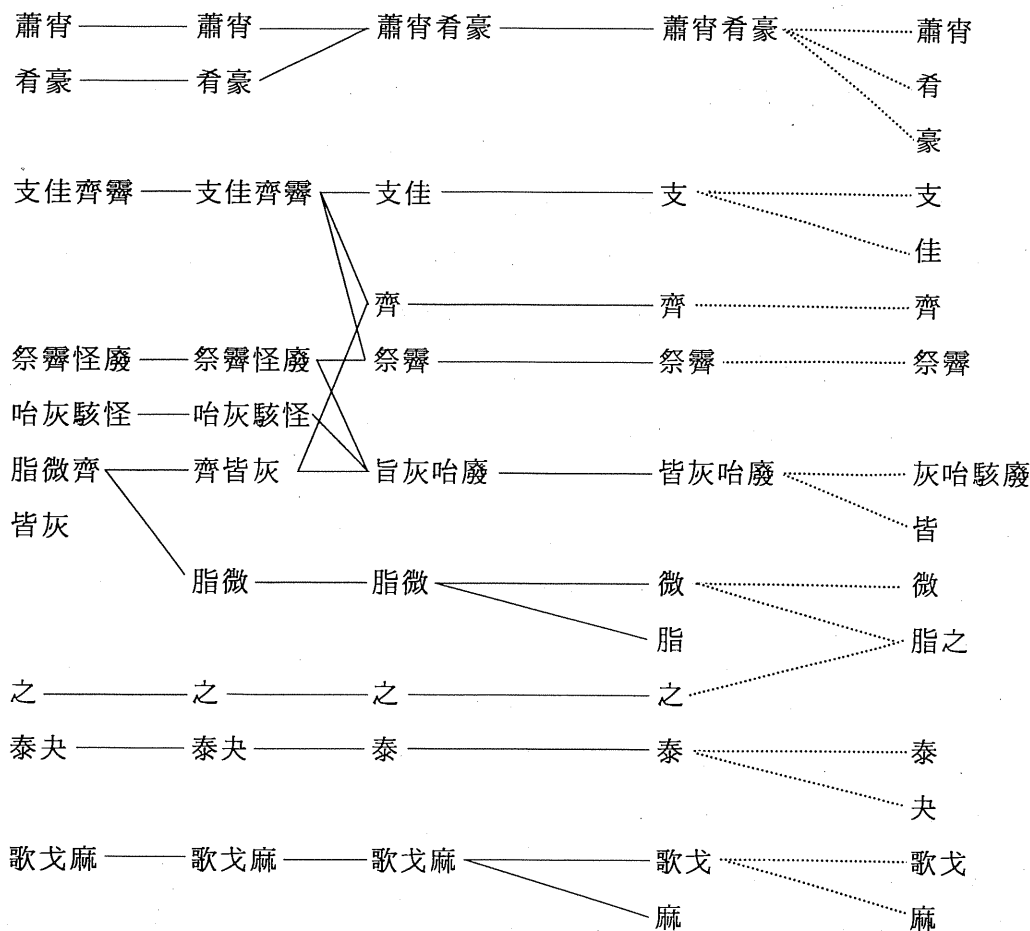
中央研究院，歷史語言研究所

劉宋立國為時雖短，但在音韻史分期的歸屬上，學者之間卻有不同的意見。本文從東、中兩部的重組現象，主張劉宋應歸入齊梁陳，同屬中古晚期。立論的主要觀點，不是韻部表面的分合，而是音韻結構的變動與否。本文並進一步主張，音韻史的分期應當以結構上的特點為主要的標準。

劉宋時期，從宋武帝永初元年（公元 420 年）到宋順帝昇明二年（公元 478 年），只有五十九年的時間。這五十九年的時間雖然並不長，但是在漢語音韻史上，究竟應該放在哪個階段，卻有兩種不同的看法。于海晏（1936）、羅常培與周祖謨（羅常培、周祖謨 1958，周祖謨 1988a.b.c）三位先生認為「魏晉宋」是一個時期，「齊梁」以下是另一個時期。林炯陽（1972）、丁邦新（Ting 1975）兩位先生在研究魏晉詩韻的時候，都不把宋包括進去；雖然沒有明說，卻顯然不以為「魏晉宋」是密不可分的一個階段。對於魏晉南北朝整個詩韻所反映的音韻史的研究來看，幾位先生的取材都是相近的，韻部歸納的結果，容有寬嚴之異，大體也沒有太大的出入。為什麼會有不同的認定，是一個應該進一步深思的問題。

魏晉南北朝的詩韻演變，根據我自己（何大安 1981）的觀察，可以用下面這個簡單的表來說明。表中各韻部不另立部名，並列的《切韻》韻目即同屬一部。



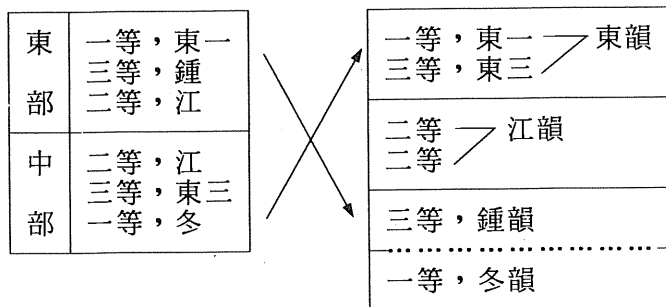


大致來說，劉宋和遷都洛陽以前的北魏（公元439—493年），南北是一個韻部上合而不分的大區域，可以稱為南北朝的第一期。南北朝的第二期，南北各有特色。在北方，從北魏遷都洛陽（公元494年），經過再遷鄴（公元534年）、北齊建國（公元550年），一直到北齊亡（公元557年），共有八十年，是一個段落。南方則從齊高代宋（公元480年），經梁、陳，一直到隋亡（公元618年）是另一個段落。北方的北周和統一前的隋，也在這個段落之內。表中的「宋北魏前期」代表南北朝一期，「北魏後期北齊」、「齊梁陳北周隋」代表第二期的北方和南方。第二期的北方和南方同時承自第一期，但是南北彼此並無承繼關係。三個表中「齊梁陳北周隋」之前的虛線，表示與「北魏後期北齊」無

關，而是直承更前的「宋北魏前期」。

魏晉之間的演變，都是韻部的分化。分化的結果，是使一等（魂痕）和三等（文欣、脂微）韻更趨獨立。也就是說，使一、三等的特色，愈趨明顯。南北朝第二期和第一期比較起來，主要的發展也是分化。這時候分化的重點卻擺在二等（江、覺、佳、皆、刪、銜）上。晉宋之間，韻部的演變，形態比較豐富，有分化，有合併，有重組。分化之中，有使一、三等韻獨立的，如覃、物、迄。也有使四等韻獨立的，如齊。前者可說是魏晉以來一、三等韻獨立過程的延續，後者雖然並未影響南北朝時期其他的四等韻也獨立成部，但在語音上分別四等韻的人確實越來越多，¹ 則這種趨勢亦不容忽視，而其發端則在晉宋之際。晉宋之間韻部的合併有一個最重要之點，那便是《切韻》的每一個韻，如在上古兩漢乃至魏晉有別的，有不同來源的，現在都已分頭合併成《切韻》的面目。《切韻》的每一個「韻」的形成，有的早有的晚，至少在劉宋的時候，這些韻的組織已經完成了。所謂「重組」，是指一個韻部之內同時發生了分化和合併。整個的看，重組的方向也是往《切韻》走，其中最重要的，是東冬鍾江四韻的分合。

《切韻》的東一、鍾、和江的一部分字，在上古為東部，冬、東三和江的另一部分字上古為中部。東、中的分別，從上古到魏晉，一直保持得很好。但是在《切韻》裡，卻是東一、東三合而為一，冬鍾、江分立。更晚的韻圖則把冬、鍾併為一圖，江則趨近於陽唐。也就是說，東、中兩部的三等韻，經過了一次大交換：



1 例如在南北朝時期，庚清青通押 215 次，清青通押 130 次，而清獨用 70 次、青獨用 54 次，可見許多人都覺察到二者的不同。齊謝朓《酬德賦》連用六個青韻上聲字，北周

這個大交換發生的關鍵時期，就在劉宋和北魏的前期。這一時期的押韻情形是：

1. 東部獨用（包括東一、鍾、江的獨用或混用）：19次
2. 冬部獨用（包括東三、冬、江的獨用或混用）：22次
3. 東冬混用：54次

細分來看，次數最多的東三，獨用20次。其次是東一東三的混用，16次；東一東三和鍾的混用：11次；東一東三、鍾、江的混用，10次。不過東三獨用的20次，固然可以看作冬部獨用，但是除了一位作者（王韶之）之外，其他東三獨用的作者，都另有東冬部混用的例子。因此東三獨用並不單純地代表冬部至此仍界限分明，它毋寧顯示在東一東三冬鍾江的大混合中，東三有獨成一類之勢。無論如何，東、冬兩部的分用，都不及混用的多。而在混用的54次之中，東一東三同時出現的有40次，² 超過三分之二以上。從《切韻》東韻獨用的角度來看，共有36次，³ 比起東部的19次和冬部的22次多得多，因此我認為，《切韻》的東韻此時已基本成形。

東、冬部在劉宋和北魏前期的混用，前人早已看出來。⁴ 但是這種押韻上的混用，只能理解為韻母的相近，而不能理解為韻母的相同，否則便無以解釋自齊梁至《切韻》東、冬、鍾、江的分立。從上文押韻次數的觀察來看，也只有在混用中所透露出來的彼此細微的分別，才足以使後來的分立有所根據。所以就東冬鍾江四韻而言，劉宋和北魏前期正是這樣一個舊界漸泯、新域始分的分合同時進行的重組階段。如果只從表面上的混用與否來看，我們很可以說劉宋是魏晉到齊梁的過渡，必欲強分，則歸之魏晉，歸之齊梁，均無不可。可是若從韻部結構的歷史發展形態來看，劉宋的混用改變了前代的疆界，而齊梁的分立，則不過是劉

王褒《從軍行》連用十一個青韻平聲字，都是很好的例子。又如仙先合用567次，但在第二期的南方，仙獨用62次，先獨用106次。四等獨立的趨勢，非常明顯。

- 2 除了上文提到的東一東三16次，東一東三鍾11次，東一東三鍾江10次之外，還有東一東三冬鍾江2次，東一東三江1次。
- 3 包括東三獨用20次，東一東三混用16次。
- 4 例如周祖謨(1988a)先生就說過：「劉宋時期東冬鍾江四韻通押，合為一部，齊梁以後，東韻字為一部，冬鍾兩韻字為一部，江韻字為一部」。周先生的「劉宋」是包括「北魏」在內的。

宋新規矩的進一步延續；自晉而宋，有分有合，自宋而齊，唯分而已；顯然晉宋間的「斷裂」程度，大過宋齊。

我們知道《切韻》有一些韻，在上古分屬好幾個韻部。也就是說，這些韻在上古有不同的來源。這些不同的來源從上古好幾部分出來，再凝聚在一起，也就是經過了重組的過程，才形成《切韻》的一個韻。我們可以根據重組後新生成韻數的多少，來比較魏、宋兩代變動的大小：

| 魏 | | 宋 | |
|--------|-------|--------|-------|
| 韻 部 名 | 合流的韻 | 韻 部 名 | 合流的韻 |
| 尤侯幽 | 尤、侯 | 東一三冬鍾江 | 東、江 |
| 宵蕭 | 宵、蕭 | 屋一三沃燭覺 | 屋、沃、覺 |
| 肴豪 | 肴、豪 | 陌麥昔錫 | 麥、昔、錫 |
| 魚虞模 | 虞 | 齊 | 齊 |
| 脂微皆灰哈齊 | 脂 | 祭霽 | 霽 |
| 元山先仙 | 山、先、仙 | 皆灰哈廢 | 皆、灰、哈 |
| 月黠屑薛 | 黠、屑、薛 | | |

凡是有不同來源的韻，其不同的來源在魏代已合流的，有十四個，在宋代合流的，有十三個。兩相比較，所差無幾。

從宋北魏前期到北魏後期和北齊，或者是從宋北魏前期到齊梁陳北周隋，其間的變化又和魏晉之間一樣，主要的是單純的分化和合併。單純合併的例子只有一個，就是質術櫛物迄的混用。分化的主要方向則是二等獨立，如江、銜、覺、肴、皆、佳、刪等。此外也有較複雜的合併的例子，如真諄臻欣爲一部，脂之爲一部。不過這些合併，就其在音韻基礎上的變動而言，程度要較前舉魏、宋的情形輕得多。因為牽涉其中各韻的韻類都已固定，並沒有新的韻要靠這次合併來定

型。因此，我們也可以說北魏後期和北齊（公元 494 — 577）的八十多年，或是齊梁陳北周隋（公元 479 — 619）的一百四十年，是繼續宋北魏前期的變動之後的發展期。《切韻》的面目，在宋北魏前期，已經完全改裝完成。此後的一百多年只是陸續拆封而已。

從上古到西漢，主要的發展是韻部的合併：侯魚、脂微、真文、質術都合併了；其次是之幽兩部的重組。真、諄、質、術、尤等五個韻在這些合併和重組當中形成了。從西漢到東漢，經過蒸東、陽耕、魚歌支三次重組，新形成的韻則有麻、支、⁵ 庚三個。我們可以把從上古到隋末，經重組所新形成的《切韻》的韻數列表如下：

| | |
|------|----|
| 西漢 | 5 |
| 東漢 | 3 |
| 魏 | 14 |
| 晉 | 0 |
| 宋 | 13 |
| 齊梁陳隋 | 0 |

作了以上的觀察之後，我們充分的了解到，在《切韻》以前的漢語音韻史上，魏和宋真是兩個發展的高峰。音韻的發展，誠然不能在某一個時間的定點上突然發生變化，應該有一段醞釀的時期，但是晉代一百五十年間沒有一點明顯的音韻上的大改變，卻實在不宜代表一個變動高原的核心時期。並且這樣做，於猶有變動的兩漢，於性質相若的齊至隋末，又如何對待呢？所以我同意《切韻》以前分三個大的時期，但是不贊成宋北魏前期入魏晉。如果以上古音、魏、宋為三個起點，兩漢的四百年、晉的一百五十年和齊以後的一百五十年，為起點間的發展和醞釀時期，那麼對音韻發展的解釋，就會圓滿得多。

羅、周兩位先生主張魏晉宋為一個時期的重要理由，是入聲與陽聲的關係，在這一個時期轉趨密切。周先生說：「兩漢以前陰聲韻與入聲韻相承，關係較密，然而自魏晉時期起，音韻系統變成另外一種格局，由於陰聲韻的韻尾消失以

5 支韻在上古有三個來源，來自佳、歌兩部的，在東漢已合流。來自脂部的「萎煨緹」等字，不見用於漢詩韻，不過魏時已入支部，因此推想可能在東漢時也已合流了。

後，韻部的元音有所改變，以致陰聲韻不再與入聲韻相承，而轉變為陽聲韻與入聲韻相承，這是很大的變化。」（周祖謨 1988a:94）周先生所說的陰聲韻韻尾，是指輔音韻尾（1988a:95），根據現在的了解，陰聲韻尾消失的經過可能是這樣的：⁶

| 上古 | 西漢 | 東漢 | 魏 | 晉 | 宋北魏 前 期 | 北魏後期 北齊、齊梁 陳北周隋 |
|--------|-----|---------|------------|---|------------|-----------------------|
| 之 -əg | | | -əī | | | |
| 幽 -əgw | | | -ou, -au | | | |
| 宵 -agw | | | -au | | | |
| 侯 -ug | | | -o, -ou | | | |
| 魚 -ag | -ai | | | | | |
| 歌 -ar | | -a, -ei | | | | |
| 佳 -ig | -ei | | | | | |
| 祭 -ad | | | | | | -ai, -ei |
| 脂 -id | | | | | | |
| 微 -əd | | | -ai (平, 上) | | | -i, -ei (去) |

上古九個陰聲韻部，入西漢脂微合併，成了八個。這八個部的輔音韻尾，有兩個在西漢時消失，有兩個在東漢時消失——其中一個的去聲還保留韻尾輔音；入魏一口氣消失了四個。剩下的一個和東漢時沒有消失完的一部分去聲，要到齊梁之際才丟掉。在以上的消失過程當中，魏是很重要的，晉宋同樣沒有什麼特殊的表現。然則所謂入聲韻和陽聲韻關係轉密，而與陰聲韻關係漸遠，其涉及於晉宋二代的，只是在兩漢與魏的既定基礎上，蔓衍其勢而已。陰、陽、入三聲關係的重新調整，百分之八十在魏以前已經完成，剩下的百分之二十則在齊梁以後，晉和宋並沒有關鍵性的地位。

6 參看羅常培、周祖謨 1958:45-47，Ting 1975:235-260，何大安 1981:243-270。

上面的一些討論，使我們覺得，對於音韻史的分期，應該從「音韻結構」上來作考慮，而不能只看表面的分合。表面的分合，很難判定孰輕孰重，每每讓人舉棋不定，或失於苛細，或失於籠統。結構性的特點，一方面是由日積月累地、由量變而質變所造成的，一方面這種特點既經形成也不會在短時間內就輕易消失，拿來作長時距的分期依據，有其代表性和穩定性，容易確立為一種比較客觀的標準。

比方上文談到魏代有過重要的韻部重組過程，陰聲韻百分之八十在入魏時已經有了大的變化，使陽入的關係轉密。上古音節結構中允許有兩個以上的字首輔音，也就是有複輔音，可是東漢以後已經漸次減少。《切韻》的端、知、精、莊、章幾系聲母和開、合口介音，大致都在東漢和魏晉之交形成，⁷ 這意味音節結構有了改變。自魏晉至隋唐，音節結構是相同的，與東漢以上的有字首輔音群的結構迥不相同。因此東漢以上，是一個大段落，可以稱為上古音 (Old Chinese)。魏晉至隋唐是一個大段落，可以稱為中古音 (Middle Chinese)。中古音之中，魏晉是前一個階段，或稱中古早期 (Early Middle Chinese)，宋以後迄唐末是後一個階段，或稱中古晚期 (Late Middle Chinese)。

唐代中晚期開始的濁上歸去，併轉為攝，以及輔音韻尾的變動，反映了另一階段重組的開始。唐五代西北方音中出現的幾種濁母清化的類型，也顯示音節結構的聲母部分有了結構性的改變：能作為聲母的濁塞音、濁塞擦音成套地消失了。這種音韻結構上的變化在北宋汴洛方音裡已經形成一種不同於中古的新面貌（周祖謨 1966）。這種新的音韻結構，經歷元、明、清的北音時期到今天的官話，大體相承相近。因此自宋至今，可以立為另一個大的段落，即近代音 (Modern Chinese)。⁸

7 這方面的研究，請參看 South Coblin 的幾篇著作。

8 漢語音韻史的分期，如果只就音節結構的形式而論，上古、中古、近代的分別也是一目瞭然的：

| | |
|-----|-----------------|
| 上古音 | C(C)(M)(M)(M)VE |
| 中古音 | (C)M(M)V(E) |
| 近代音 | (C)(M)V(E) |

上古、中古、近代這三個大段落之中，如有必要，可以再作細分。但細分的理據，不應該是表面上的某音變爲某，或某某有別，某某合流，應該仍舊是結構

C、M、V、E分別代表聲母、介音、元音和韻尾。對於三個時期音節結構的異同，我曾經有過說明（何大安 1987:257-258），現在轉引如下：

「三個時期的差別，可以分兩部分來說明。第一，就結構的表面上看，最大的不同表現在主要元音以前的部分。近代漢語可以有零聲母的單元音字，中古漢語則不容許這種結構，它一定得有輔音聲母或介音。上古漢語更複雜，它不但一定有輔音聲母，這個輔音聲母還可以不只有一個。近代漢語可以沒有介音，像一般的開口韻；中古和上古漢語也是如此。不過中古漢語可以有兩個介音成分，上古甚至可以有三個，近代漢語則不然。

第二，從音節結構限定來看，差別就更大了。同是C、M、V、E，內容卻絕不相等。中古漢語的C，有所謂清（或全清）、次清、濁、清濁（或次濁）這幾類聲母。可是近代漢語當中，有的方言已經沒有濁塞音和濁塞擦音聲母了，像官話、客語、和大部分的贛語。上古漢語的複輔音，要不是第一個輔音是個前加成分的s-，第二個輔音是個塞音；便是第一個輔音是塞音，第二個輔音是-l-，也就是說，有兩種主要的型態：*s-加塞音和*塞音加-l-。至於單輔音，除了中古音的四大類聲母之外，可能還有其它類型的聲母，像是清鼻音或清邊音聲母。近代漢語的介音，是i、u，或i、u、y。中古介音是i、j、u、ju（或jw）、iu（或iw）這幾個。上古則是r、j、i、u、rj、rji、ji等等。E的內容也大不相同。近代漢語，可以有-p、-t、-k、-m、-n、-ŋ、-u、-i的韻尾，像一部分的現代南方方言，也可以只剩一個鼻音韻尾，像吳語。中古漢語的韻尾是-p、-t、-k、-m、-n、-ŋ、-u、-i。上古漢語也有-p、-t、-k、-m、-n、-ŋ這些輔音韻尾。上古的陰聲字可能還有-b、-d、-g、-r這樣的韻尾。中古的-i、-u，可能來自上古的-b、-d、-g。那麼上古的E就完全是輔音了。並且由於陰聲字都有輔音韻尾，因此上古的E（其實也就是C）也就成了不可少的成分。

當然，我們曾經在第九章提到過，對於古語可以有不止一種解釋，也就是可以有不只一種擬音。去古越遠，資料就越不完整，不同的解釋必然更多。這裏對上古、中古、近代漢語音節結構的討論，又以擬音爲其基礎。選擇不同的擬音，比較的結果一定會有所出入。比方說，如果不同意上古有-b、-d、-g的韻尾，那麼E這個成分就可有可無。又比方對某種語音現象採取不同的解釋，可能上古的介音成分會減少一個，但是元音或輔音也許就複雜了。大體上說，三個時期音節結構上的主要不同，雖然可能因擬音學說的選擇而有所出入，但是還是相當確定的：上古有複聲母，至少有兩個介音，中古在元音之前一定要有輔音或介音，近代則元音前後都可以沒有其它成分。總的趨勢，正是我們所提過的：簡化。」

此外讀者也可參看丁邦新師(1979)關於上古漢語音節結構的討論。

上的特點，如中古之分早晚。我們提出來的分期結果，容與前人有不異之處，而所持之故所以有別，正在結構此一觀點。也正因為結果不異，可見所持之故，在某一程度上，尚能勉符人心之所同。

（本文於民國八十二年二月十八日通過刊登）

引用書目

- 丁邦新 1979 〈上古漢語的音節結構〉，《中央研究院歷史語言研究所集刊》50.4:717-739。
- 于海晏 1936 《漢魏六朝韻譜》，北平。
- 何大安 1981 《南北朝韻部演變研究》，國立台灣大學博士論文。
- 1987 《聲韻學中的觀念與方法》，台北，大安出版社。
- 林炯陽 1972 〈魏晉詩韻考〉，《國立台灣師範大學國文研究所集刊》16: 1105-1302。
- 周祖謨 1966 〈宋代汴洛語音考〉，《問學集》下冊：581-655，北京中華書局。
- 1988a 〈魏晉音與齊梁音〉，《周祖謨語言文史論集》69-99，浙江古籍出版社。
- 1988b 〈魏晉宋時期詩文韻部的演變〉，《周祖謨語言文史論集》100-138，浙江古籍出版社。
- 1988c 〈齊梁陳隋時期詩文韻部研究〉，《周祖謨語言文史論集》139-168，浙江古籍出版社。
- 羅常培、周祖謨
- 1958 《漢魏晉南北朝韻部演變研究（第一分冊）》，北京，科學出版社。
- Coblin, W. South
- 1974-75 The Initials of the Wei-chin Period as Revealed in the Phonological Glosses of Kuo P'u and Others. *Monumenta Serica* 31:288-318.
- 1977-78 The Initials of the Eastern Han Period as Reflected in Phonological Glosses. *Monumenta Serica* 32:207-247.

- 1978 The Initials of Xu Shen's Language as Reflected in the Shuowen Duruo Glosses. *Journal of Chinese Linguistics* 6: 27-75.

Ting, Pang-hsin (丁邦新)

- 1975 *Chinese Phonology of the Wei-Chin Period: Reconstruction of the Finals as Reflected in Poetry*. Special Publication 65, Institute of History and Philology, Academia Sinica, Taipei.

《日本寄語》所反映的明代吳語聲調

木津祐子 (KIZU Yuko)

日本京都大學

本文利用明代漢日對音資料《日本寄語》，對當時浙江沿海地區吳語的聲調調值進行探索，結論大致如下：

①平聲分爲陰陽兩調。

②陰平字與日語聲調高調部分相對應，陽平字用在低調部分。陰平的音域高，可能是高平或稍降的調，陽平的音域低，可能是低平調或稍昇的調。

③上聲、去聲有沒有陰陽調的區分，不很清楚。上、去聲的單字調可能是曲折調或某種非平調，因而不適合對譯日語的“音階型”聲調。處在字組第二成分以後的位置，則失去原有的調型，變讀爲平調。

④入聲音節末帶喉塞音，但是除了注音漢字組的最後成分以外，其喉塞音微弱或失落。陰入聲字作爲首字時，相對的日語多取高起式聲調（關於日語聲調參看下文4.），這一點跟平聲字相似，不過沒有陰平明顯。

0. 緒 言

中國傳統音韻學在清代達到了一個高峰，尤其在古韻部和中古音類的分析上取得了非常突出的成績，爲近代的語音史研究奠定了很精密的基礎。本世紀初年，瑞典學者高本漢 (Bernhard Karlgren) 把印歐語系比較語言學應用到漢語音韻學的研究上，揭開了新的一頁。他的主要貢獻之一是對漢語古代語音的構擬，不過高本漢著重於聲母和韻母的重建，而在聲調的調值方面未能得到令人滿意的結果。

從本世紀中葉起，各國學者開始致力於漢語古代調值的研究，已經取得了一定的成績，例如：

(一) 根據現代漢語方言的聲調調值，利用內部擬測法 (internal reconstruction) 進行重建工作 (平山 1972, 平山 1974, 平山 1983, 平山 1985)。

(二) 蒐集有關文獻資料據以推論 (Mei 1970, Mei 1977, 梅 1982, 遠藤 1984, 遠藤 1988, 丁邦新 1975, Pulleyblank 1978)。只是大部分文獻本身僅反映調類的分合，關於具體調值則只有少量的文字說明，較難據以進行考訂。南宋姜夔《白石道人歌曲》所附的旁譜反映曲調和字調的關係，是一項值得珍視的材料 (楊蔭瀏、陰法魯 1957, 游汝杰 1987)。其他還有一些詞學、曲學文獻也可供參考 (忌浮 1986)。

以上兩方面的研究，根據不同的材料，利用不同的方法，所得結論，互相參證，將來也許能達到構擬漢語聲調史的階段。

(三) 除上述以外，所謂對音研究的方法也有相當價值。材料有兩類：外語裡的漢語借字，外語詞的漢字音譯。可是對音研究首先要滿足兩個前提：第一，所對的外語音系中存在聲調，而且通過借字或者音譯可找出雙方之間的對應規律；第二，所對外語的聲調歷史演變已經得到可靠的結論。另外，最好有一定數量的同類文獻，可用來參照、核實。

日漢對音是比較適合上述條件的，一則日語自古以來區分高低聲調 (pitch accent)；二則它的聲調歷時演變至少可以上溯到十二世紀前半期的漢日對譯辭書《類聚名義抄》，¹ 此後的文獻，一直至現代日語聲調發展規律都已研究得相當清楚。

過去利用日漢對音構擬漢語古調值的學者有：小西甚一 (小西 1948)、金田一春彥 (金田一 1951)、賴惟勤 (賴 1951, 賴 1954) 等人，其中金田一氏和賴氏的著作論證詳審，貢獻最大。

金田一氏參考下列四類材料擬定了唐代漢語調值：

1 《類聚名義抄》是彙集幾種材料解釋漢語的音義書，它所記錄的日本漢音其本反映唐代北方音。《類聚名義抄》始終沒有刻本，現在能看到的抄本主要有兩個系統：(甲) 原本系統：僅有“圖書寮本” (殘卷)；(乙) 廣益本系統：重修於一一八〇年以前，以“觀智院本”為代表。(乙) 系的過錄本、增訂本比較多。

(一) 現代日語京都方言裡漢語借字所反映的聲調調值。調查對象限於「吳音」、「漢音」系統詞彙。

(二) 日本真言宗所傳的「聲明(佛教歌讚)」曲調和字調的關係。真言「聲明」的主要部分是唐代佛樂的遺音。

(三) 《類聚名義抄》所收日語詞彙，在每個音節旁邊，利用「聲點(古代日本人學習漢語聲調時用的符號，類似於圈發)」注上了聲調調值。通過這些詞彙在現代日語方言中的調值的比較研究，可以構擬每種「聲點」所代表的音高。

(四) 日本古典文獻所記載的，有關漢語聲調調值的文字描寫。²

據金田一氏的分析，(一)至(四)的構擬調值基本一致。與之同時，賴惟勤從事日本天台宗「聲明」的研究，經過更嚴密的論證程序，得到了和金田一氏非常接近的結論。下面六調類系統的唐代古調值擬音引自賴 1951，³ 賴文用曲線描寫調值，此處改用五度標調法。

| | | | |
|----------|----------------|----------|----|
| 1 平聲輕(清) | 53 | 2 平聲重(濁) | 21 |
| 3 上聲輕(清) | 45 | | |
| 5 去聲輕(清) | 15 (包含上聲重·去聲重) | | |
| 7 入聲輕(清) | 5 | 8 入聲重(濁) | 2 |

金田一、賴二位的成果證實了漢日對音在漢語聲調古調值構擬上的有效性。本文作者試圖運用金田一氏(三)的方法，利用十六世紀前期日語詞彙的漢字音譯，考察明代沿海地區吳語的聲調調值。

1. 資料說明

明代，特別嘉靖時期，主要在長江以南沿海地區常有倭寇(日本海盜)侵

2 在這類記載中《悉曇藏》的描寫最為出名。有坂 1936 把它解釋得很清楚。

3 日本漢字音資料所傳的漢語聲調調類有幾種系統，這差別很可能由於方言、時代等來歷的不同。金田一氏除六調類以外還擬出了四調類系統、八調類系統的調值。小西甚一的構擬調值跟金田一氏稍有不同(小西 1948)，只是小西氏的論證程序不如金田一氏嚴密，依據的材料也不很充足。

擾，因而出版了許多介紹日本以及其語言的書籍，統謂之“倭寇史籍”。其中最早的一本是定海人薛俊所著的《日本考略》，明嘉靖二年（公元一五二三年）初刊。⁴ 此書有介紹日本詞彙的“寄語略”，或稱《日本寄語》（以下簡稱《寄語》）。

明代的日語對音資料中，《華夷譯語》中的一種《日本譯語》（以下簡稱《譯語》）最爲有名。《譯語》依據明代官話選擇對音漢字，可以視爲官話系對音資料。

倭寇史籍所依據的漢語不是官話，而是吳語。⁵ 這是因爲江浙沿海地區居民最受倭寇侵擾的緣故。《日本考略》出版的那一年，在寧波發生了一起非常劇烈的爭亂，就是日本本州島西部的一個諸侯，大內(Ōuchi)氏派到中國的使節宗設和宋素卿之間的糾紛引起的“寧波之亂”。這次亂事之後，薛俊更感到防備倭寇的必要，在一五三〇年將《日本考略》重刻出版。⁶

明代《日本考略》以後，包含詞彙部分（寄語）的倭寇史籍中較重要的有：

（一）《日本一鑑》：鄭舜功撰，嘉靖末（一五六五～六年）出版，

（二）《日本風土記》：撰人未詳，約萬曆二十年（一五九二年）出版。

《日本一鑑》的體例如下：先給日語每個字母（假名）選定一個對音漢字，原則上利用這些漢字記音。

《日本風土記》有數量很豐富的詞和日本詩歌譯注，作爲語言資料，價值很大。在選擇注音漢字時，比較注意日本假名和漢字的對應關係，盡量使用同一漢字對譯各個假名，但不如《日本一鑑》嚴格。

4 鄭餘慶《日本國考略引》，云：薛生俊者，學務博，行務修，恆曰：“孝親忠君，學者分內事”。雖未偶於時，而事理世故，蓋諸之素矣。乃命爲日本考略若干卷，誠有裨於邊防也。捐俸壽諸梓。……

5 長田夏樹1965指出：倭寇史籍所依據的語言是吳語。本文作者曾經分析過《風土記》音系（赤松1988），論證了《風土記》反映當時吳語（可能是浙北沿海地區吳語）。

6 《四庫全書總目》卷十六史部地理類存目七，《日本考略》提要云：薛定海人。嘉靖二年，日本國使宗設來貢，抵寧波。未幾宋素卿等亦至，互爭真偽，自相殘殺，所過州縣大肆焚掠，浙江瀕海之地，人民苦之。俊因纂輯是書，大略言防禦之事爲多，而國土風俗亦附入焉。

《日本考略》唯有重刊本系統。本書只存于日本。寧波天一閣舊藏，今佚。

《寄語》不太注意這種用字上的規範，看來注音的基本態度是怎樣聽就怎樣記。因此《寄語》的注音漢字表面上看來似乎很雜亂、缺乏固定的原則。但若從別的角度來說，卻可能反映當時的實際口語，可以說是很有價值的語言資料。但是，由於沒有按照固定的原則注音，不易還原成日語詞，考察時須加以小心。

《寄語》計有三六三個日語詞，約有四二六條注音漢字組（有時一個日語詞有兩條注音），現在還不能還原的有八二條。本文從其他的三四四條中，選擇了用兩個漢字或三個漢字來注音的二一二條注音字組，把它作為考察注音漢字聲調和日語聲調之間關係的對象。這些字組代表日語二至四音節詞。這些由少數音節構成的日語詞，其調型模式比較穩定，容易追溯聲調的演變過程。

2. 十六世紀日語音系簡介

十六世紀（相當於日本室町時代）日語音韻系統可根據基督教傳教士所編的辭書、語法書以及朝鮮人所編的日語課本，重建如下。⁷ 下面按照五十音圖的次序舉其擬音。

〔洪音〕清音

| | | | | |
|------|------------|------------|------|------|
| あ a | い i | う u | え e | お o |
| か ka | き ki | く ku | け ke | こ ko |
| さ sa | し fi | す su | せ fe | そ so |
| た ta | ち ti → tʃi | つ tu → tsu | て te | と to |
| な na | に ni | ぬ nu | ね ne | の no |
| は ha | ひ fi | ふ fu | へ he | ほ fo |
| ま ma | み mi | む mu | め me | も mo |
| や ja | | ゆ ju | | よ jo |

7 傳教士所編的資料有《日葡辭書》（1603-1604年）、《日本文典》（1632年）等。朝鮮語對音資料有《伊呂波》（1492年）、《捷解新語》（約1628年）等。

ら ra り ri る ru れ re ろ ro

わ wa

濁音

が ga ぎ gi ぐ gu げ ge ご go

ざ za じ ji ず zu ぜ ze ぞ zo

だ da ぢ di → dji づ du → dzu で de ど do

ば ba び bi ぶ bu べ be ぼ bo

半濁音

ぱ pa ぴ pi ぷ pu ぺ pe ぽ po

〔細音〕清音

きゃ kja きゅ kju きょ kjo

しゃ fja しゅ fju しょ fjo

ちゃ tfja ちゅ tfju ちょ tfjo

にゃ nju にゅ nju にょ njo

ひゃ ϕja ひゅ ϕju ひょ ϕjo

みゃ mja みゅ mju みょ mjo

濁音

ぎゃ gja ぎゅ gju ぎょ gjo

じゃ zja じゅ zju じょ zjo

ぢゃ d3ja ぢゅ d3ju ぢょ d3jo

びゃ bja びゅ bju びょ bjo

半濁音

ぴゃ pja ぴゅ pju ぴょ pjo

説明：①エ段 (/e/ 系列) の實際音値恐爲 [-je]，至少比 [e] 稍高。

②オ段 (/o/ 系列) 洪音の實際音値爲 [-uo]。

③濁音輔音前有 initial glide の鼻冠音。比如 [g-] 前帶 ŋ，[d-] 前帶 n，[b-] 前帶 m 等，根據一些文獻的記載，可以推斷這種鼻冠音在實際口語中往往失落。

④除了上面所舉以外，還有 [o:] [ɔ:] [u:] [ju:] [jo:] 等長音。用古假名分別記成：「おう或おお」「あう」「うう」「いう」「やう」「えう」。

- ⑤「ち」「つ」「ぢ」「づ」的輔音原是塞音，如 [ti] [tu] [di] [du]，在《寄語》成書的室町時代開始變為塞擦音 [tʃi] [tsu] [dʒi] [dzu]，所以必須考慮兩種音值。表中→表示其變化方向。
- ⑥「は」行（/ɸ-/系列）輔音也開始從唇音 ɸ- 變為喉音 h-，但是 ɸ- 依然最普遍，《寄語》中注音漢字基本上用非組聲母字注「は」行音的，在此姑且不採用 h-。不過《寄語》中有少數用曉母、溪母字來注「は」行音的，說明在《寄語》反映的日語音系里「は」行音很可能已經開始喉音化。

3. 《寄語》反映的漢語音系的特點

首先要討論《寄語》注音漢字所依據的漢語音系。材料是能還原的三四四條注音漢字。日語詞的還原基本依據《日本寄語の研究》（1965年，京都大學文學部國語學國文學研究室編）的成果，但是有一詞本文作者認為錯誤，似應改正：

蓆 不奴 ふる [ɸu ru] （《日本寄語の研究》）→ぼろ [bo ro]
這是由於“不”字的日本漢字音爲ふ [ɸu] 而引起的錯誤。

下面把主要特點一一列出來，加以說明。

(1) 用古全濁聲母字對日語濁音

《寄語》對日語濁音時，主要選擇古全濁聲母字。下面舉數例：條目下所列的是注音漢字、日語以及日語音值。注音漢字中下加_爲古全濁聲母字，（ ）中記明其聲母。

- | | | | |
|-----|--------------------|-------|----------------|
| ①風 | 加 <u>前</u> （古從母） | かぜ | [ka ʔʒje] |
| ②孩 | 歪爛 <u>鼻</u> （古竝母） | わらんべ | [wa ra m ʔbje] |
| | | 或 わらべ | [wa ra ʔbje] |
| ③愛惜 | 搖路扛 <u>蒲</u> （古竝母） | よろこぶ | [jo ro ko ʔbu] |
| ④死 | 身 <u>大</u> （古定母） | しんだ | [ʃi n ʔda] |
| ⑤鑰匙 | 坑 <u>其</u> （古群母） | かぎ | [ka ʔgi] |
| ⑥麝香 | 射 <u>哥</u> （古船母） | じやかう | [ʒja kɔ:] |

- ⑦筆 粉地（古定母） ふで [ɸu ˈdʲe]
 ⑧香 干牌水（古竝母） かんぱし [ka m ˈba ʃi]
 或かうばし [kɔː ˈba ʃi]

用古全濁聲母字對日語濁音是倭寇史籍共有的特點，與《譯語》等官話系對音資料不同（請參看拙文赤松 1988）。保留古全濁聲母是現代吳語音系的主要特點之一，明代必亦如是。下面舉出《寄語》《譯語》《風土記》的對照表。《寄語》的例子雖少，但能看出有與《風土記》同樣的傾向。

〔表一〕

說明：①表中說「其他位置」表示非首字的位置。

②在古日語，濁音不在首字位置出現，《寄語》的時代也主要在非首字位置出現。

③日語濁音有時會像不送氣清音，因而除了全濁音以外，用全清音來注音の場合較多。

④依據沒保留全濁聲母的音系注音的《譯語》，無法用全濁聲母時而用全清聲母字、甚至用次清聲母字來注日語濁音，不過《寄語》、《風土記》都主要用全濁聲母字或者全清聲母字來注音。

| 注日語濁 音的漢字 聲母種類 | 《寄語》 | | | 《譯語》 | | | 《風土記》 | | |
|----------------------|--------|------|------|--------|----|------|--------|-----|------|
| | a | | a/d | b | | b/e | c | | c/f |
| | 字組首字 | 其他位置 | (%) | 首字 | 其他 | (%) | 首字 | 其他 | (%) |
| 古全清 | 2 | 22 | 33.3 | 8 | 61 | 67.0 | 1 | 32 | 13.3 |
| 古次清 | 2 | 1 | 4.1 | 1 | 13 | 13.6 | 0 | 8 | 3.2 |
| 古全濁 | 6 | 38 | 61.1 | 3 | 10 | 12.6 | 41 | 130 | 68.7 |
| 古次濁 | 0 | 1 | 1.5 | 3 | 4 | 6.8 | 9 | 28 | 14.9 |
| 計 | 10 | 62 | / | 15 | 88 | / | 51 | 198 | / |
| 計 | 72 (d) | | 100 | 103(e) | | 100 | 249(f) | | 100 |

(2) 古蟹攝一二等韻、古止攝合口韻及古效攝韻的單元音化

舉例：“ ”表示古蟹攝一二等字、“--”表示古止攝字、“=”表示古效攝字

- ① 雨 挨迷 あめ [a mje]
 ② 霜 碎滿 しも [ʃi mo]

- | | | | | |
|---|-----|------|------|-----------------------------|
| ③ | 夜 | 搖落 | よる | [jo ru] |
| ④ | 明 | 挨介水 | あかし | [a ka ʃi] |
| ⑤ | 山 | 耶賣 | やま | [ja ma] |
| ⑥ | 小廝 | 歪皆水 | わかしゅ | [wa ka ʃju] 或わかし [wa ka ʃi] |
| ⑦ | 老實人 | 埋骨多 | まこと | [ma ko to] |
| ⑧ | 哭 | 乃古 | なく | [na ku] |
| ⑨ | 松 | 埋止 | まつ | [ma tsu] |
| ⑩ | 甲 | 大買路 | どうまる | [ˈdo:ma ru] |
| ⑪ | 中刀 | 歪計柴需 | わきざし | [wa ki ˈza ʃi] |

古蟹攝一二等字、古止攝合口韻字及古效攝字等中古音擬爲複合元音，現代吳語中多爲開口單元音。用吳語讀上面例詞，跟日語實際音非常接近，而跟官話差距比較大。

下列蘇州話、寧波話都依據趙元任 1928，北京話依據『新華字典』。

| 日語 | 蘇州話 | 寧波話 | 北京話 |
|------------------|--------------|--------------|----------------|
| ① [a mje] | umi | a mi | ai mi |
| ② [ʃi mo] | se mø | sei mu | sui man |
| ③ [jo ru] | iæ lɔ? | iə lɔ? | yao luo |
| ④ [a ka ʃi] | ʊ kiʊ sɿ | a kie sɿ | ai jie sui |
| ⑤ [ja ma] | iʊ mʊ | ia ma | ye mai |
| ⑥ [wa ka ʃju] | wʊ kʊ sɿ | ua ka sɿ | wai jie sui |
| ⑦ [ma ko to] | mʊ kuə? təu | ma kuə? təu | mai gu duo |
| ⑧ [na ku] | nʊ kəu | na ku | nai gu |
| ⑨ [ma tsu] | mʊ tsɿ | ma tsɿ | mai zhi |
| ⑩ [ˈdo:ma ru] | dəu mʊ ləu | dəu ma ru | da mai lu |
| ⑪ [wa ki ˈza ʃi] | wʊ tɕi zʊ si | wa tɕi za si | wai ji chai xu |

②的「滿」字對日語「も [mo]」的例子又表示山攝韻鼻音韻尾脫落的現象，也與現代吳語的特點相通。

(3) 梗攝二等開口韻對ア段 (/a/ 系列) 音。

舉例：

- | | | | | |
|---|-----|------|--------|----------------|
| ① | 鏡 | 坑皆彌 | かがみ | [ka ŋga mi] |
| ② | 鑰匙 | 坑其 | かぎ | [ka ŋgi] |
| ③ | 紅銅 | 鶯更揩尼 | あかがね | [a ka ŋga nje] |
| ④ | 外甥 | 萌哥 | まご | [ma ŋgo] |
| ⑤ | 多吃了 | 前行哥 | ぜんあぎょう | [ʒjen a ŋgio:] |

這些梗攝二等開口韻對應後接濁音（音節前面帶鼻冠音）的日語ア段，反映吳語梗攝二等開口韻白讀音讀為 [-aŋ] 韻母的現象。

(4) 古匣母字對日語ア、ヤ、ワ行 (/0-/， /j-/， /w-/ 系列) 音。

舉例：

- | | | | | |
|---|----|-----|-----|------------|
| ① | 買 | 加和 | かおう | [ka uo:] |
| ② | 換 | 皆賀 | かう | [ka u] |
| ③ | 多有 | 何何水 | おおし | [wo wo ʃi] |
| ④ | 鹽 | 失河 | しお | [ʃi wo] |
| ⑤ | 四 | 學子 | よつ | [jo tsu] |
| ⑥ | 八 | 效子 | やつ | [ja tsu] |
| ⑦ | 打 | 胡子 | うつ | [u tsu] |

(5) 二等韻見系字聲母顎化

一些日語對音資料中也能發現二等韻見系字聲母開始顎化的跡象，比如：

《譯語》

- | | | | | |
|---|----|------|-------|----------------|
| ① | 經 | 交 | きやう | [kɕɔ:] |
| ② | 念經 | 交約密 | きやうよみ | [kɕɔ: jo mi] |
| ③ | 今日 | 交哇 | けうは | [kɕɔ: wa] |
| ④ | 椅 | 交谷祿谷 | きよくろく | [kɕo ku ro ku] |

《風土記》

- | | | | | |
|---|----|-----|--------|------------------|
| ① | 廳 | 甲古廳 | きやくでん | [kja ku ˚den] |
| ② | 客人 | 價古首 | きやくしゅ | [kja ku ʃju] |
| ③ | 女裙 | 加幅 | きやふ | [kja ɸu] |
| ④ | 牆 | 交嘴石 | きやうついじ | [kjoː tsu i ˚ʒi] |

不過在《寄語》中找不到類似的例子。官話中已經開始的二等韻見系字聲母顎化現象恐怕在吳語中還不普遍。《風土記》有朕兆，也許是由於它的成書年代比《寄語》稍後，或反映吳語文讀音，而《寄語》反映白讀音。

(6) 多用入聲

《寄語》入聲字用得較多。但是用在末位的很少，大部分作為非末位。說明《寄語》中漢語音系的入聲字是與現代吳語類似的短促音，可能韻尾帶有喉塞音-ʔ。詳細討論見後。

(7) 其他問題

以上(1)至(4)的特點說明《寄語》的音系基礎很可能就是吳語，特別是薛俊的原籍定海一帶的吳語。但是有一點需要解釋：即在《寄語》的注音漢字中，偶有看到n-, l-相混的情況。現在浙江省武義等地雖然有這兩類聲母相混的現象，⁸ 但台洲片、明州片等其他絕大部分的吳語一般都能區分。舉幾個《寄語》中的相混例子：

- | | | | |
|----|-----|-----|------------|
| 殺 | 其奴 | きる | [ki ru] |
| 徒弟 | 加食難 | かしら | [ka ʃi ra] |

不過，大多數的注音漢字把n-, l-分辨得很清楚，兩類相混的是少數例外。n-和l-發音部位相同，只在發音方法不同。

8 《浙江吳語分區》p.23, p.28。

4. 《寄語》注音漢字反映的明代吳語聲調

通過對上文《寄語》注音漢字所依據的漢語音系的討論，我們了解到《寄語》的音系基礎與吳語音系相同。下面，討論日語聲調和漢語聲調之間的對應關係。

(1) 《寄語》成書時的日語聲調

聲學上，日語聲調雖然具有高低的對立而且擔負著辨義功能，但它的音高模式屬於所謂“音階型”，只能通過兩個以上音節之間相對的高低變化來區別調型，很少出現一個音節具備曲折高低等絕對調值的情況。這一點跟漢語的差別較大。

日語聲調，在十三世紀末至十五世紀末之間由古代聲調系統變為近世聲調系統，⁹ 兩種系統之間最主要的不同是古代的低平調（〔__〕型等，詳見下文）變為高低調（〔__〕型等）。《寄語》初刻本刊在一五二三年，但是編者收集日語詞彙的年代必早於此。《寄語》可能反映日語聲調體系的變化將要完成或剛完成時的尚不穩定的狀態。所以我們不得不同時考慮古代和近世兩種聲調系統以進行分析。

關於《寄語》的日語音系基礎，書中沒有明確的記載。有些倭寇史籍、譬如《風土記》的日語詞彙包含許多九州方言的成分，可以推斷發音人一定受到九州方言影響。例如：

- | | | | | |
|---|----|-------|-------|------------------|
| ① | 黃 | 吉乃 | きな | [ki na] |
| ② | 善人 | 搖革許多 | よかひと | [jo ka ɸi to] |
| ③ | 河 | 伏宿革一潔 | ほそかいけ | [ɸo so ka i kje] |

詳見拙文〈日本風土記の基礎音系〉（赤松 1988），此不贅言。

但是《寄語》中找不出九州方言的詞彙或詞尾變化。而能發現不少反映京都

9 指《補忘記》反映的日語聲調。

話特點的條目：

- | | | | |
|------|-----|------|--------------------------|
| ① 弟 | 阿多多 | おとと | [wo to to] |
| ② 夜 | 搖撒里 | よさり | [jo sa ri] |
| ③ 還了 | 姑也數 | かやす | [ka ja su] |
| ④ 不好 | 由無奈 | ようない | [jo: na i] 或 [jo u na i] |

京都話在當時是日本公認的通語，例如葡萄牙傳教士集體編寫的《日葡辭書》（慶長八年〔1603年〕刊）也承認其標準語的地位。從聲調方面來說，日語和漢語一樣，有較明晰的歷史以及很嚴整的方言上的方言對應關係。因此，下文把畿內方言（嚴格地說是京都話）作為《寄語》的音系基礎，進行分析。

十六世紀日語的聲調系統，可以參照前賢根據日僧觀應所著的佛經音義書《補忘記》¹⁰ 歸納出來的調型模式。這部書反映室町時代末期（約十六世紀末）的京都話音系，是跟《寄語》同期的材料。關於一些《補忘記》不收的詞條，參考了《日本國語大辭典》的京都話聲調記音及古代調型擬音。該辭典的聲調部分由金田一春彥等日語聲調專家審定，基本可信，在目前能利用的材料中規模最大。

按照第一音節的高低，京都話聲調的全部調型可以分為“高起式”和“低起式”兩種。這兩種調型在日語聲調的辨義功能上是最重要的因素。高起式為高調起頭，低起式為低調起頭。

京都話聲調調型有下面幾種類型：

- ① 二音節詞彙 ●表示高音、○表示低音、◎表示下降調

高起式聲調… a₂ ●● { — — } b₂ ●○ { — _ }

低起式聲調… c₂ ○● { _ — } d₂ ○◎ { _ \ }

(c₂ ○○ { _ _ })，古代聲調)

10 有貞享本（1687年刊）和元祿本（1695年刊）。收錄出現在佛經中的難讀詞和整段的佛教論議文（問答文），詞彙和文章旁邊逐字附有叫作〈節博士〉的聲調符號。該書刊刻年代稍晚，但反映室町時代末期的聲調系統。服部四郎（服部1942）、金田一春彥（金田一1942）皆有研究論文。

即近世二音節詞彙聲調有四調，古聲調有五調。

②三音節詞彙

高起式聲調… a₂ ●●● [— — —]

b₂ ●○○ [— — —] 或 ●●○ [— — —]

(實際上是全漸降調，即 [— — —] 調。)

低起式聲調… c₃ ○○● [— — —] d₃ ○●○ [— — —]

(e₃ ○○◎ [— — —]，古代聲調)

(f₃ ○○○ [— — —]，古代聲調)

(g₃ ○●● [— — —]，古代聲調)

即近世三音節聲調有五調，古代有八調。

二音節、三音節中 a、b 調出現得比較多，d 調最少。日語四音節詞彙，在《寄語》注音兩字、三字組中較少見，此不贅言。

(2) 平聲字和入聲字多用作前字，上、去聲則多用作後字。

用漢字兩字組音譯日語詞的共有一三一條。表二按照聲調的不同，統計各調類字出現的情形。

古濁聲母字用爲前字的比較少，因爲日語固有詞彙原無濁音起頭的。在《寄語》成書的室町時代已經出現一些，不過數量依然較少。用爲字組首字的古濁聲母字，大部分是對譯ナ、マ、ヤ、ラ行 (/n-/、/m-/、/j-/、/r-/ 系列) 的次濁聲母字。

〔表二〕

| | | 前 字 | | 後 字 | |
|---|-------|-------|------|-------|------|
| 平 | 古清聲母 | 4 1 | 7 2 | 1 8 | 5 2 |
| | 古次濁聲母 | 2 1 | | 2 4 | |
| | 古全濁聲母 | 1 0 | 54.9 | 1 0 | 39.7 |
| 上 | 古清聲母 | 1 1 | 1 2 | 1 5 | 2 6 |
| | 古次濁聲母 | 1 | | 1 0 | |
| | 古全濁聲母 | 0 | 9.2 | 1 | 19.8 |
| 去 | 古清聲母 | 9 | 1 6 | 1 7 | 4 7 |
| | 古次濁聲母 | 4 | | 2 4 | |
| | 古全濁聲母 | 3 | 12.2 | 6 | 35.9 |
| 入 | 古清聲母 | 2 2 | 3 1 | 3 | 6 |
| | 古次濁聲母 | 6 | | 2 | |
| | 古全濁聲母 | 3 | 23.7 | 1 | 5.4 |
| 計 | | 1 3 1 | 100 | 1 3 1 | 100 |

注：小字表示占總數的比率。

(3) 兩字組第一字的特點

表三列出兩字組注音漢字中前字的調類和日語聲調調型模式的對應關係。橫線—左邊的“古清平”等代表兩字組前字的調類。表上的數字按日語音系的調類統計。表四列出根據古代日語音系進行調整後的數字，表上的低低調是古代特有的聲調。還有，因為有少數日語詞可能取兩種聲調形式（請看【資料】的前字為陰入聲的部分），所以統計後得了*132、**133兩個跟表二上的總數131不一致的數碼。

〔表三〕

| 前字 | 高起式 | | | | 低起式 | | | | 計 |
|------|-----|----|----|-------|-----|----|----|-------|------|
| | 高平 | 高低 | A | A/C | 低高 | 低降 | B | B/C | |
| 古清平— | 15 | 21 | 36 | 87.8% | 4 | 1 | 5 | 12.2% | 41 |
| 古濁平— | 7 | 12 | 19 | 61.3 | 11 | 1 | 12 | 38.7 | 31 |
| 古清上— | 3 | 3 | 6 | 54.5 | 4 | 1 | 5 | 45.5 | 11 |
| 古濁上— | 1 | 0 | 1 | — | 0 | 0 | 0 | — | 1 |
| 古清去— | 4 | 3 | 7 | 77.8 | 2 | 0 | 2 | 22.2 | 9 |
| 古濁去— | 2 | 3 | 5 | 71.4 | 2 | 0 | 2 | 28.6 | 7 |
| 古清入— | 7 | 11 | 18 | 78.4 | 2 | 3 | 5 | 21.6 | 23 |
| 古濁入— | 1 | 4 | 5 | 55.6 | 2 | 2 | 4 | 44.6 | 9 |
| 計 | 40 | 57 | 97 | 73.5 | 27 | 8 | 35 | 26.5 | 132* |

〔表四〕

| 前字 | 高起式 | | | | 低起式 | | | | | 計 |
|--------------|---------|---------|----------|---------------|--------|--------|--------|---------|---------------|----------|
| | 高平 | 高低 | A' | A'／C' | 低高 | 低降 | 低低 | B' | B'／C' | C' |
| 古清平— 古濁平— | 15 7 | 21 5 | 36 12 | 87.8% 38.7 | 4 9 | 1 3 | 0 7 | 5 19 | 12.2% 61.3 | 41 31 |
| 古清上— 古濁上— | 3 0 | 1 1 | 4 1 | 36.3 — | 4 0 | 1 0 | 2 0 | 7 0 | 63.7 — | 11 1 |
| 古清去— 古濁去— | 4 2 | 0 3 | 4 5 | 44.4 71.4 | 2 2 | 0 0 | 3 0 | 5 2 | 55.6 28.6 | 9 7 |
| 古清入— 古濁入— | 7 1 | 4 2 | 11 3 | 45.8 33.3 | 3 1 | 3 3 | 7 2 | 13 6 | 54.2 66.7 | 24 9 |
| 計 | 39 | 37 | 76 | 57.1 | 25 | 11 | 21 | 57 | 42.9 | 133** |

高平指●●或●●●、高低指●○或●○○、低高指○●或○○●、低降指○◎或○●○或○○◎、低低指○○或○○○。四音節以上的詞彙的調類也可以類推。

從表三、表四看來，值得注意的是：如果字組首字屬於古清平，日語詞的聲調多為高起式；屬於古濁平，則多為低起式。因為例子不很豐富，作為統計數據也許有些偏差，但是大致上的趨向可以看得出來。特別要注意的是前字為古濁平時的●○型，表三有十二例，不過表四只有五例，即其十二例的大部分由古代的低平○○型變化而來的。所以按古代聲調計，則高起式只占 38.7%，還是低起式多。而古清平●○型原來就是●○型，兩者的性質不一致。

古上聲和古去聲作為注音漢字組首字的場合不很多，暫時不能據以作出甚麼判斷。

古清入聲作為首字時，相對的日語聲調多取高起式聲調。這點跟古清平有同一的傾向，不過考慮到古代聲調時便發現高起式聲調減至十一例，低起式聲調反而增加至十三例。這可能是由於短促的入聲字在音高上比舒聲字不穩定的緣故。古濁入聲作為首字例子不多，看不出有甚麼特別的趨勢。

總之，古清平的音域高，也有不少高降調，所以其調形可能是高平調或稍降的調。古濁平的音域比古清平低，它在首字時，相對的日語聲調多取平調（也包括一些高平調），所以其調形可能是低平調。入聲還保留喉塞音韻尾。古清入在音域上往往跟古清平相似，不過考慮到古聲調時，這個趨向就變得模糊一點，不能決定其音高特徵。因為其韻尾有喉塞音，所以音高上沒有平聲穩定。

(4) 注音漢字所反映的連調相似的現象

下面討論注音漢字的聲調和注音漢字組中的位置之間的互相關係。

先列出按後字聲調統計的表，用括號表示的是按日語古聲調統計的數碼。

從表五看來，漢語後字的聲調沒有影響到日語聲調形式，在此，入聲很少用作後字，上聲去聲則用得很多，這一點值得注意，其他明顯的傾向未見。因此似乎可以說：《寄語》上日語詞的聲調會受注音漢字組前字聲調的影響。

〔表五〕

| 前字 | 高起式 | | | | 低起式 | | | | 計 |
|-----|--------|--------|--------|----------|--------|------------|--------|----------|-----|
| | 高平 | 高低 | A | A / C % | 低高 | 低降(低低) | B | B / C | |
| 古清平 | 8(8) | 6(4) | 14(12) | 77.8(67) | 2(2) | 2(2) (2) | 4 (6) | 22.2(33) | 18 |
| 古濁平 | 11(11) | 15(8) | 26(19) | 76.4(56) | 5(4) | 3(4) (7) | 8 (15) | 23.6(44) | 34 |
| 古清上 | 4(3) | 5(4) | 9(7) | 69.2(54) | 4(3) | 0(1) (2) | 4 (6) | 30.8(46) | 13 |
| 古濁上 | 3(3) | 5(2) | 8(5) | 72.7(45) | 3(3) | 0(0) (3) | 3 (6) | 27.2(55) | 11 |
| 古清去 | 3(3) | 11(7) | 14(10) | 82.3(59) | 2(2) | 1(1) (4) | 3 (7) | 17.7(41) | 17 |
| 古濁去 | 12(12) | 10(8) | 22(20) | 70.9(65) | 9(8) | 0(1) (2) | 9 (11) | 29.1(35) | 31 |
| 古清入 | 0(0) | 4(2) | 4(2) | 100 (50) | 0(1) | 0(0) (1) | 0 (2) | 0 (50) | 4 |
| 古濁入 | 1(0) | 1(1) | 2(2) | 50 (50) | 1(1) | 1(1) (0) | 2 (2) | 50 (50) | 4 |
| 計 | 42(41) | 57(36) | 99(77) | 75.0(58) | 26(24) | 7(10) (21) | 33(55) | 25.0(42) | 132 |

入聲字多數用在字組的非末位，很少在末位出現。這比較容易解釋：日語固有詞彙（不包括漢語借詞）收於促音的極少，所以入聲字不易用在末位。關於多用在非末位的現象也許在現代吳語入聲的特點中能發現解釋的線索。即現代的吳語入聲韻尾「單字重讀時有一點[ʔ]音，但在句中差不多都沒有」，¹¹ 因而多用為非末位。

上聲、去聲作為後字的各有二十四例、四十八例，比作為前字的十二例、十六例多得多。本文作者調查三字組的結果也相同：作為首字的各有七例、九例，非首字的卻有三十一例、四十三例。對這現象可能有兩種解釋：

a. 注音者不自覺地按照平上去入的次序排列注音漢字。

我們似乎應該考慮漢語造詞上的這種傾向。¹² 但是入聲字經常用為字組首字，豈非矛盾？

b. 聲調調值本身有差別。

上去聲很少出現在注音漢字組的首字位置上，而主要用在非首位。這現象也

11 趙元任 1928, p.39。

12 丁邦新 1975 指出：漢語在造複音節詞時，從古就有按照平上去入的次序排列漢字的傾向。周祖謨 1988 也有同樣的見解。

許由於如下原因：上去聲字作為字組的首字時，它的調值不適合表示日語聲調的調型；而作為第二成分及其後的成分，調值發生變化，用來對譯日語很相宜。衆所周知，現代北部吳語聲調系統多具有“首字決定連調調形”¹³的現象，甚至有如現代上海話的延伸型聲調，即首字覆蓋整個字組，使後字失去原有的調值。上面《寄語》的現象很可能反映吳語連調的這些特點。

本文作者大膽假設，上、去聲字的調值是非平調（包括曲折調、幅度比較大的昇調和降調），不適於對譯日語的“音階型”調型，因此《寄語》作者在注音時，前字盡量避免使用上去聲。

連調的發生與其詞結構的鬆緊有密切關係。所以不可把這種對音資料直接跟連調的問題聯在一起。不過後字受前字音調的影響，而顯現出與本調不同的音調現象是很可能存在的。例如現代紹興話的連調分為成詞和不成詞兩種（即廣用式和窄用式連調），即使不成詞的兩個音節，也有較鬆散的連調形式。¹⁴紹興話成詞連調形式很有意思：上、去聲本調雖然每個都是曲折調，但是上、去聲作為後字情況下，兩調都統合在高平、下降、低平三調。不能否定這樣的連調形式已在明代吳語中，特別《寄語》所依據的方言中存在的可能性。

關於這種首字決定的連調調形，在此引錢乃榮 1988 的幾個模式，作為參考：

c 型 無錫型（有無錫話、寧波話、黎里話、江陰話等）

c 型前重型的特點是：

- (1) 多數調類組合的調型是：前字定調，後字附著。前字能區別各調類地位，後字不論原來是甚麼單音調，全部跟在前字後面讀一個調。……
- (2) 在一些調類組合中，難以找出連讀調與單音調之間的關係，如陰平

13 參看湯珍珠等 1990，113 頁。可以說這個詞語即是司馬侃 (M. Sherard) 'tonal envelope' 的譯詞。

14 王福堂 1959，83 頁以下。關於這不成詞連調，五臺 1986 定義說：“一個以上語音詞的聲調，語音詞之間有短的停頓”。

單音調是 544，而“1X”卻是低調 21+23，但有些調類組合可以看出與單音調的關係，如陽平調是 14，而 2X 調是陽平調加上一個添補形式 31 低降調，這是連讀調中很常見的現象。……

d 型 上海型（有常州、蘇州、杭州、宜興、湖州等）

這種型式是延伸型。前字的聲調覆蓋後字音節，後字失去調子共用前調，連讀調同於單音調。

表六至表八選幾個與上述討論有關的現代吳語連調形式，作為參考。此表左端豎列是前字作為單字組的調類，上端橫行是後字作為單字組的調類。1 至 8 的數目字是調類代碼，1 代表陰平，2 代表陽平，餘類推。括號里的數目表示各個聲調的單字調調值。表中數目表示變調後的調值。如“1 + 2（前字陰平，後字陽平）”的變調調式是 33-231。

〔表六〕 紹興話（成詞）：資料依據王福堂 1959

| | -1(51) | -2(231) | -3(335) | -4(113) | -5(33) | -6(11) | -7(<u>45</u>) | -8(<u>12</u>) |
|-----------------|--------|---------|---------|---------|--------|--------|-----------------|-----------------|
| 1(51)- | 33-51 | | 33-55 | | | | 33- <u>55</u> | |
| 3(335)- | 11-51 | | 11-55 | | | | 11- <u>55</u> | |
| 5(33)- | 335-51 | | | | | | 335- <u>54</u> | |
| 2(231)- | 115-51 | | | | | | 115- <u>54</u> | |
| 4(113)- | 33-33 | | | | | | 33- <u>33</u> | |
| 6(11)- | 11-11 | | | | | | 11- <u>33</u> | |
| 7(<u>45</u>)- | 3-51 | | 3-55 | | | | 3- <u>55</u> | |
| 8(<u>12</u>)- | 1-51 | | 1-55 | | | | 1- <u>55</u> | |

紹興話（成詞：廣用式）及寧波話的連調是首字決定聲調的調形，曲折調的上去聲在後字位置上失去原調而變為簡單的平調或下降調。其連調模式與《寄語》注音字組的情形相類似。湖州話是延伸型的例子。

〔表七〕 寧波話：此表依據湯珍珠等1990。古濁上聲現在一部分歸陽平，大部分歸陽去。

表中A表示多數，B表示少數。

| | -1(53) | -2 (22) | -3 (34) | -4 | -5(44) | -6(13) | -7 (5) | -8(<u>12</u>) |
|-----------------|--------|---------|---------|---------|---------------|--------|--------|-----------------|
| 1-(53) | A44-53 | B44-55 | A 44-55 | B 44-53 | | | 44-5 | |
| 2-(22) | A22-53 | B22-44 | A 22-44 | B 22-53 | | | 22-4 | |
| 3-(34) | | A 44-31 | B 44-44 | | | | 44-2 | |
| 4- | | A 23-44 | B 23-31 | | | | 23-4 | |
| 5-(44) | | | 44-44 | | | | 44-4 | |
| 6-(13) | A22-44 | B22-53 | | 22-44 | | | 22-4 | |
| 7-(5) | A 4-31 | B 4-44 | 4-44 | | A 4-31 B 4-44 | | A 4-2 | B 4-4 |
| 8-(<u>12</u>) | A 2-44 | B 2-53 | 2-35 | | 2-44 | | 2-4 | |

〔表八〕 湖州話：資料依據赤松1991

| | 1(44)- | 2(12)- | 3(42)- | 4(31)- | 5(35)- | 6(24)- | 7(5)- | 8(<u>23</u>)- |
|-----------------|--------|--------|--------|--------|--------|--------|---------------|-----------------|
| 1(44)- | | | 44-44 | | | | 44-4 | |
| 2(12)- | | | 11-23 | | | | 11- <u>23</u> | |
| 3(42)- | | | 42-23 | | | | 42- <u>23</u> | |
| 4(31)- | | 33-11 | | 11-31 | | | 33-1 | |
| 5(35)- | | | 33-35 | | | | 33- <u>35</u> | |
| 6(24)- | | | 21-24 | | 21-53 | | 21- <u>24</u> | |
| 7(5)- | 3-55 | | 3-53 | | 5-23 | | 3- <u>53</u> | |
| 8(<u>23</u>)- | | | 1-44 | | 3-12 | | 1-4 | |

本章結論：

①平聲分爲陰陽兩調。

②如果陰平字在注音字組首字位置出現，跟它對應的日語詞的聲調多數屬於“高起式”。陽平在字組首字位置出現，日語詞多數屬於“低起式”。首字以外的注音漢字的聲調跟日語詞的聲調不相關。

③陰平的音域高，可能是高平或稍降的調，陽平的音域低，可能是低平調（或稍昇的調）。

④上聲、去聲有無陰陽調的區分，不清楚。但是上去聲字的用法有一個特點，即少用在注音字組的第一成分，多用在第二成分及其後的成分。我們已在②注意到，《寄語》注音漢字的調型可能是由字組首字決定的。據此設想，上、去聲是曲折調或某種非平調，不適合對譯日語音階型聲調；作為字組第二成分及其後的成分，失去原有的調型而變讀為平調。

⑤入聲音節末有喉塞音，但是在注音漢字組的末字以外的情況下，其喉塞音要微弱或失落。陰入聲字作為注音漢字首字時，日語聲調多為高起式。這一點跟陰平聲字相似，不過不如陰平明顯。

丁邦新 1984 根據現代吳語構擬的古吳語調值，跟上面①至④類似。其構擬為：

陰平 *55 陽平 *22 陰上 *35 陽上 *13 陰去 *42 陽去 *21 陰入 *55 陽入 *22

5. 有關明代聲調的文字記載

明人沈寵綏（吳江人）所著的《度曲須知》〈四聲批竅〉（崇禎十二[1639]年自序），說：

昔詞隱先生曰：“凡曲去聲當高唱，上聲當低唱，平入聲又當酌其高低，不可令混”。其說良然。然去聲高唱，此在翠字、再字、世字等類，其聲屬陰聲者，則可耳。若去聲陽字，如被字、淚字、動字等類，初出不嫌稍平，轉腔乃始高唱，則平出去收，字方圓穩。不然，出口便高揭，將被涉貝音，動涉凍音，陽去幾訛陰去矣。……又先賢沈伯時（按：宋沈義甫、吳江人）有曰：“按譜填詞，上去不宜相替，而入固可以代平，則以上去

高低迥異，而入聲長吟，便肖平聲，讀則有入，唱則非入。……”……人聲唱長，則似平矣。仰或唱高，則似去；唱低則似上矣。……

據此可以知道：明代唱曲時的入聲音高上很像平聲，惟有長短的差別；去聲分爲陰陽而高唱，上聲要低唱。

楊蔭瀏 1977 考察從明代發展起來的崑曲曲調，總結南曲每個聲調的唱法如下：

陰平聲：平，昇高或降低一二度後，回復原位。

陽平聲：平，低起，上行一二度。

上：低，甚低起上昇，可從甚低起連續上昇，亦可於第一低音後轉向更低一二度處急過後再上昇。

陰去：高，高起下行，可從甚高處連續下行，亦可於第一高音後轉向更高一二度處急過後再下行。

陽去：由低上跳後再下行。

陰入：同於陰平。

陽入：同於陽平。

當然唱曲和實際言語並不一致，清李漁（浙江蘭谿人，1611～約 1680 年）《閒情偶寄》卷二中〈慎用上聲〉也提到其中的差別：

平上去入四聲，唯上聲一音最別。用之詞曲，較他音獨低，用之賓白，又較他音獨高。

賓白比詞曲一定更接近於實際語言。據此，上聲的唱法不一定反映實際語言，但除了上聲以外基本反映了實際語言的調值。現代崑曲的唱法也不一定直接繼承明代唱法，不過還是有一定的參考價值。再參看上述四聲的唱法，就能作出如下的推斷：

（一）平聲分爲陰陽兩調，陰平是高調或稍降調，陽平是低調或稍昇調。

（二）平聲和入聲在音域上很類似，只在長短有差別。

（三）上聲和去聲的調值不同，不過都是曲折調。

這三點與前文指出的《寄語》反映的漢語聲調特點相比，相當類似。

（本文於民國八十二年二月十八日通過刊登）

文獻目錄

赤松祐子 (AKAMATSU Yuko)

1988 〈《日本風土記》の基礎音系〉，《國語國文》57-12，pp.1-44。

1991 〈湖州音系〉，《均社論叢》17（京都），pp.33-56。

有坂秀世 (ARISAKA Hideyo)

1936 〈悉曇藏所傳の四聲について〉，《音聲學協會會報》41，《國語音韻史の研究・增補新版》（三省堂）1957再收，pp.591-599。

趙元任

1928 《現代吳語的研究》，清華學校研究院印行。

陳寧萍

1985 〈寧波方言的變調現象〉，《方言》1985-1，pp.15-27。

丁邦新

1975 〈論語、孟子、及詩經中並列語成分之間的聲調關係〉，《歷史語言研究所集刊》47-1，pp.17-52。

1984 〈吳語聲調之研究〉，《歷史語言研究所集刊》55-4，pp.755-788。

遠藤光曉 (ENDO Mitsuaki)

1984 〈《翻譯老乞大・朴通事》里的漢語聲調〉，《語言學論叢》13，pp.162-182。

1988 〈《悉曇藏》の中國語聲調〉，《漢語史の諸問題》，京都大學人文科學研究所，pp.39-53。

方松熹

1987 〈舟山方言兩字組的連讀變調〉，《方言》1987-2，pp.116-123。

服部四郎 (HATTORI Shiro)

1942 〈補忘記の研究〉，《日本語のアクセント》，日本方言學會編中

木 津 祐 子

央公論社，pp.123-159。

1954-55 〈音韻論から見た國語のアクセント〉，原《國語研究》2-3，
《日本の言語學》第二卷音韻所收，pp.364-403。

1973 〈「音素」と「調素」と「アクセント素」〉，原《言語の科學》
4，《日本の言語學》第二卷音韻所收，pp.503-514。

平山久雄 (HIRAYAMA Hisao)

1972 〈客家桃源方言聲調調値の內的再構〉，《中國の言語と文學》，
鳥居久靖先生華甲紀念會編，pp.209-227。

1974 〈中國語閩南閩北祖方言の聲調調値〉，《文學哲學論文集》，東
京大學文學部研究報告，pp.191-248。

1975 〈廈門話古調値的内部構擬〉，*JCL* 3-1，pp.3-15。

1983 〈山東西南方言的變調及其成因〉，《アジア・アフリカ語の計數
研究》21，pp.59-81。

1984 〈江淮方言祖調値構擬和北方方言祖調値初案〉，《語言研究》
6，pp.185-199。

傅國通等

1985 《浙江吳語分區》，浙江省語言學會《語言學年刊》第三期方言專
刊。

忌浮 (寧繼福)

1986 〈《中原音韻》的調値〉，《語言研究》10，pp.99-108。

金田一春彦 (KINDAICHI Haruhiko)

1942 〈補忘記の研究續貂〉，《日本語のアクセント》pp.161-193。

1951 〈日本四聲古義〉，《國語アクセント論叢》，法政大學出版會，
pp.628-703。

1965 〈高さのアクセントはアクセントにあらず〉，原《言語研究》
48，《日本の言語學》第二卷音韻所收，pp.485-502。

小西甚一 (KONISI Jinichi)

- 1948 《文鏡秘府論考》研究篇下，大日本雄弁講談社，東京。

MEI, Tsu-lin (梅祖麟)

- 1970 'Tones and prosody in middle Chinese and the origin of the rising tone,' *HJAS* 30, p.86-110.
- 1977 'Tones and tone sandhi in 16th century Mandarin,' *JCL* 5-2, pp. 237-260.
- 1982 〈說上聲〉，《慶祝李方桂先生八十歲論文集》（《清華學報》14-1、2），pp.233-241。

長田夏樹 (OSADA Natsuki)

- 1965 〈《日本風土記》に於ける日本語のアクセント表記について〉，《久重福三郎先生・坂林一郎先生還曆記念中國研究》，pp.117-133。

Pulleyblank, E. G.

- 1978 'The nature of the Middle Chinese tones and their development to Early Mandarin,' *JCL* 6-2, pp.173-203.

錢乃榮

- 1988 〈吳語聲調系統的類型及其變遷〉，《語言研究》15，pp.63-80。
- 1990-92 〈古吳語的構擬〉（一）～（三），《開篇》7～9。

丘瓊蓀

- 1959 《白石道人歌曲通考》，音樂出版社，北京。

賴惟勤 (RAI Tsutomu)

- 1951 〈漢音の聲明とその聲調〉，《語言研究》17, 18 合併號，pp.1-47。
- 1954 〈丹陽方言と日本漢字音の聲調について〉，《お茶の水大學紀要》5，pp.65-80。

木 津 祐 子

湯珍珠等

- 1990 〈寧波方言（老派）的單字調和兩字組變調〉，《語言研究》18，
pp.106-117。

王福堂

- 1959 〈紹興話記音〉，《語言學論叢》3，pp.73-126。

五 臺

- 1986 〈關於“連讀變調”的再認識〉，《語言研究》10，pp.1-6。

楊蔭瀏・陰法魯

- 1957 《宋姜白石創作歌曲研究》，音樂出版社，北京。

楊蔭瀏

- 1977 《中國古代音樂史稿》下冊，人民音樂出版社，北京。

尉遲治平

- 1986 〈日本悉曇家所傳古漢語調值〉，《語言研究》11，pp.17-35。

游汝杰

- 1988 〈宋姜白石詞旁譜所見四聲調型〉，*JCL* 16-2，pp.246-263。

周祖謨

- 1988 〈漢語駢列的詞語和四聲〉，《周祖謨語言文史論集》pp.27-35。

資 料

注音漢字兩字組：數目字是調類代碼，1 代表古清平，2 代表古陽平，餘類推。

注音漢字組按照日語聲調調型排列的。日語聲調符號中，“平”代表平安時代聲調（古代聲調）。

1 —（前字爲古清平，以下同類）

| | | | |
|-----|--------|------------|-------------|
| 1 1 | 翁知「公」 | ●●おぢ | [o ˈdʒi] |
| 1 2 | 加和「買」 | ●●かおう | [ka o:] |
| 1 2 | 阿奚「孫」 | ●●おい | [o i] |
| 1 2 | 加前「風」 | ●●かぜ | [ka ˈʒje] |
| 1 2 | 歪羅「箒」 | ●●わらう | [wa rɔ:] |
| 1 4 | 依也「不要」 | ●●いや | [i ja] |
| 1 5 | 松計「杉」 | ●●すぎ ① | [su ˈgi] |
| 1 5 | 薰計「鬚」 | ●●ひげ | [ʰi ˈgje] |
| 1 2 | 揩尼「蟹」 | ●●かに | [ke ɲi] |
| 1 6 | 皆賀「換」 | ●●かう | [ka u] |
| 1 6 | 沙賴「碟」 | ●●さら | [sa ra] |
| 1 6 | 阿義「姪」 | ●●おい | [o i] |
| 1 6 | 加右「喚」 | ●●かゆ | [ka ju] |
| 1 6 | 蘇路「安排」 | ●●する | [su ru] |
| 1 2 | 新雷「親眷」 | ●●●●しんるい | [ʃi n ru i] |
| 1 4 | 多俟「遠」 | ●●○平●●◎とおし | [to: ʃi] |
| 1 1 | 花雞「箒」 | ●○○はうき | [ʰɔ: ki] |
| 1 1 | 宣哥「線香」 | ●○○○せんかう | [ʃe n kɔ:] |
| 1 2 | 收河「鹽」 | ●○しお | [ʃi o] |
| 1 2 | 疏煤「墨」 | ●○すみ | [su mi] |
| 1 2 | 科眉「米」 | ●○こめ | [ko me] |
| 1 2 | 揩眯「髮」 | ●○かみ | [ka mi] |
| 1 2 | 阿爺「父」 | ●○おや | [o ja] |
| 1 2 | 多奴「叫人」 | ●○との | [to no] |
| 1 2 | 加迷「紙」 | ●○かみ | [ka mi] |
| 1 4 | 烏馬「馬」 | ●○うま | [u ma] |
| 1 5 | 歪帶「綿」 | ●○わた | [wa ta] |
| 1 5 | 攸計「雪」 | ●○ゆき | [ju ki] |
| 1 5 | 天帝「天」 | ●○○てんち | [tje n ti] |
| 1 6 | 虛路「日」 | ●○ひる | [ʰi ru] |

| | | | |
|-----|--------|-----------|-------------|
| 1 6 | 他賣「珠」 | ●○たま | [ta ma] |
| 1 6 | 揩袂「紙」 | ●○かみ | [ka mi] |
| 1 6 | 非路「午」 | ●○ひる | [ɸi ru] |
| 1 6 | 身大「死」 | ●○○しんだ | [ʃi n ˈda] |
| 1 7 | 烏索「和尚」 | ●○○おしょう ② | [o ʃjo:] |
| 1 8 | 依石「石」 | ●○いし | [i ʃi] |
| 1 2 | 烏彌「海」 | ○●うみ | [u mi] |
| 1 4 | 烏理「瓜」 | ○●うり | [u ri] |
| 1 6 | 哥賣「獨樂」 | ○●こま | [ko ma] |
| 1 5 | 加計「寫字」 | ○◎かけ | [ka kje] |
| 1 4 | 刁老「和尚」 | ○○○●ちやうらう | [tʃjɔ: rɔ:] |

2 -

| | | | |
|-----|--------|------------|-------------|
| 2 1 | 彌沙「醬」 | ○●みそ | [mi so] |
| 2 2 | 前移「錢」 | ○●ぜに | [ʒe ni] |
| 2 2 | 其奴「殺」 | ○●きる | [ki ru] |
| 2 2 | 迷奴「氈衫」 | ○●みの | [mi no] |
| 2 2 | 浮泥「船」 | ○●ふね ③ | [ɸu nje] |
| 2 3 | 胡子「打」 | ○●うつ | [u tsu] |
| 2 3 | 埋止「松」 | ○●まつ | [ma tsu] |
| 2 6 | 何治「叔」 | ○●おぢ | [o ˈdʒi] |
| 2 8 | 搖落「夜」 | ○●よる | [jo ru] |
| 2 2 | 難皮「鑊」 | ○◎なべ | [na ˈbje] |
| 2 3 | 埋祖「等待」 | ○●平○◎まつ | [ma tsu] |
| 2 6 | 迷路「看」 | ○●平○◎みる | [mi ru] |
| 2 2 | 尤皮「指」 | ●○平○○ゆび | [ju ˈbi] |
| 2 2 | 眉眉「耳」 | ●○平○○みみ | [mi mi] |
| 2 4 | 磨米「荳」 | ●○平○○まめ | [ma mje] |
| 2 4 | 油米「弓」 | ●○平○○ゆみ | [ju mi] |
| 2 6 | 耶賣「山」 | ●○平○○やま | [ja ma] |
| 2 6 | 羊賣「山」 | ●○平○○やま | [ja ma] |
| 2 2 | 黃旗「扇」 | ●○○平○○○あうぎ | [ɔ: ʒi] |
| 2 1 | 萌哥「外甥」 | ●○まご | [ma ˈgo] |
| 2 5 | 搖做「四」 | ●○よつ | [jo tsu] |
| 2 5 | 華蓋「年少」 | ●○○わかい | [wa ka i] |
| 2 6 | 何路「有」 | ●○おる | [o ru] |
| 2 1 | 沈哥「沈香」 | ●○○○ぢんかう | [dʒi n kɔ:] |
| 2 1 | 明東「水」 | ●●みづ | [mi ˈdu] |
| 2 2 | 遊河「魚」 | ●●いお | [i o] |
| 2 2 | 羊其「羊」 | ●●やぎ | [ja ʒi] |

| | | | |
|-----|--------|-------------|-----------|
| 2 3 | 胡水「午」 | ●●うし | [u ʃi] |
| 2 6 | 移路「坐」 | ●●いる | [i ru] |
| 2 6 | 爲路「賣」 | ●●うる | [u ru] |
| 2 8 | 無六「賣」 | ●●うる | [u ru] |
| 3 — | | | |
| 3 1 | 挨身「足」 | ●○平○○あし | [a ʃi] |
| 3 3 | 豕豕「猪」 | ●○平○○しし | [ʃi ʃi] |
| 3 4 | 朽罔「雲」 | ●○くも | [ku mo] |
| 3 2 | 挨尼「兄」 | ○●(○◎)あに | [a ni] |
| 3 2 | 挨迷「雨」 | ○◎あめ | [a mje] |
| 3 5 | 解素「茶」 | ○●かす | [ka su] |
| 3 6 | 水路「羹」 | ○●しる | [ʃi ru] |
| 3 6 | 挨路「有」 | ○●ある | [a ru] |
| 3 1 | 子多「丈人」 | ●●●しうと | [ʃju: to] |
| 3 6 | 粉地「筆」 | ●●ふで | [ɸu ɳdje] |
| 3 6 | 嘔大「唱」 | ●●●うたう | [u tɔ:] |
| 4 — | | | |
| 4 3 | 乃古「哭」 | ●●平●○なく | [na ku] |
| 5 — | | | |
| 5 1 | 晒箕「酒」 | ●●さけ | [sa kje] |
| 5 2 | 亞尼「姉」 | ●●あね | [a nje] |
| 5 2 | 挨羅「好淫」 | ●●する | [su ru] |
| 5 3 | 付泥「星」 | ●●ほし 泥當作洗 ④ | [ɸo ʃi] |
| 5 2 | 意奴「狗」 | ●○平○○いぬ | [i nu] |
| 5 4 | 碎滿「霜」 | ●○平○○しも | [ʃi mo] |
| 5 5 | 恕恕「肉」 | ●○平○○しし | [ʃi ʃi] |
| 5 4 | 付魯「落雨」 | ○●ふる | [ɸu ru] |
| 5 6 | 快利「針」 | ○●はり | [ɸa ri] |
| 6 — | | | |
| 6 1 | 義西「西」 | ●●にし | [ɳi ʃi] |
| 6 4 | 暮米「穀」 | ●●もみ | [mo mi] |
| 6 3 | 效子「八」 | ●○やつ | [ja tsu] |
| 6 5 | 大利「皇帝」 | ●○○だいいり | [da i ri] |
| 6 7 | 論速「不在」 | ●○るす ⑤ | [ru su] |
| 6 1 | 射哥「麝香」 | ○○●じゃかう | [ʒja kɔ:] |

6 6 那慕「飲」 ○●のむ [no mu]

7 -

| | | | |
|-----|--------|------------|-----------|
| 7 1 | 殺雞「前行」 | ●●さき | [sa ki] |
| 7 1 | 法哥「小箱」 | ●●はこ | [ɸa ko] |
| 7 2 | 卒睂「爪」 | ●●つめ | [tsu mje] |
| 7 3 | 骨止「口」 | ●●くち | [tu tɕi] |
| 7 6 | 發奈「鼻」 | ●●はな | [ɸa na] |
| 7 6 | 吉利「霧」 | ●●きり | [ki ri] |
| 7 3 | 法古「百」 | ●○ひやく | [ɸja ku] |
| 7 6 | 吉大「來」 | ●○きた | [ki ta] |
| 7 5 | 答搜「誰人」 | ●○たそ | [ta so] |
| 7 5 | 一計「出去」 | ●○いけ | [i kje] |
| 7 1 | 骨都「靴」 | ●○平○○くつ | [ku tsu] |
| 7 2 | 夾迷「髮」 | ●○平○○かみ | [ka mi] |
| 7 2 | 失河「鹽」 | ●○平○○しお | [ɕi o] |
| 7 5 | 禿智「地」 | ●○平○○つち | [tu ti] |
| 7 5 | 禿計「月」 | ●○鎌○○つき | [tu ki] |
| 7 6 | 發賴「肚」 | ●○平○○はら | [ɸa ra] |
| 7 7 | 發發「母」 | ●○平○○はは | [ɸa ɸa] |
| | | 又●○平○●はは | |
| 7 5 | 法水「筋」 | ○●はし | [ɸa ɕi] |
| 7 6 | 法利「針」 | ○●はり | [ɸa ri] |
| 7 1 | 發葩「小」 | ○●○平○○◎ほをい | [ɸo so i] |
| 7 5 | 的个「近」 | ●●●ちかう | [ti kɔ:] |
| | | 又○●○ちかう | |
| 7 6 | 發耀「早」 | ○●○はやう | [ɸa jɔ:] |

8 -

| | | | |
|-----|---------|----------------|-----------------------|
| 8 1 | 力哥「聰明」 | ●●●りこう | [ri kɔ:] |
| 8 2 | 傑奴「昨日」 | ●○○きのう | [ki no:] |
| 8 3 | 學子「四」 | ●○よつ or よっつ | [jo tsu] or [jot tsu] |
| 8 3 | 蜜黍「飯」 | ●○平○○めし | [me ɕi] |
| 8 3 | 蜜子「三」 | ●○平○○みつ or みっつ | [mi tsu] or [mit tsu] |
| 8 1 | 木哥「女婿」 | ○◎むこ | [mu ko] |
| 8 2 | 木綿「綿布」 | ○●○もめん | [mo me n] |
| 8 3 | 達子「立」 | ○●平○○たつ | [ta tsu] |
| 8 3 | 密蛟「獨眼人」 | ○○●めっこ | [mek ko] |

注音漢字三字組

1 —

| | | | | |
|-------|----------|-----------|-----------|-----------------------------------|
| 1 1 1 | 阿多堆「前日」 | ●●●●、●●●○ | おととい | [o to to i] |
| 1 1 1 | 阿多多「弟」 | ●●● | おとと | [o to to] |
| 1 1 1 | 烏多姑「富」 | ●●● | うとく | [u to ku] |
| 1 1 2 | 空揩泥「金」 | ●●●、●○○ | こがね | [ko ʔga nje] |
| 1 1 8 | 倭家達「後生」 | ●●● | わかて, ●●○○ | わかたう [wa ka te] or [wa ka tɔ:] |
| 1 2 5 | 阿奴利「我」 | ●●● | おのれ | [o no rje] |
| 1 4 1 | 烏野雞「大官」 | ●●●● | おおやけ | [o o ja kje] |
| 1 6 3 | 烏論水「漆」 | ●●● | うるし | [u ru ʃi] |
| 1 1 2 | 坑皆彌「鏡」 | ●●○ | かがみ | [ka ʔga mi] |
| 1 2 3 | 干牌水「香」 | ●●●○ | かうばし | [kɔ: mba ʃi] |
| 1 6 6 | 歪爛鼻「孩」 | ●●○ | わらべ | [wa ra mbje] |
| 1 8 2 | 加食難「徒弟」 | ●●○ | かしら | [ka ʃi ra] |
| 1 1 5 | 寬需計「乞丐」 | ●○○ | こじき | [ko ʔzi ki] |
| 1 2 2 | 柯蒙崎「小麥」 | ●○○ | こむぎ | [ko mu ʔgi] |
| 1 6 5 | 因鼻計「鼾」 | ●○○ | いびき | [i mbi ki] |
| 1 6 4 | 孫助俚「硯」 | ●●○ | すずり | [su ʔzu ri] |
| 1 5 3 | 他介水「貴」 | ●○○ | 平○○◎ | たかし [ta ka ʃi] |
| 1 6 3 | 歪賴水「歪貨」 | ●○○ | わるし | [wa ru ʃi] |
| 1 7 3 | 溫卒水「薄」 | ○○○ | 平●●◎ | うすし [u su ʃi] |
| 1 1 3 | 歪皆水「小廝」 | ○○○ | わかしゆ | [wa ka ʃju] |
| 1 1 5 | 倭家倒「婦人」 | ○○○ | おかた | [o ka ta] |
| 1 2 2 | 烏蒙崎「大麥」 | ○○○ | おおむぎ | [o: mu ʔgi] |
| 1 4 7 | 歪魯失「生得醜」 | ●○○ | わるし | 本作魯歪失 [wa ru ʃi] |
| 1 8 1 | 剛白哥「盒子」 | ○○○ | かうばこ | [kɔ: mba ko] |

2 —

| | | | | | |
|-------|----------|-----|-----------|-------|----------------|
| 2 6 4 | 眠助米「鼠」 | ○○● | 平○○●● | ねずみ ⑥ | [ne ʔzu mi] |
| 2 8 3 | 扶達子「二」 | ○○○ | 室○○●○、●●○ | ふたつ | [ɸu ta tsu] |
| 2 2 3 | 搖婆俚「箬帽」 | ○○○ | やぶれ | | [ja mbu rje] |
| 2 6 6 | 何賣利「吃」 | ○○○ | ● | おまいり | [o ma i ri] |
| 2 7 1 | 埋骨多「老實人」 | ○○○ | 平○○●● | まこと | [ma ko to] |
| 2 7 5 | 吾失利「後」 | ○○○ | うしろ | | [u ʃi ro] |
| 2 7 6 | 眉骨賴「瞎子」 | ○○○ | めくら | | [me ku ra] |
| 2 2 3 | 何何水「多有」 | ○○○ | おおし | | [o: ʃi] |
| 2 7 6 | 麻骨賴「枕」 | ●○○ | 平○○○ | ● | まくら [ma ku ra] |

木 津 祐 子

| | | | |
|-------|---------|-------------|-------------|
| 2 7 6 | 埋骨頼「枕」 | ●○○平○○●まくら | [ma ku ra] |
| 2 8 6 | 羊達路「眠」 | ●●●平○○◎やどる | [ja ʰdo ru] |
| 2 1 1 | 明哥多「極好」 | ●○○みごと | [mi ŋgo to] |
| 2 2 4 | 迷南來「南」 | ●○○みなみ 來當作米 | [mi na mi] |
| 2 8 6 | 牙十大「瘦」 | ●○○やせた | [ja ʃje ta] |

3 -

| | | | |
|-------|---------|------------|---------------|
| 3 1 6 | 子多謬「丈母」 | ●●●●しゅうとめ | [ʃju: to mie] |
| 3 5 5 | 挨介水「明」 | ●●●あかし | [a ka ʃi] |
| 3 2 6 | 挨蒲頼「油」 | ●○○平○○●あぶら | [a ʱbu ra] |
| 3 5 3 | 發介俚「等子」 | ○○●はかり | [ʰa ka ri] |
| 3 7 3 | 挨卒水「厚」 | ○○●平●●◎あつし | [a tsu ʃi] |
| 3 7 5 | 挨掇水「煖」 | ○○●平●●◎あつし | [a tu ʃi] |

4 -

| | | | |
|-------|---------|------------|-------------|
| 4 2 2 | 乃沈皮「茄子」 | ●○○平○○●なすび | [na su ʱbi] |
| 4 4 3 | 乃乃子「七」 | ●○○ななつ | [na na tsu] |

5 -

| | | | |
|-------|---------|-----------------|---------------|
| 5 1 4 | 晒加乃「飲酒」 | ●●●さかな | [sa ka na] |
| 5 3 3 | 意子子「五」 | ●○○平○○●いつつ | [i tsu tsu] ⑦ |
| 5 5 6 | 个个路「心」 | ●○○平○○●こころ | [ko ko ro] |
| 5 7 5 | 亞夫旦「明日」 | ●●●平○○●あした 夫當作失 | [a ʃi ta] |
| 5 6 1 | 去那雞「檜」 | ●○○ひのき | [ʰi no ki] |
| 5 7 5 | 亞撒里「後日」 | ●●●○あさつて 里當作旦 | [a sat te] |
| 5 1 3 | 去多子「一」 | ○○●ひとつ | [ʰi to tsu] |

6 -

| | | | |
|-------|---------|----------|---------------|
| 6 1 2 | 漫多羅「去」 | ●●●もどる | [mo ʰdo ru] |
| 6 2 3 | 面婆水「梅子」 | ●●●○うめぼし | [m me ʱbo ʃi] |

7 -

| | | | |
|-------|---------|------------|--------------|
| 7 1 6 | 骨葩路「朽」 | ●●●くさる | [ku sa ru] |
| 7 2 3 | 乞麻俚「衣服」 | ●●●きもの | [ki mo no] |
| 7 2 6 | 客成頼「頭」 | ●●○かしら | [ka ʃi ra] |
| 7 7 3 | 一輶水「喜」 | ●●○いとし | [i to ʃi] |
| 7 8 5 | 骨辣水「暗」 | ○○●平●●◎くらし | [ku ra ʃi] |
| 7 1 3 | 骨葩水「臭」 | ○○●平○○◎くさし | [ku sa ʃi] |
| 7 8 3 | 愬辣水「芥」 | ○○●からし | [ka ra ʃi] |
| 7 2 4 | 失其里「鞋」 | ○○●しぎれ | [ʃi ŋgi rje] |

| | | | |
|-------|---------|--------------|---------------|
| 7 5 1 | 一故都「年紀」 | ○●○いくつ | [i ku tu] |
| 7 5 3 | 一輦水「痛」 | ○●○平○○◎いたし ⑧ | [i ta ʃi] |
| 8 — | | | |
| 8 2 5 | 達昂个「手巾」 | ●●●●てのこい | [te no ʔgo i] |
| 8 7 1 | 莫宿哥「子」 | ●●●むすこ | [mu su ko] |
| 8 7 2 | 莫宿眠「女」 | ●●○むすめ | [mu su me] |
| 8 1 2 | 別姑常「百姓」 | ●○○○ひやくしょう ⑨ | [ɸja ku ʃjo:] |
| 8 1 2 | 伏思麻「被」 | ●○○平○○○ふすま | [ɸu su ma] |

注① 「松」字中古音是邪母、濁平聲字。但是《中原音韻》已經只收陰平聲音。

② 「烏」字同時注「う」「お」兩音。在倭寇史籍中，對「う」「お」兩段用同一種注音字是很普遍的現象。「い」「え」兩段也有一樣現象。詳見拙文〈《日本風土記》の基礎音系〉。

③ 「泥」字中古音有平去兩音，在意思上考慮「浮泥」這個字組，在此取平聲音。

④ 5 3 是按修改後的「付洗」之聲調而付的號碼，下面 2 2 4、5 7 5、5 7 6 二例也一樣。

⑤ 「論」字中古音有平去兩音，現採用。

⑥ 把「眠」字用爲日語「ね」有點奇怪，還不能考定其原因。可能是日語漢字音的反映，可能是日語平假名形狀的相似引起的錯誤，也許是在古代日語中時而發生的「マ」行(m-系列)與「ナ」行(n-系列)混亂現象的反映。

⑦ 當時日語「いつつ」的一般讀法是[i tu tu]，不過同時塞音[tu]逐漸地開始變爲塞擦音[tsu]（詳見〈十六世紀日語音系簡介〉）。這裏的注音漢字明顯地作塞擦音[tsu]的對音用。

⑧ 「輦」字，廣韻、集韻等韻書都不收，在此按其聲符「旦」（陰去聲）付聲調代碼。

⑨ 「別」字中古音有清入聲和濁入聲兩音，由於現代北京語念成陽平聲等原因，在此把它當作濁入聲。

A Theory of the Bifurcation of the Middle Chinese Voiced Syllable-initial Stops and Affricates into Aspirates and Unaspirates after Devoicing

Eric Zee

Department of Anthropology
The Chinese University of Hong Kong

A theory is proposed to explain the historical process of the bifurcation of the Middle Chinese voiced syllable-initial stops and affricates into aspirated and unaspirated reflexes after devoicing. It is shown that in natural speech it is physiologically difficult, if not impossible, for a tone with a low onset to be produced immediately after a voiceless unaspirated stop or affricate, but not after a voiceless aspirated one. It is argued that it is the physiological constraints of speech mechanism which have determined whether the Middle Chinese voiced stops and affricates should become aspirated or unaspirated reflexes after devoicing in the historical development of the Chinese dialects.

1. Introduction

A well-documented sound change in Chinese is that the Middle Chinese voiced syllable initial stops and affricates (MCVSA, henceforth) associated

with *yang* tones underwent a process of aspiration/unaspiration bifurcation after devoicing took place (Chen, 1976; Karlgren, 1915-1926, 1954; Luh, 1947; Dong, 1980; Li, 1982; Ding, 1984; Pulleyblank, 1969-1970, 1984; Yu, 1987; Norman, 1988). In the Mandarin dialects, MCVSA became voiceless aspirates in the *yang ping* tone and voiceless unaspirates in the other *yang ze* tones:

*b > [p^h] ~ *yang ping*

*b > [p] ~ *yang ze*

This diachronic process is considered the "defining characteristic of Mandarin as a group", although there are a few exceptional cases (Norman, 1988, p. 191). In Cantonese, MCVSA developed into voiceless aspirates in *yang ping* and some of the *yang shang* and voiceless unaspirates in *yang qu* and *yang ru* (Hashimoto, 1972; Chen, 1986). This pattern of distribution is also true for Taishan (Cheng, 1973) and all the members of the Yue group in the Pearl River Delta (Zhan & Cheung, 1987). However, in Min, both voiceless aspirated and unaspirated reflexes of MCVSA are found (Lo, 1956), and there are more aspirated reflexes associated with the *yang ping* tone than with *yang ze* tones (Karlgrén, 1915-26). In Nanchang, *yang ping* and *yang ru* split into "35"/"24" and "5"/"2", respectively, and MCVSA developed into [p^h] in "24" and "2" and [p] in "35" and "5". Furthermore, in Nanchang, *yang shang* and *yang qu* merged to become "11" and MCVSA associated with both tonal categories developed into [p^h] only (Xiong, 1979). There are also cases in which all MCVSA became voiceless aspirates, such as, Hakka, or voiceless unaspirates, such as Changsha (Yang, 1974), regardless of the tonal categories with which they were associated in either case. While there has been general consensus among phonologists that the bifurcation of MCVSA into aspirates and unaspirates within a dialect or cross dialects occurred, there is

disagreement as to whether the MCVSA were actually (a) voiced aspirates, *b^h, (Karlgren, 1915-1926, 1954; Dong, 1980); (b) voiced unaspirates, *b, in Early Middle Chinese which evolved to become voiceless with voiced aspiration, *p^h, in Late Middle Chinese (Pulleyblank, 1969-70; 1984); or (c) plain voiced unaspirates, *b, (Luh, 1947; Li, 1982; Wang, 1985; Norman, 1988). Each of these reconstructions represents a different theory, explaining the development of MCVSA into modern reflexes. Each case is further discussed in the following section.

2. Theories of the Development of MCVSA into Modern Reflexes

Karlgren's reconstruction of *b^h is based on the argument that a similar diachronic process took place in the Indo-European language family, in which voiced aspirated stops in the reconstructed proto-form of Sanskrit became p^h (<*b^h) in modern Greek and p (<*b^h) in modern Germanic and Slavic language families. Thus, by reconstructing MCVSA as voiced aspirated, *b^h, Karlgren was able to explain the Hakka and Wu cases, i.e., *b^h > p^h (devoicing) and *b^h > b (deletion of aspiration), respectively, similar to the Greek and Germanic cases (Karlgren, 1915-1926). He argues that (i) a direct evolution *b > p^h "is phonetically exceedingly improbable" (Karlgren, 1954, p. 220), and (ii) an indirect evolution *b > p > p^h is equally implausible since it cannot explain why the Middle Chinese voiceless unaspirated p (<*p) should remain intact, although he does not explain why in the end aspiration was retained in *ping* tone but not in *ze* tones. Karlgren's theory should be treated with caution for the following reasons. (a) Since only three series of stops were recorded in Qieyun: voiceless aspirated, voiceless unaspirated, and

voiced stops, the reconstruction of voiced aspirated (murmured or breathy) stops as the only MCVSA is implausible. This is because language universal principles require that if a language has voiced aspirated stops it must also have plain voiced stops, and not vice versa. In Maddieson (1984), speech sound inventories of 371 languages are presented. Only 7 languages have breathy voiced stops: Hindi, Urdu, Bengali, Igbo, Mundari, Kharia, and Loan Telugu, and all these languages also have plain voiced stops. It is possible, however, that the voiced aspirated stops $*b^h$ that Karlgren refers to are not of the same type as those in the Hindustani languages which have a long time lag between the release of oral closure and voicing, but of the type characterized by some degree of breathiness which is manifested in the onset of the vowel, such as the type in Wu dialects (Chao, 1928; Cao & Maddieson, 1992). (b) Luh (1947) and Pulleyblank (1983) oppose the idea of reconstructing MCVSA as being aspirated on the grounds that from the late Han to the seventh century, the Chinese voiced stops were used for both Sanskrit voiced aspirated and unaspirated stops in transcribing Buddhist scripts and "if a distinction was made, special devices were employed to represent Sanskrit voiced aspiration" (Pulleyblank, 1984, p. 163). Thus, historical evidence shows that Karlgren's reconstruction of MCVSA as aspirated is questionable. (c) $*b^h > p^h$ in any case can only satisfactorily explain the Hakka case, and not the cases in which MCVSA bifurcated conditionally or unconditionally into aspirates and unaspirates in other Chinese dialects. As far as the Mandarin dialects are concerned, Karlgren's explanation that "first the aspiration was preserved in *p'ing sheng* but was lost in the other tones" (Karlgrén, 1954, p. 221) does not answer the question of why aspiration was preserved in *yang ping* tone, but not in oblique *yang* tones. Karlgren offers no specifics for this.

Two stages are distinguished in Pulleyblank's (1969-1970; 1984) reconstruction of MCVSA: Early Middle Chinese (EMC; 7th century) and Late Middle Chinese (LMC; 8th century). According to him, in EMC the corresponding initials were fully voiced without the feature of aspiration, that is, *b. By LMC, they developed into voiceless initials "accompanied by voiced aspiration spreading into the following syllable" (Pulleyblank, 1984, p. 163), that is, *p^h (<*b). Pulleyblank's reconstruction of the development of MCVSA is primarily based on the observation that the modern reflexes of MCVSA in most of the Wu dialects, especially northern, are voiceless consonants, accompanied by voiced aspiration (Chao, 1928, 1935) (though described by Edkins (1853) as plain voiceless stops in isolation and as fully voiced when preceded by a vocalic element). Pulleyblank's theory of the development of MCVSA is shown as follows:

| Stage I (600 a.d.) | | Stage II (Tang) | | Stage III (Sung) | | Stage IV (Yuan onward) |
|-----------------------|---|--------------------|---|--------------------------------|---|---------------------------|
| *b | > | p ^h | > | p' ^h (level tone) | > | p ^h |
| | | | > | p ^h (oblique tones) | > | p |

(h = voiced aspiration)

We can see in Stage I, the Middle Chinese voiced stops are unaspirated voiced, i.e., *b; in Stage II, consonant devoicing took place and the feature of voicing was transferred to the following aspiration at the time of consonant devoicing; in Stage III, p^h bifurcated into p'^h (voiceless aspiration followed by voiced aspiration), associated with level tone, and p^h, associated with the oblique tones; and in Stage IV, p'^h > p^h and p^h > p. While it is reasonable to assume that *b developed into p^h in Stage II since p^h does exist in some of the modern Wu dialects, there are unanswered questions

regarding this model. (a) First of all, it is phonetically implausible for a stop to be both voiceless and voiced aspirated, i.e., p^h . (b) How did p^h come to be associated with level tone and p^h with oblique tones, and why? (c) Why was the aspiration in p^h associated with the oblique tones dropped in the last stage? According to Pulleyblank (1978), in the oblique tones, referring mainly to Departing tones and some Rising tones, before the devoicing occurred, "voiced aspiration of the initial had been lost by dissimilation from the final voiced aspiration of the tone: $p^h _ h > p _ h$ ("_" meaning breathy vowel) ... This dissimilation of initial voiced aspiration can be compared to what is assumed to have occurred in Sanskrit and Greek through the operation of what is known as "Grassman's Law" (Pulleyblank, 1978, p. 190). The example used as supporting evidence in Pulleyblank (1978) is not convincing, and in fact, according to Grassman's Law, the breathy, or voiceless aspiration does not exist by itself as a segment but as a feature of voiced consonant stops, e.g., $*b^h end^h$ (IE) $>$ $band^h$ (Sanskrit) "bind", or as a feature of voiceless consonant stops $*t^h rik^h os$ (IE) $>$ $trik^h os$ (Classic Greek) "hair" (data from Ohala, 1981); however, the second breathy aspiration in the sequence that Pulleyblank is referring to is really a vowel feature. Thus, a vowel feature has been treated as a discrete segment. Furthermore, it is reported in Cao & Maddieson (1992) that a higher degree of breathiness of the vowel in the Wu syllables of the type $p^h V$ occurs mainly at the onset of the vowel. In the middle, it is lowered, and at the vowel offset the breathiness is not present. Thus, Pulleyblank's reconstruction of the LMC $p^h _ h$, which, I assume, is based on the modern Wu dialects, is not supported by recent experimental data from Wu. Furthermore, why should only those breathy syllables associated with oblique tones develop breathy aspiration at the end of the syllable, and not the same breathy syllables

associated with level tone? According to Pulleyblank, Departing tone always had final breathiness, Rising tone developed final breathiness as a result of phonetic assimilation, in that syllable initial breathiness assimilated to replace the syllable final glottal stop of Rising tone, and eventually Rising tone with final breathiness merged with Departing tone. This is too much of a speculation and, besides, as Sagart (1986) points out, "In those modern dialects that have both breathy obstruent initials and a final glottal stop in Entering-tone words, there is no known instance of a final glottal stop being changed to -h under the effect of initial voiced aspiration" (Sagart, 1986, p. 105).

Sagart (1986), accepting Pulleyblank's Stages I and II, offers a different explanation as to why aspiration was not developed in the oblique tones in the later stages. In his discussion of the origin of *Departing* tone in Chinese, Sagart proposes that *Departing* tone arose not through the loss of final -h (Haudricourt, 1954) but through glottalization of syllable. He contends that the *yang* oblique tones had acquired the feature of glottalization at the time of consonant devoicing, and "it was this feature (of glottalization) of the lower oblique tones which prevented initial breathiness from developing into voiceless aspiration" (Sagart, 1986, p. 106):

*b > p^h > p^h (level tone)

*b > p^h > p (oblique tones/glottalized)

The question is how the feature of glottalization *prevented* initial breathiness from developing into voiceless aspiration. Sagart's contention lacks phonetic plausibility and is arbitrary, for we could just as well say that it was the obliqueness of the oblique *yang* tones that prevented initial breathiness from developing into voiceless aspiration. In any case it does not explain the Hakka case and a number of dialects in the Xiang family in which all

MCVSA evolved into voiceless aspirated stops. Furthermore, MCVSA associated with *yang shang* tone, an oblique tone, are voiceless and unaspirated in Cantonese.

Most of the other phonologists (Luh, 1947; Li, 1982; Wang, 1985; Norman, 1988) accept the reconstructed MCVSA as being unaspirated in their discussion of the aspiration and unaspiration bifurcation of MCVSA, although none offer any theories, explaining the diachronic sound change. Why MCVSA underwent such a diachronic change has remained an unsolved puzzle. It is the intention of this study to solve the puzzle by providing a theory based on speech physiology.

3. Clues

While historical evidence has become obscured in most of the Chinese dialects, data from Nanchang and Cantonese provide important clues to solving the puzzle. It is reported that in Nanchang, a member of the Xiang dialect family, *yang ping* and *yang ru* tones split into "35"/"24" and "5"/"2", respectively, and interestingly, MCVSA developed into [p^h] in "24" and "2" and [p] in "35" and "5". And, *yang shang* and *yang qu* merged into "11" and MCVSA associated with both tonal categories developed into [p^h] only (Xiong, 1979). This distribution cannot be accidental and is not an isolated case. In fact, a similar development is observed in Cantonese. As stated earlier, in Cantonese, MCVSA developed into voiceless aspirates in *yang ping* and *yang shang* and into voiceless unaspirates in *yang qu* and *yang ru*. The relationship between tonal category and the development of MCVSA in the dialect is shown as follows:

| Tone Letter | Tone Type | [p ^h] (<*p ^h) | [p] (<*p) |
|-------------|-----------|---------------------------------------|-----------|
| "55" | Yin Ping | [p ^h ou] | [pou] |
| "35" | Yin Shang | [p ^h ou] | [pou] |
| "44" | Yin Qu | [p ^h ou] | [pou] |
| "5,4" | Yin Ru | [p ^h a:k] | [pa:k] |

| Tone Letter | Tone Type | [p ^h] (<*b) | [p] (<*b) |
|-------------|-------------------|-------------------------|-----------|
| "21" | <i>Yang Ping</i> | [p ^h ou] | * |
| "24" | <i>Yang Shang</i> | [p ^h ou] | * |
| "33" | <i>Yang Qu</i> | * | [pou] |
| "3" | <i>Yang Ru</i> | * | [pa:k] |

["*" = non-occurring] (Hashimoto, 1972)

We can see that in Cantonese there is an interesting distribution of consonant type and the onset value of tonal category in the *yin* and *yang* series. While both voiceless aspirated and unaspirated stops occur with any one of the tonal categories in the *yin* series or upper register, this is not so in the *yang* series or lower register. The numerical values on a five-point scale assigned to each tonal category are based on the acoustical data obtained from measurements made with narrow-band spectrograms of the tones (Hashimoto, 1972; *see also* Vance, 1977), although different values have been assigned to the Cantonese *yang* tones by different scholars as shown in the follows:

| | <u>ping</u> | <u>shang</u> | <u>qu</u> | <u>ru</u> |
|--------------------|-------------|--------------|-----------|-----------|
| Chao (1947) | 21 | 23 | 22 | 2 |
| Yuan, et al (1983) | 21 | 13 | 22 | 2 |
| Gao (1980) | 11 | 13 | 22 | 2 |

And, Wong (1941), based on Jones and Woo (1921), describes both *ping* and *shang* tones as having a lower tonal onset than *qu* and *ru* tones.

Using Kay's Computerized Speech Lab software, the author of this paper analyzed the pitch contour of the vowel in the syllables [si] and [sit], embedded in the carrier sentence, "ŋɔ̌ jiu tuk _____ pei lei tʰɛŋ (I want to read ____ for you to listen)" and uttered with the four *yang* tones by two male Cantonese speakers, both in their late twenties. The two initial data points (in Hz), representing pitch values of the first 40 milli-seconds of vowel [i] or [ɪ] of three repetitions, are shown as follows:

| | Speaker 1: | | Speaker 2: | |
|---------------------------------|---------------------|-----|---------------------|-----|
| | Data Points (in Hz) | | Data Points (in Hz) | |
| | 1st | 2nd | 1st | 2nd |
| [si]/ <i>yang ping</i> "time": | 122 | 128 | 143 | 127 |
| | 116 | 119 | 143 | 128 |
| | 130 | 125 | 135 | 128 |
| [si]/ <i>yang shang</i> "city": | 125 | 114 | 137 | 135 |
| | 116 | 116 | 137 | 135 |
| | 118 | 113 | 141 | 135 |
| [si]/ <i>yang qu</i> "matter": | 135 | 127 | 152 | 150 |
| | 141 | 123 | 161 | 156 |
| | 137 | 125 | 147 | 139 |
| [sit]/ <i>yang ru</i> "to eat": | 131 | 122 | 157 | 145 |
| | 149 | 125 | 156 | 145 |
| | 132 | 127 | 161 | 143 |

We can see from the data that for both speakers the values (in Hz) of the first data points for *yang ping* and *yang shang* are smaller than those of *yang qu* and *yang ru*, although the difference is small enough for the four tones to

be described phonologically as 21, 24, 22, and 2. Despite the sample size, the data do seem to indicate that in Cantonese the actual tonal onset values of *yang ping* and *yang shang* tend to be smaller than those of *yang qu* and *yang ru*. Assuming that this correlation holds, an interesting observation may be made, that is, in Cantonese if the tone onset value is low in the lower register, as in the cases of *yang ping* and *yang shang*, MCVSA develop into voiceless aspirates, and if the onset value is higher in the lower register, as in the cases of *yang qu* and *yang ru*, MCVSA develop into voiceless unaspirates.

Similar correlation between lower fundamental frequency (F_0) onset and aspiration is also found in Thai (Gandour, 1974). In the following table, it is shown that the onset fundamental frequency value varies according to the initial consonant type:

| | <u>Average F_0(onset) values for stops</u> | | | |
|---------|---|------------------------------------|--------------------------------------|--------|
| | [p, t] | [p ^h , t ^h] | [p ^{ḥ} , t ^{ḥ}] | [b, d] |
| MID | 136 | 132 | 123 | 120 |
| LOW | 136 | 116 | 114 | 109 |
| FALLING | 148 | 140 | 136 | 133 |
| HIGH | 146 | - | 128 | 123 |
| RISING | 137 | 124 | 113 | 114 |

(Gandour, 1974, p. 342)

We can see that the average F_0 (onset) value for the five Thai citation tones, MID, LOW, FALLING, HIGH, and RISING, decreases in the following order: [p, t] > [p^h, t^h] > [p^{ḥ}, t^{ḥ}] > [b, d]. In all cases, the F_0 (onset) values associated with voiceless unaspirated stops [p, t] are higher than those associated with aspirated ones. Interestingly, both MID and LOW associated with [p, t] have the same F_0 (onset) value of 136 Hz despite their being categorized as

different tones. However, a much lower $F_0(\text{onset})$ value (116 Hz) for LOW associated with voiceless aspirated $[p^h, t^h]$ is possible. This is also true for RISING. The rest of the data show that the tones which are associated with voiceless breathy stops $[p^h, t^h]$ or voiced stops $[b, d]$ have much lower average $F_0(\text{onset})$ values than those associated with voiceless aspirated and unaspirated counterparts.

The documented historical data which might serve to solve the MCVSA bifurcation puzzle are almost non-existent. The only recorded evidence, which applies to the development of MCVSA in the modern Mandarin dialects, is from *Hsi-t'an tsang*, by the Japanese monk, Annen (悉曇 (安然, 880 A.D.)), in which *pin* tone in the 8th/9th century Tang Dynasty was described as, "平聲直低, 有輕有重" (level and low and having upper and lower variants), and in any case, both of them were lower than any other tones, that is, oblique shang, qu, and ru tones (Mei, 1970, 1982). The phonetic quality of the Middle Chinese tones, *pin1*, *pin2*, *shang*, *qu*, and *ru* tones, according to Zhang (1987) have been represented by traditional Chinese musicologists as 宮, 商, 角, 徵, and 羽 (五音), having the frequencies of 261.00, 293.63, 330.33, 391.50, and 440.44, respectively, and based on this and other historical records which Zhang uses to infer the phonetic quality of the tones, he concludes that the values of the Middle Chinese tones, *pin*, *shang*, *qu*, and *ru* should be reconstructed as "22", "45", "53", and "34", respectively. Documented data by Annen and Zhang's reconstruction suggest that possibly at the time when some of the MCVSA became aspirated after devoicing, the tonal onsets that these MCSVA were associated with were low in the lower register.

Based on the evidence from Cantonese, Nanchang, and Thai as well as the documented data from *Hsi-t'an tsang* and Zhang's reconstruction, we

contend that (1) the development of MCVSA in Chinese was conditioned by the onset tone value with which they were associated at the time when the process of initial consonant devoicing took place, and (2) MCVSA, after devoicing, developed into aspirates if they were followed by a low tonal onset in the lower register, or into unaspirates if they were followed by a higher tonal onset in the lower register. In the following section, we will show that our contention is plausible.

4. Phonetic Explanations

We will show that in natural speech it is physiologically difficult, if not impossible, for a tone with a low onset to be produced immediately after a voiceless unaspirated stop, but not after a voiceless aspirated stop. We believe that it is the physiological constraints of speech mechanism which determined whether MCVSA were to become aspirated or unaspirated reflexes after devoicing in the historical development of the Chinese dialects.

Let us take a look at the speech mechanism which controls pitch variation. The rate of vocal cord vibration is determined primarily by three factors:

- (1) horizontal vocal cord tension - activity in cricothyroid muscle,
- (2) vertical vocal cord tension - vertical movement of the larynx, and
- (3) the pressure drop across the vocal cords, or the rate of airflow, which is in turn determined by both subglottal pressure and glottal width (Ladefoged, 1971, 1973).

The most important mechanism for increasing pitch is the lengthening of the vocal cords primarily in the anterior-posterior dimension as a result of tilting the thyroid cartilage forward by contracting the laryngeal muscle,

cricothyroid (Katsuki, 1950; Arnold, 1961; Hirano, Vernard & Ohala, 1970; Ohala, 1970; Atkinson, 1973, 1978; Ladefoged, 1973). The vocal cords can also be stretched in the superior-inferior or vertical tension by vertical movement of the larynx, and larynx height varies directly with pitch or log of pitch: larynx is lower if pitch is lowered and higher if pitch is raised (Ohala, 1972). The third main factor which contributes to change in the rate of vocal cord vibration is the trans-glottal pressure on the vocal cords which depends on rate of airflow which in turn depends on the subglottal pressure and the size of the glottal opening (Ladefoged, 1973). In general, a higher subglottal pressure will result in a higher rate of vocal cord vibration, other things being equal.

All three physiological activities, that is, *cricothyroid activity*, *vertical movement of the larynx*, and *airflow rate* which are involved in regulating the rate of vocal cord vibration are also involved in the production of various consonant types, such as voiceless unaspirated stops [p], voiceless aspirated stops [p^h], voiced unaspirated stops [b], and breathy voiced stops [b^h].

It is reported in Dixit (1975) that in languages such as Hindi an increase in cricothyroid muscle activity is observed during the production of voiceless aspirated and unaspirated stops, as opposed to voiced aspirated and unaspirated stops. He also postulated that increased cricothyroid activity contributes to the increase in longitudinal tension of the vocal cords. Furthermore, (a) the activity in cricothyroid muscle of the Hindi-speaking subjects is slightly higher at the onset of the voiceless unaspirated stops than any of the other three types of stop, and, correlatively, (b) the fundamental frequency value immediately after the release of the voiceless unaspirated type is found to be higher, and (c) a higher fundamental frequency immediately after the release of the voiceless unaspirated type can be related

to the increase in cricothyroid activity during the production of the consonant.

It is also reported that the vertical position of the larynx differs between voiced and voiceless stops (Jespersen, 1889; Hudgins and Stetson, 1935; Ewan & Krones, 1974; Ewan, 1979), for instance, in Thai, "(a) ... the larynx was generally higher during voiceless (as opposed to voiced) stops; (b) during the production of bilabial stops, where possible tongue pull on the larynx should be minimal, the larynx tends to fall for voiced (and voiced-breathy) stops and not to return to its previous position until well into the following vowel; (c) larynx height was higher on the average for voiceless unaspirated stops than voiceless aspirated stops in Thai (although non-significantly); and (d) the greatest difference in larynx height between stops is generally near the release." (Ewan, 1979, p. 61).

Insofar as the airflow rate is concerned, it is greater at the onset of a vowel after voiceless aspirated stops than after voiceless unaspirated stops as a result of the high rate of airflow through the glottis during the period of aspiration (Ohala, 1976). The high rate of airflow apparently results in a higher rate of vocal cord vibration. Thus, for instance, in Cantonese the pitch onset of a high tone, *yin ping* tone, is higher when the vowel is preceded by an aspirated stop than when it is preceded by an unaspirated stop (Zee, 1980). However, the correlation of aspiration and higher initial pitch does not hold for a low tone. In a number of Chinese dialects, aspiration, quite to the contrary, is correlated with a lower initial pitch (Sagart, 1981). The lower pitch onset is seen not as a result of the same effect that aspiration has on a higher tone, such as in the case of Cantonese. Rather, aspiration in this case provides a favorable physiological condition which facilitates the production of a lower tone onset. As pitch-lowering is

not a passive but an active physiological process (Ohala, 1972), aspiration, or delayed voice onset (Lisker & Abramson, 1964; Ladefoged, 1973), provides time for laryngeal re-adjustments so that vocal cord tension may be reduced by not only lowering the larynx, but also by decreasing activity in cricothyroid muscle and increasing activity in sternohyoid muscle. These laryngeal adjustments will be difficult if a vowel onset is immediately preceded by an unaspirated stop, since an unaspirated stop is correlated with increased activity in the cricothyroid muscle, a higher laryngeal position, and reduced activity in the sternohyoid muscle.

Furthermore, during the production of voiced obstruents, the approximated vocal cords cause a decrease in the rate of airflow through the glottis, causing a decrease in vocal cords vibration (Ladefoged, 1973) and since the arytenoid cartilages move forward as they come together, the vocal cords tend to be less stretched (Ladefoged, 1973). Consequently "the pitch is initially very low and may return to 'normal' level" (Ohala, 1973, p. 8). And, during murmured stops, "most of the air flowing through the glottis is escaping through the arytenoidal portion, not the ligamental portion of the vocal cords" (Ladefoged, 1973). As it is only or mainly the ligamental portion of the vocal cords which are vibrating in this case this lower-than-normal air flow may cause the lowered pitch" (Ohala, 1973). Furthermore, during these sounds, the arytenoid cartilages also move forward and thus the vocal cords are less stretched (Ladefoged, 1973). Thus, voiced or murmured stops are usually associated with low pitch onsets.

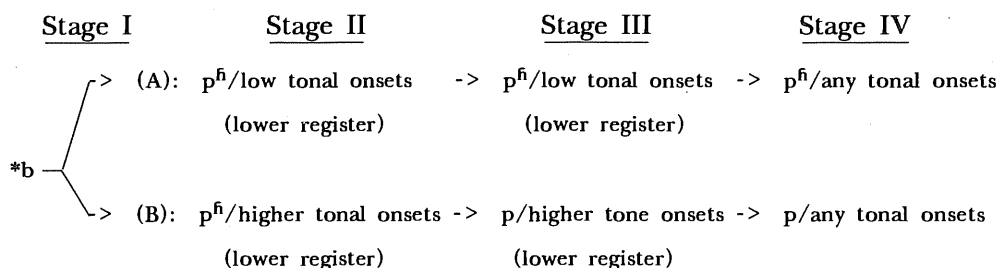
We can now explain why in natural speech it is physiologically difficult for a tone with a low onset to be produced immediately after a voiceless unaspirated stop but not after a voiceless aspirated stop or a murmured (breathy) stop. In order for a low tonal onset to be produced, three

physiological conditions must be satisfied: decreased cricothyroid activity (and increased sternohyoid muscle activity), a lower larynx position, and a lower airflow rate. However, increased cricothyroid activity, a higher larynx position, and a high rate of airflow, conversely, are physiological features of voiceless unaspirated stops. Due to a short VOT of voiceless unaspirated stops, e.g., only 9 milli-seconds for [p] in Cantonese (Lisker & Abramson, 1964) and 8.5 milli-seconds for [t] in Mandarin (Kagaya & Hirose, 1975), a low tone onset immediately following a voiceless unaspirated stop can create physiological antagonism between the two. Thus, if a low pitch onset which was once associated with an earlier voiced stop, *b, must be maintained in the language after *b became devoiced, a reasonable alternative is to delay onset voicing so that appropriate physiological adjustments can be made in order to decrease cricothyroid activity, to increase sternohyoid muscle activity, to lower the larynx position, and to reduce the rate of airflow by allowing air to escape from the glottis so that a lower pitch onset may be produced without much physiological difficulty. The delay cannot be anything other than aspiration. In fact, "aspiration ... is regarded simply as a large delay in voice onset" (Lisker & Abramson, 1964, p. 387).

On the basis of the foregoing discussion on physiological constraints of speech mechanisms, we contend that the bifurcation of MCVSA into aspirates and unaspirates after devoicing is conditioned by the onset of tone. It is highly unlikely for MCVSA to become unaspirated if a low tonal onset in the lower register must be maintained in the phonological system at the moment of consonant devoicing. Under the circumstances, an aspirated counterpart is a reasonable alternative.

5. A Theoretical Model

Based on our earlier discussions, we propose a theoretical model of the evolution of MCVSA as follows:



This model makes the following assumptions:

(1) All MCVSA were once fully voiced stops and affricates as in Stage I. All MCVSA were associated only with tonal onsets in the lower register of the entire pitch range, and not with any tonal onsets in the upper register. The tonal onsets in the lower register vary and they may be either low or higher.

(2) At Stage II, fully voiced stops [*b] become devoiced, with breathy phonation realized on the initial portion of the following vowel, represented as [p^h]. It is generally accepted that the devoicing of syllable initial consonants results from the process of phonologization of the tones, causing the voicing contrast in syllable initial stop consonants to become a redundant feature. The tonal onsets at this stage may be either low or higher in the lower register, that is, both Direction A and Direction B occur in the same dialect. This is exemplified by the modern Wu dialects and a number of the Xiang dialects. At this point, we wish to point out that we accept Cao & Maddieson's (1992) view that phonologically the property of breathiness, *h*, is inherent in the consonants but its phonetic manifestation is in the onset

to the vowel. Also, on the basis of the experimental data from a number of Wu dialects, Cao & Maddieson (1992) observe that, in addition to the difference in pitch that follows them, there is a phonation difference between the voiceless unaspirated [p] (<*p) and the "voiceless" [p^h] (<*b), despite the fact that no voicing is detected before oral release in [p^h] (<*b) in isolation. They compare the phonetic quality of these two types of stop sound in four Wu dialects, Shanghai, Ningbo, Changyinsha, and Wenzhou, by measuring (a) the AF/AP (air flow/peak air pressure) ratio of [p] and [p^h], (b) the energy difference between the fundamental H1 and the second harmonic H2, and (c) the difference between the first formant frequency F1 and H1. In both (b) and (c), the spectral data were taken about 30 ms. after the burst. A greater AF/AP ratio implies a greater glottal opening during the release of the stop consonant. A greater energy in H1 implies less vocal cord tension, or "when the vocal cords are vibrating in a tenser position there is less energy in H1 relative to higher (harmonic) components" (Fant, 1983 in Cao and Maddieson, 1992). Their measurements show that the AF/AP ratio is greater and the average energy difference in both the H2-H1 and the F1-H1 is greater after [p^h] (<*b) than after voiceless unaspirated stops (<, which means the glottis opening is greater and the vocal cord tension is less for [p^h] than for [p] and this supports the fiberoptic data on glottal width in the three stops series in Shanghai, in which the glottal aperture is wider at the time of consonant release in the "voiced" stops than it is in the unaspirated voiceless ones (*see also* Ren, 1987, 1992). Thus, "there is a phonation difference between the "voiceless" [p^h] (<*b) and voiceless unaspirated [p] (*<p) in all of these dialects" (Cao & Maddieson, 1992). This observation is supported by the result of the spectrographic analyses of VOT of the Wu initial consonants by Cao (1982) and Zee (1988):

(a) there is no voicing-bar preceding the oral release for [p^h] in isolation or in compound-initial position, and (b) there is no observable difference in VOT between the "voiceless" [p^h] (*<b) and voiceless unaspirated [p] (*<p).

(3) At Stage III, voiced breathiness realized on the initial portion of the vowel disappears as the process of consonant devoicing has reached its final stage. The devoiced MCVSA then bifurcate into voiceless aspirated and voiceless unaspirated stops, depending on the tonal onset with which they were associated. The higher tonal onsets in the lower register are associated with voiceless unaspirated stops [p] (<*b) and the low tonal onsets in the lower register with voiceless aspirated stops [p^h] (*<b). The emergence of this pattern of association is due to the physiological explanations given above. Similar to Stage II, both Direction (A) and Direction (B) at this stage occur in the same dialect. This is exemplified by the Mandarin dialects and Yue dialects. Also, beginning at this stage, the Middle Chinese low or higher tonal onsets in the lower register, whether they are associated with voiceless aspirated (<*b) or unaspirated stops (<*b), begins to rise as the tonal depressor, i.e., voicing in the syllable initial position is now gone. The level of the Mandarin *pin tone* should be the lowest at the time of devoicing, compared to the oblique tones, and it has risen to the present level of "35" after the tone depressor has disappeared. This may also explain why some of the Middle Chinese *yang* tones in Hakka, have shifted into the upper register region after the devoicing of MCVSA.

(4) Consequently, at Stage IV, the fully devoiced MCVSA, [p] (<*b) or [p^h] (<*b), may be associated with any tonal onsets in either upper or lower register. However, we expect that the absolute phonetic onset value of a phonological low tone which is associated with voiceless unaspirated stops, [p] (<*b), to be smaller than that of the same phonological tone which is

associated with voiceless aspirated stops, [p^h] (<*b). Direction (A) or Direction (B) may occur singly in a dialect or dialect family. In this case, MCVSA develop into either voiceless aspirated stops only as in the Hakka dialects or into voiceless unaspirated stops only as in a number of dialects in the Xiang family.

6. Conclusion

The relationship between consonant types and tone has been widely discussed (Karlgren, 1915-1926; Haudricourt, 1954; Li, 1971; Ladefoged, 1971, 1973; Hyman, 1973; Maran, 1973; Matisoff, 1973; Ohala, 1973; Erickson, 1975; Hombert, 1975; Hombert, Ohala, & Ewan, 1979). As both the production of phonation types and the production of tones involve the control of the laryngeal mechanisms which can cause change of the vocal cord length, the size of the glottis, and the amount of air flow or air pressure through and in the vocal tract, it is inadequate to discuss any aspects of tone, synchronic or diachronic, without referring to phonation types. While the literature focuses mainly on the effect of consonant types on tone, we are looking at the effect of tone on the diachronic development of consonant types. The major difference between our theoretical model and the other theories proposed in earlier studies (see Section 2 of this paper) is that ours is based on the assumption that phonation types and tone are closely related and the effect is bi-directional, while other theoretical models are based on arbitrary assumptions. We have proposed a theoretical model of the bifurcation of the MCVSA into aspirated and unaspirated reflexes after they become devoiced. According to our model, the MCVSA develop into voiceless aspirated reflexes if at the time of devoicing the tonal onset of

the vowel is low in the lower register, or into voiceless unaspirated stops if the tonal onset of the vowel is higher in the lower register. We refer to "the low tonal onset in the lower register" as the limit at which MCVSA is to become aspirated. Presently, we do not know what the pitch onset threshold at which MCVSA is to develop into aspirated after devoicing would be. Perhaps, a future physiological study may shed light on this aspect. If a dialect, such as Cantonese or Mandarin, at the time of devoicing, has in the lower register of the pitch range both low and higher tone onsets associated with the MCVSA, then the MCVSA bifurcate into aspirated and unaspirated reflexes within the dialect. If the tone onsets associated with the MCVSA in a dialect, such as Hakka, are all low in the lower register at the time of devoicing, then the MCVSA develop into voiceless aspirated reflexes only. However, if the tone onsets associated with MCVSA in a dialect, such as Changsha, are all higher in the lower register of the pitch range at the time of devoicing, then the MCVSA develop into voiceless unaspirated reflexes. And, in the case of the Min dialects, both the aspirated and unaspirated reflexes are associated with a single Middle Chinese *yang* tonal category. This may be because Proto-Min is assumed to have two series of voiced syllable initial stops, with one being plain and the other aspirated (Norman, 1973). Another possible explanation may be that the aspirated and unaspirated reflexes evolved from two different series of voiced stops, belonging to two different substrata in Min (pointed out to me by the reviewer).

We conclude that the sound change under question is conditioned by the tonal onset of the following vowel.

(Accepted for publication 19 November 1992)

Acknowledgement

I am grateful to Professor Mei Tsu-Lin for his generosity in having many long discussions with me and providing me with many important articles. I would like to thank an anonymous reviewer for his/her comments. Naturally, all errors are mine. The paper is partly based on my talk, "A phonetic explanation for a phonological pattern in Cantonese", given at the XIX International Conference on Sino-Tibetan Languages and Linguistics at the Ohio State University, Columbus, Sept. 12-14, 1986.

REFERENCES

- Arnold, G. (1961). "Physiology and pathology of the cricothyroid muscle". *Laryngoscope*, 71.687-753.
- Atkinson, J. (1973). Aspects of Intonation in Speech: Implications from an Experimental Study of Fundamental Frequency. Ph.D. dissertation (Univ. of Connecticut).
- Atkinson, J. (1978). "Correlation analysis of the physiological factors controlling fundamental voice frequency". *Journal of Acoustical Society of America*, 63.1.211-222.
- Cao, Jian-Fen. (1982). "Changyinsha hua gu quanzhuo shengmu de fayin tedian" (The characteristics of the ancient initial voiced consonants in Changyinsha dialect). *Zhongguo Yuwen*, 167.273-278.
- Cao, Jian-Fen & I. Maddieson. (1992). "An exploration of phonation types in Wu dialects of Chinese". *Journal of Phonetics*, 20.77-90.
- Chao, Yuen-Ren. (1928). *Studies in the Modern Wu-Dialects*. Tsing Hua

- College Research Institute, Monograph 4. Peking, Tsing Hua College Research Institute.
- Chao, Yuen-Ren. (1935). "Types of plosives in Chinese". *Bulletin of the Institute of History and Philology*, 5.4.515-520. (English version published in the *Proceedings of the 2nd International Congress of Phonetic Sciences*.)
- Chao, Yuen-Ren. (1947). *Cantonese Primer*. N.Y., Greenwood Press.
- Chen, Matthew Y. (1976). "From Middle Chinese to Modern Peking". *Journal of Chinese Linguistics*, 4.2/3.
- Chen, Matthew Y. (1986). "From Middle Chinese to Modern Cantonese (Part 1)". *Journal of Chinese Linguistics*, 12.1.148-197.
- Cheng, Teresa M. (1973). "The phonology of Taisan". *Journal of Chinese Linguistics*, 1.2.256-322.
- Ding, Sheng-Shu. (1984). *Hanyu Yinyun Jiangyi*. Shanghai, Jiaoyu Chubanshe.
- Dixit, R. P. (1975). *Neuromuscular Aspects of Laryngeal Control: with Special Reference to Hindi*. Ph.D. dissertation (University of Texas).
- Dong, Tong-He. (1980). *Hanyu Yinyun Xue*. Taipei, Wen Shi Zhe Chubanshe.
- Edkins, J. (1853). *A Grammar of Colloquial Chinese as Exhibited in the Shanghai Dialect*. Shanghai, Presbyterian Mission Press.
- Erickson, D. M. (1975). "Phonetic implications for an historical account of tonogenesis in Thai". in *Studies in Thai Linguistics in Honor of William J. Gedney*, ed. by J. G. Harris & J. R. Chamberlain, 100-111. Bangkok, Central Institute of English Language.
- Ewan, W. G. & Krones, R. (1974). "Measuring larynx movement using the thyroumbro-meter". *Journal of Phonetics*, 2.327-335.
- Ewan, W. G. (1979). *Laryngeal Behavior in Speech*. Ph.D. dissertation (UC Berkeley), also UC Berkeley, Report of the Phonology Laboratory,

No.3.

- Fant, G. (1983). "Preliminaries to analysis of the human voice source". *Quarterly Progress Report*, Speech Transmission Laboratory, Royal Institute of Technology, Stockholm, 1982.4.1-27.
- Gandour, J. (1974). "Consonant types and tone". *Journal of Phonetics*, 2.337-350.
- Gao, Hua-Nian. (1980). *Guangzhou Fangyan Yanjiu*. Hong Kong, Shangwu.
- Hashimoto, O. K. Yue. (1972). *Phonology of Cantonese*. Cambridge University Press.
- Haudricourt, A.-G. (1954). "De l'origine des tons en vietnamien". *Journal Asiatique*, 242.68-82.
- Hirano, M., W. Vennard, & J. Ohala. (1970). "Regulation of register, pitch and intensity of voice: an electromyographic investigation of intrinsic laryngeal muscles". *Folia Phoniatica*, 22.1-20.
- Hombert, J. M. (1975). *Toward a Theory of Tonogenesis: an Empirical, Physiologically and Perceptually-based Account of the Development of Tonal Contrasts in Language*. Ph.D. dissertation (UC Berkeley).
- Hombert, J. M., J. J. Ohala, & W. G. Ewan. (1979). "Phonetic explanations for the development of tones". *Language*, 55.1.37-58.
- Huggins, C. & Stetson, R. H. (1935). "Voicing of consonants by depression of larynx". *Archives Neerlandaises de Phonetique Experimentale*, 11.1-28.
- Hyman, L. M. (1973). *Consonant Types and Tone*. Southern California Occasional Papers in Linguistics, No.1. Los Angeles, Linguistics Program, USC.
- Jespersen, O. (1889). *The Articulation of Speech Sounds Represented by Means of Alphabetic Symbols*. Marburg, Elwert.
- Jones, D. & Woo K. T. (1912). *A Cantonese Phonetic Reader*. London.

University of London Press.

Kagaya, R. & Hirose, H. (1975). "Fiberoptic, electromyographic, and acoustic analyses of Hindi stop consonants". *Annual Bulletin of the Research Institute of Logopedics and Phoniatrics*, 9.27-46.

Karlgren, B. (1915-26). *Etudes sur la phonologie chinoise*. Archives d'Etudes Orientales, Stockholm, Norstedt. (Chinese translation, 1940, by Y. R. Chao & F. K. Li).

Karlgren, B. (1954). "Compendium of phonetics of Ancient and Archaic Chinese". *Bulletin of the Museum of Far Eastern Antiquities*, 26.211-367.

Kastuki, Y. (1950). "The function of the phonatory muscles". *Japan Journal of Physiology*, 1.29-36.

Ladefoged, P. (1971). *Preliminaries to Linguistics Phonetics*. Chicago, University Chicago Press.

Ladefoged, P. (1973). "The features of the larynx". *Journal of Phonetics*, 1.73-83.

Li, Fang-Kuei. (1971). *A Handbook of Comparative Tai*. Honolulu, University of Hawaii Press.

Li, Rong. (1982). *Yinyun Cungao*. Beijing, Shangwu Yinshuguan.

Lisker L. & A. S. Abramson. (1964). "A cross-language study of voicing in initial stops: acoustical measurements". *Word*, 20.384-442.

Lo, Ch'ang-P'ei. (1956). *Xiamen Yinxi*. Beijing, Kexue Chubanshe.

Luh, Chi-Wei. (1947). *The Phonology of Ancient Chinese*. *Yenching Journal of Chinese Studies*, Monograph Series 20. Peiping, Harvard-Yenching Institute, Yenching University.

Maddieson, I. (1984). *Patterns of Sounds*. London, Cambridge University Press.

Maran, L. R. (1973). "On becoming a tone language: a Tibeto-Burman model

- of tonogenesis". In L. Hyman (ed.), *Consonant Types and Tone*. Southern California Occasional Papers in Linguistics, 1.97-114.
- Matisoff, J. A. (1973). "Tonogenesis in Southeast Asia". In L. Hyman (ed.), *Consonant Types and Tone*. Southern California Occasional Papers in Linguistics, 1.91-95.
- Mei, Tsu-Lin. (1970). "Tones and prosody in Middle Chinese and the origin of the Rising Tone". *Harvard Journal of Asiatic Studies*, 30.86-110.
- Mei, Tsu-Lin. (1982). "On the rising tone". *CHHP*, 14.1/2.233-241.
- Norman, J. (1973). "Tonal development in Min". *Journal of Chinese Linguistics*, 1.2.222-238.
- Norman, J. (1988). *Chinese*. N.Y., Cambridge University Press.
- Ohala, J. J. (1970). Aspects of the control and production of speech. Ph.D. dissertation (UCLA).
- Ohala, J. J. (1972). "How is pitch lowered?". *Journal of Acoustical Society of America*, 52.124.
- Ohala, J. J. (1973). "The physiology of tone". In L. Hyman (ed.), *Consonant Types and Tone*. Southern California Occasional Papers in Linguistics, 1.1-14.
- Ohala, J. J. (1976). "A model of speech aerodynamics". *Report of the Phonology Laboratory*, Berkeley, 1.93-107.
- Ohala, J. J. (1981). "The listener as a source of sound change". *Papers from the Parasessing of Language and Behavior*, Chicago Linguistics Society, May, 1981.
- Pulleyblank, E. G. (1969-70). "Late Middle Chinese". *Asia Minor*, Ser.3, 15. 197-239.
- Pulleyblank, E. G. (1978). "The nature of the Middle Chinese tones and their development to early Mandarin". *Journal of Chinese Linguistics*, 6.173-

- Pulleyblank, E. G. (1984). *Middle Chinese: a Study in Historical Phonology*. Vancouver, University of British Columbia Press.
- Ren, Nian-Qi. (1987). "An acoustic study of Shanghai stops." Unpublished manuscript. Department of Linguistics, University of Connecticut, Storrs.
- Ren, Nian-Qi. (1992). "A fiberoptic and transillumination study of Shanghai stops." Paper to appear in E. Zee & Yu Ru-Jie (eds.), *Wuyan Yanjiu*, Proceedings of the International Conference on Wu Dialects, 1988, the Chinese University of Hong Kong, Hong Kong.
- Sagart, L. (1981). "Aspiration-conditioned tone-lowering in Chinese dialects". Paper presented at the 14th International Conference on Sino-Tibetan Languages and Linguistics, Gainesville, Oct. 31-Nov.1, 1981.
- Sagart, L. (1986). "On the departing tone". *Journal of Chinese Linguistics*, 14.1.90-112.
- Vance, T. J. (1977). "Tonal distinctions in Cantonese". *Phonetica*, 34.93-107.
- Wang, Li. (1985). *Hanyu Yuyin Shi*. Beijing, Academy of Social Sciences.
- Wong, S.-L. (1941). *A Chinese Syllabary Pronounced According to the Dialect of Canton*. Hong Kong Zhonghua.
- Xiong, Zhen-Hui. (1979). "The tonal system of the Nanchang dialect and its historical development". *Fangyan (Chinese Dialects)*, 1979.4.275-283.
- Yang, Shih-Feng. (1974). *Report on a Survey of the Dialects of Hunan*. Institute of History and Philology of Academia Sinica, Special Publication No.66.
- Yu, Ming. (1987). "Beijingshua quanzhuo pinsheng songqi jie". *Fangyan*, 1987.1.15-16.
- Yuan, Jia-Hua, et al. *HYFGY (Hanyu Fangyan Gaiyao)*, 2nd ed. (1983).

Beijing, Wenzhi Gaige Chubanshe.

- Zee, E. (1980). "Effect of aspiration on fundamental frequency in Cantonese". *UCLA Working Papers in Phonetics*, 49.
- Zee, E. (1988). "A spectrographic investigation of stop initials in Shanghai". Paper presented at the International Conference on Wu Dialects, the Chinese University of Hong Kong, Hong Kong, 1988.
- Zhan, Bo-Hui & Cheung Yat-Shing. (1987). *A Survey of Dialects in The Pearl River Delta; Vol. 1. Comparative Morpheme-syllabary*. Hong Kong, New Century Publishing House.
- Zhang, Hong-Ming. (1987). "Hanyu Jintishi - Shenglu Moshi De Wuzhi Jichu". *Zhongguo Shehui Kexue*, 46.4.185-196.

Post-stopped Nasals and Lateral Flaps in the Zhongshan (Yue) Dialect: A Study of a Mid-eighteenth Century Sino-Portuguese Glossary

Marjorie K. M. Chan
The Ohio State University

A mid-eighteenth century Sino-Portuguese glossary serves as the source for the present study of Zhongshan Chinese spoken in Macao during that period. Of particular interest is the use of sonorants in the glossary to transcribe Portuguese voiced stop onsets, and what that reveals about the phonetics and phonology of eighteenth century Zhongshan speech. It is proposed here that the choice of Zhongshan sonorants (nasals and /l/) to transcribe the corresponding Portuguese voiced stops (/b/, /d/, /g/) is neither accidental nor haphazard; rather, it likely reflects some kind of post-oralization in the production of syllable-initial Zhongshan sonorants. The post-stopping phenomenon is still observed in modern Zhongshan speech, and can also be found in other modern Yue dialects such as Taishan and Kaiping. It is proposed in this paper that post-oralization, creating post-stopped nasals and some kind of lateral flap, is a conservative feature of Zhongshan that dates back at least to the mid-eighteenth century. The phenomenon was probably an areal one that included the neighbouring Siyi district in which Taishan and Kaiping are spoken today.

0. Introduction

One normally assumes that nasals and laterals are very different from

stops with respect to their manner of articulation; after all, they are sonorants, while stops are obstruents. Their differences are blurred, however, when they are produced with secondary articulation. Thus, a sonorant can acquire a stop-like quality to its production through the articulation of that segment with oral release or a burst release that sounds like a stop.

Among the Chinese dialects, nasal consonants in syllable-initial position have often been described as segments that are produced with oral release: the velum is raised prior to vowel onset, producing a nasal followed by a homorganic voiced stop (e.g., [m^b, n^d]). Such post-stopped nasals have been noted in many descriptions of different Chinese dialects, including Northwest Mandarin, Kejia, and Yue (Chan 1987, 1990). A burst release can also produce a stop-like sound, as in the modern Zhongshan Yue dialect (Chan 1987, 1990). The burst release is probably the result of the sudden change in oral cavity area when two surfaces that had been in contact at the place of articulation pull apart quickly; or it may be from the striking of one articulator against another in passing to produce a kind of flap (Peter Ladefoged, personal communication). Given the stop-like quality in the perception of such nasals, it is not surprising that they have been employed in the history of the Chinese language for transliterating foreign voiced stops when the language no longer possesses a voicing contrast in its stop series.

Syllable-initial /l/ can also acquire a stop-like quality, as in some studies of Southern Min Chinese dialects surveyed in Chan (1987). It is described as flap-like, or sounding like a [d]. This 'lateral flap' quality appears to be unique to Southern Min and has not been reported elsewhere among the Chinese dialects, past or present. At this point, it is instructive to cite Douglas' (1899:xii) description of /l/ in Amoy (Xiamen), the representative dialect for Southern Min, and note the role that /l/ plays in the

pronunciation of foreign /d/: "l is often pronounced in a very thick indistinct manner, approaching to the sound of d, so much so that as the language of Amoy has no proper d, the Amoy people usually employ a syllable beginning with l when trying to imitate a foreign word beginning with d." The transliteration of a foreign /d/ using a lateral flap would simply be an extension of this if one's phonological system lacks a voiced dental/alveolar stop.

In this study, our focus is on the Zhongshan 中山 dialect of Chinese -- how it transcribed foreign voiced stops and what that tells us about the nature of the segments that were used to transcribe those foreign sounds. The claim here is that the selection of sonorants to transliterate voiced stops in Portuguese earlier in the history of the Zhongshan dialect arises from the stop-like production of those segments in Zhongshan. Such stop-like production of nasals (though not /l/) is still found in modern Zhongshan, as well as in the surrounding rural areas such as Taishan and other Siyi dialects, albeit ostensibly absent in standard Cantonese, spoken in Canton City and Hong Kong (Chan 1987, 1990). Strictly on the basis of the modern dialects, it is impossible to determine if post-oralization of nasals in some Yue dialects is a conservative or innovative feature. However, there exists transcriptional evidence, based on a mid-eighteenth century Sino-Portuguese glossary, to suggest that the former is the case -- that post-stopping of syllable-initial nasals in Zhongshan dates back at least to the eighteenth century. This conclusion probably also holds for other Yue dialects, such as Taishan and its neighbours, which exhibit other conservative features since lost in standard Cantonese. That same glossary also provides evidence to suggest that Zhongshan /l/ was sometimes produced with a stop-like quality, a feature that has never been reported in any of the descriptions of the

modern Yue dialects.

In this paper a systematic study will be conducted of the glossary to determine the extent to which sonorants (nasals and /l/) were used to transcribe Portuguese voiced stops, and to draw some preliminary conclusions concerning eighteenth century Zhongshan speech. The glossary is particularly important in revealing, for the first time, the production of lateral flaps (or flap-like laterals) in dialects other than Southern Min. It is also important to realize that the glossary was probably used by the local Chinese in Macao and the surrounding Zhongshan district (then called Xiangshan district) to communicate with the Portuguese living and working in Macao at that time, and is, hence, the earliest source available to date on the phonetics and phonology of the Zhongshan dialect. Precisely because the glossary used the local Zhongshan dialect as the dialect base for transliterating the Portuguese words and phrases, it is an invaluable source for clues to the pronunciation of the local Chinese dialect of that period.

In section one of this paper, the types of sources that can provide clues on the earlier sounds of a language will be discussed and exemplified, together with a brief background on evidence of post-stopped nasals in the earlier history of the Chinese language. Section two then presents the glossary, its background and layout, as well as methodology and related issues. Section three analyzes the data, and section four concludes the paper.

1. Two Types of Sources for Evidence of Post-stopped Nasals in the Earlier History of the Chinese Language

In the descriptions of modern Chinese dialects published in the twentieth century, Chan's (1987, 1990) survey encountered explicit

statements of syllable-initial nasals in some dialects as being produced with oral release, transcribed phonetically with or without superscripting of the homorganic voiced component (e.g., [m^b] or [mb]). In the earlier records of the Chinese language, there exists no explicit statements on the post-oralization of nasals. As a result, the evidence for this phenomenon can only be inferred. There exists two main types of sources for that purpose. One type of source is the transcription of foreign words and phrases into Chinese using Chinese characters. The second is the other side of the coin, namely, the transcription into a foreign language of Chinese words and phrases. Both of these sources have been used by Henri Maspero in his study of the speech of the Tang dynasty capital, Chang'an (today's Xi'an, in Shaanxi Province, northwestern China). The documents provide evidence that Late Middle Chinese (LMC), the new standard for the Chinese language based on Chang'an speech of eighth to tenth century, had nasal phonemes that were phonetically realized with post-oralization in syllable-initial position (Pulleyblank 1984:68).

Evidence for post-oralization of the nasals in LMC can be found in three sets of sources presented in Maspero's article: one, transcriptions of Sanskrit into Chinese in Buddhist texts; two, transcriptions of Tibetan into Chinese in a Tibetan-Chinese interlinear manuscript from Dunhuang (in Gansu Province); and three, Kan'on readings of Sino-Japanese loanwords. In the first two sets of sources, voiced stops in syllable-initial position of the source words in Sanskrit and Tibetan were regularly transcribed using Chinese characters beginning with nasals. At the same time, Sino-Japanese loanwords of that period reveal that Chinese syllables beginning with a nasal segment were given a corresponding voiced stop pronunciation in Kan'on

readings.¹ To account for this systematic pattern of transcription, Maspero (1920:36) suggested that these nasals must have been produced with oral release at that stage, and cited modern Chinese dialects in Shanxi and Shaanxi provinces which still preserved such pronunciations. The examples in (1) from Maspero (1920:30-31) illustrate how the Chinese sources transcribed Sanskrit syllables beginning with a voiced stop. The relevant segment is the first syllable in each example. As an aid for comparison, the Sanskrit syllables in each word are divided by a period (.) according to the syllable divisions of the Chinese characters. The stage of the language is identified here specifically as Late Middle Chinese, in contrast to Early Middle Chinese, which did not exhibit post-stopping of nasal initials.

| (1) | Chinese LMC | Chinese character | Phonetic value | Sanskrit segment | Sanskrit word | Chinese transcription |
|-----|----------------|----------------------|-------------------|---------------------|------------------|--------------------------|
| a. | *m- | 沒 | mb- | b- | bud.dhe.na | 沒弟囊 |
| b. | *n- | 禰 | nd- | d- | de.vah | 禰務 |
| c. | *ŋ- | 虞 | ŋg- | g- | gu.ru | 虞盧 |

The examples in (2) from Maspero (1920:34) provide the other type of evidence, namely clues from foreign loans of Chinese vocabulary. In the Sino-Japanese words in (2), syllable-initial nasals in Chinese are pronounced with the corresponding voiced stops in the Kan'on readings.

| (2) | Chinese LMC | Chinese character | Phonetic value | Japanese segment | Kan'on reading |
|-----|----------------|----------------------|-------------------|---------------------|-------------------|
| a. | *m- | 馬 | mb- | b- | ba |
| b. | *n- | 那 | nd- | d- | da |
| c. | *ŋ- | 我 | ŋg- | g- | ga |

Subsequent studies of ninth and tenth century documents found in

1 To keep the description simple, excluded from discussion is the Ri initial, the EMC palatal nasal that became a denasalized retroflex continuant in LMC (Pulleyblank 1984:68).

northwestern China (Luo 1933, Coblin 1989) provide further corroborative evidence of post-stopping of nasals in LMC, with evidence of continuance of that phenomenon in northwestern China obtained from a late twelfth century, Chinese-Tangut source (Gong 1981). It is worth keeping in mind that the literary layer of Zhongshan and other Yue dialects is derived from LMC. The post-oralization of syllable-initial nasals in modern Zhongshan, Kaiping, and other Yue dialects may thus be a preservation of a phonetic feature of LMC nasals.

2. The Mid-eighteenth Century Sino-Portuguese Glossary

Evidence for post-stopped nasals and a flap-like /l/ in the earlier history of the Zhongshan Yue dialect is of the first type discussed in section one; namely, from Zhongshan transcriptions of foreign words. The data for this study comes from a Sino-Portuguese glossary that is included at the end of the *Aomen Jilue* 澳門記略 (Sketch Notes on Macao), a text written in the eighteenth century in Macao by two Chinese officials, Yin Guangren 印光任 and Zhang Rulin 張汝霖. Particularly useful background on the book and its authors is given in Boxer (1948:283ff), including information on its popularity, as attested by its subsequent editions in 1800 and 1884, its numerous reprints in the nineteenth century, and its translation into Japanese in the early nineteenth century by a Tokugawa scholar, Kondo Morishige.

Here, only a brief introduction of the book will be provided. As per his postface, Yin was appointed to supervise the troops at the Chinese guard-post at Qianshan near Macao in 1743. He completed the draft of the book in

1746 and passed it on to Zhang (1709-1769), who succeeded him in the post. Zhang made numerous additions and deletions to the manuscript, which was ultimately published, with a preface by him dated 1751. Published in 1751 or soon thereafter, it was then reprinted (more precisely, re-engraved) from new woodblocks in 1800, with reprints of the 1800 edition made on several occasions during the nineteenth century. The 1800 edition is used in this study.² The physical layout and information provided in the glossary is presented next, followed by a discussion of the dialect base for the glossary.

2.1. Layout of the Glossary

The glossary contains 395 Portuguese words and phrases, divided into five sections under the following subject categories:

- (3) 1. Heaven and Earth Category 4. Implements and Numbers Category
2. Men and Things Category 5. Common Expressions Category
3. Clothing and Food Category

The layout of the glossary is very simple, with only Chinese characters given for each entry. Two different font sizes were used in the printing to distinguish two different sets of information: a larger font for the gloss in

2 The 1800 edition of the *Aomen Jilue* reproduced in 1968 in the *Zhongguo fangzhi congshu* (number 109), Chengwen Chubanshe, Taipei, serves as the primary source in this paper. It is also the source used by Boltz (1977), although his sample page of the glossary is from a different reprint. Bawden (1956) consulted more than one printed source, including a manuscript copy of the *Aomen Jilue* housed in the School of Oriental and African Studies in London. He does not, however, state explicitly the edition he used for listing the 395 entries in his article, together with the 'reconstructed' Portuguese words and English glosses. A comparison of our list with his shows some discrepancies between the two sources. Another copy of the *Aomen Jilue*, reprinted by Guangwen Shuju in 1968 in Taipei, has also been consulted for this study. A comparison among the three sources show some discrepancies, with differences generally reflecting small printing errors in one or more sources. Some differences that are more significant will be highlighted later.

Chinese of the Portuguese words, and a smaller font for the Chinese characters used to transliterate the Portuguese. The second entry, for example, has only the following information: 日 (in larger font), and 梭爐 (in smaller font); that is, the Chinese word for 'sun' is pronounced in Portuguese somewhat like the concatenation of the two syllables, /so/ and /lu/, as the two Chinese characters 梭 and 爐 are pronounced in Zhongshan Chinese, to transliterate Portuguese *sol*. Bawden (1954:17) has also suggested that the Portuguese pronunciations given in the glossary were taken down from speech, based on the Portuguese spoken in Macao at that time, rather than from written materials. Note that the above example could just as easily have been based on Mandarin (*suolu* in Pinyin romanization, for example), or standard Cantonese (/so lou/). Arguments to support the claim that the dialect base is Zhongshan, and not Mandarin, standard Cantonese, or some other Chinese dialect, will be presented below.

2.2. Zhongshan Yue Dialect as the Dialect Base for the Glossary

The glossary, as noted earlier, is our earliest source on the Chinese spoken in Macao and is thus a valuable historical document.³ The transliteration of Portuguese simply uses Chinese characters, so that the dialect base could as easily have been Mandarin since neither author of the *Aomen Jilue* was likely to have been a Yue dialect speaker. Yin Guangren was a native of Baoshan, Jiangsu Province, while Zhang Rulin was a native of Xuancheng, in Anhui Province. The dialect base is, however, not Mandarin but Yue, for reasons that will be outlined below. For Bawden (1956:16), the

3 Bawden (1954) notes that this glossary is probably the earliest historical record of the Portuguese spoken in Macao, antedating subsequent sources by a century, and is thus also invaluable for tracing the development and changes in the Macanese dialect of Portuguese.

fact that neither of the two authors speak a Yue dialect "points to a third, anonymous contributor to the book, who was probably himself a Cantonese." Evidence that the dialect base is, in fact, Yue -- and more precisely, the local Zhongshan Yue dialect -- comes from two main sources: one, the selection of a Chinese character that has uniquely been identified with the Yue dialect; and two, the choice of Chinese characters to render the corresponding Portuguese sounds that unequivocally reflect Yue dialect pronunciation and not Mandarin pronunciation. It is also important to note that there is no compelling reason to explore yet a third possibility, namely, that the glossary reflects an indiscriminant mixing of Yue and Mandarin pronunciations. The earlier study of the glossary by Bawden (1954), in which standard Cantonese transcriptions were included for each entry, makes it amply clear that a Yue dialect was chosen as the dialect base, though Bawden (1954:16) may be correct in suggesting that the retroflex pronunciation of *er* 而 in a few of the entries would more closely transliterate the Portuguese -r coda, as in entry 316: 崩巴而大 (modern Zhongshan /paŋ pa ŋi tai:/, standard Cantonese /paŋ pa ji tai:/) for *bombarda* 'cannon'. Such exception aside, it will be demonstrated in this subsection that the dialect base for the glossary is, first of all, Yue, and then, more specifically, the local Zhongshan Yue dialect spoken in Macao.

In the selection of Chinese characters to transcribe Portuguese in the entries, the most tell-tale sign that a Yue dialect is used for pronouncing the Portuguese words is the frequent use of the character 孖 for transcribing the Portuguese syllable, /ma/, as in entry 48 for 海 'sea' in the glossary: 孖喇 (/ma la/ in Zhongshan) for Portuguese *mar*, and entry 152 乳 'breast': 孖麻 (/ma ma/ in Zhongshan) for Portuguese *mama*. The pronunciation of /ma/ for the character, meaning 'twins' and used in everyday speech, is widespread

among the Yue dialects (Zhan and Cheung 1988:299). Even more importantly, the pronunciation of the character as /ma/ is unique to the Yue dialects, thus marking the dialect base as indisputably Yue. While that character has long been obsolete in northern Chinese, it does appear in the *Guangyun*, and with the meaning of 'twins'. Two readings are given there: a Ping-tone reading that is homophonous with *zi* 字, and a Qu-tone reading homophonous with *zi* 茲. Given the lack of sound correspondences between the *Guangyun* readings and the Yue dialect pronunciation for the character, whether that character was borrowed from the standard language for its meaning, or re-invented by the Yue dialect speakers, cannot be ascertained without further research. The sound differences suffice for the present purpose to uniquely identify the reading of /ma/ for the character as that belonging to the Yue dialect of Chinese. Further support that the dialect source is a Yue dialect include such evidences as the dentilabialization of (Early/Late) Middle Chinese *k'- in the Yue dialects. The change of *k' to f in standard Cantonese, Zhongshan, and other Yue dialects, is reflected in the selection of 科 (< *k') to transcribe Portuguese /fo/ in *fora* 'outside' in entry 375: 科立 (Zhongshan and standard Cantonese /fo lap/).

Having established that the dialect base is Yue, one still needs evidence to demonstrate that the dialect is not simply standard Cantonese, but the local Zhongshan dialect spoken in Macao. For Bawden and other scholars interested in 'reconstructing' the original Portuguese in the glossary, any Yue dialect sufficed for giving them clues to determine the original Portuguese words. The dialect source was, in fact, the Zhongshan variety, as argued in Chan (1982:107) on historical, political, geographical, and linguistic grounds. Macao was historically part of Zhongshan district, due not surprisingly to the fact that it is geographically contiguous to Zhongshan district. Boxer (1948:

10) has also noted that "the Magistrate of the Hsiangshan or Heungshan district in which Macao lies, claimed a vague and undefined jurisdiction over the Chinese inhabitants of the place, which was enforced to a greater or lesser degree in accordance with the strength of the Portuguese." The district was formerly called Xiangshan 香山, meaning 'fragrant mountain', and variously romanized as Hsiangshan, Heungshan, and Hǒng Shan.⁴ The district capital is Shiqi, or Shekki, with the speech there forming the standard for the Zhongshan dialect today. In his article, J. Dyer Ball (1896-97), in fact, treated the Macao dialect as representative of Zhongshan speech. Moreover, he used the Macao pronunciation as the base for the Xiangshan dialect, and included the Shiqi pronunciations wherever it deviated from the Macao ones.⁵

In his article, Ball also noted differences between the Macao dialect and standard Cantonese. Particularly noteworthy with respect to the Sino-Portuguese glossary is his observation of the loss of the distinction in Macao between labialized and non-labialized velar plosives (i.e., /k/ vs. /kʷ/, and /k'/ vs. /k'ʷ/). In the late nineteenth century Macao dialect recorded by Ball, the distinction was lost completely in all environments. In the modern Zhongshan dialect spoken in Shiqi, that distinction is lost before non-low vowels (viz., /o/), but still preserved before /a/ and /a:/ (Chao 1948, Chan 1980). Crucially, the Zhongshan dialect in Macao and Shiqi differ

4 Xiangshan was the name for Zhongshan district from the beginning of the Song dynasty until it was renamed Zhongshan in 1925. Since the district was Dr. Yat-sen Sun's birthplace, it was renamed to commemorate him. "Zhongshan" is the Chinese pronunciation of his Japanese name, "Nakayama", which he adopted while seeking political asylum in Japan.

5 Subsequent studies of the Zhongshan dialect, such as Chao (1948), Egerod (1956) and Chan (1980) use Shiqi pronunciations as the standard for the Zhongshan dialect.

from standard Cantonese in having lost (partially or totally) that contrast. It is thus significant to find that the eighteenth century Sino-Portuguese glossary behaves more like modern Zhongshan than standard Cantonese in having partial loss of distinction; that is, the preservation of the contrast before /a/ and /a:/ and its loss before non-low vowels. Consequently, syllables with *k-, as in 哥, 歌, 個 (corresponding to standard Cantonese /ko/) and *kw-, as in 果, 過 (corresponding to standard Cantonese /k^wo/) are used indiscriminately to transcribe Portuguese non-labialized segments.⁶

Another difference between standard Cantonese and Zhongshan involves Middle Chinese *l- and *n-. The lack of confusion between the two historical initials in Zhongshan can be observed in the glossary as well as in modern Zhongshan speech (Chan 1980). The same is not true of standard Cantonese. These and other differences between the two Yue dialects provide ample evidence that the glossary reflects the Zhongshan variety of Yue and not standard Cantonese.

Aside from the geographical, political, and linguistic evidence given above, one should also take into consideration the purpose of the glossary. Practically speaking, the Portuguese glossary could have served as a form of pidgin Portuguese for the local Chinese in Macao, enabling them to communicate, however haltingly, with the Portuguese on matters of business and daily affairs. The popularity of the book, with its numerous reprints, must have been readily available for facilitating daily transactions between the Portuguese and local Chinese in Macao during the eighteenth century and

6 The loss of the contrast between plain and labialized velar stops before non-low vowels observed in standard Cantonese spoken in Hong Kong (cf. Zhan and Cheung 1987) is undoubtedly due to dialect mixture from speakers of dialects such as Zhongshan, Zhuhai and other Yue dialects that lack this contrast.

well into the nineteenth century.

The glossary in the *Aomen Jilue* probably predates similar lists for Chinese pidgin English used in Canton City and elsewhere along the southern China coast during that period. The glossary thus provides important data on an earlier stage of this dialect spoken in the district of Zhongshan. It is worth noting that while this glossary contains only words and phrases in Portuguese (though the lexical items themselves may sometimes be of non-European origin), Chinese pidgin English as a contact language contains expressions in English as well as in other European languages. Consider, for instance, the entries in the *Hongmao Tongyong Fanhua* 紅毛通用番話 (Red-haired common foreign language), a glossary dating probably from the nineteenth century.⁷ The word for 'priest', for example, was glossed as 和尚, and transliterated using the Chinese characters 吧地利 (/pa tei lei/ in standard Cantonese, /pa ti li/ in Zhongshan) for *padre*, which comes from Portuguese, Spanish, or some other Romance language. The selection of the sound, /lo/, to transliterate the first syllable of 'orange (fruit)': 囉欄治 /lo la:n tsi/ (in both standard Cantonese and Zhongshan), can only be explained as based not on English, but on a Romance language (cf. Portuguese *laranja* in entry 192 of the Sino-Portuguese glossary: 喇蘭茶 /la la:n ts'a/. Similarly, the word meaning 'understand', glossed as 曉得, was transliterated using the characters 沙鼻 (/sa pei/ in standard Cantonese, /sa pi/ in Zhongshan), based most likely on some form of Portuguese *saber* 'to know'.

7 Thanks go to Dingxu Shi for giving me a copy of that source, containing close to 400 entries, with most Chinese glosses given English pronunciations using Chinese characters, similar to the type of information given in the Sino-Portuguese glossary, including separation into several categories such as 'business and numbers', 'common expression of people and things', etc.

2.3. Methodology: Portuguese Syllabification and Zhongshan Transliteration

Having provided evidence that the dialect base of the Sino-Portuguese glossary is Zhongshan, the next task is to obtain the Zhongshan pronunciation of the Chinese characters used to spell the Portuguese words, the latter based primarily on ‘reconstructions’ by Bawden (1954), which include those of his predecessor, L. Gomes (1950).⁸ The Zhongshan pronunciation used in the current study is based on the investigator’s knowledge of the Zhongshan dialect from previous research (Chan 1980, 1982), and consultation of earlier works on Zhongshan (Ball 1897, Chao 1948, Egerod 1956). For the systematic study of the glossary, the 395 Portuguese entries were transcribed into Zhongshan pronunciation using a native Zhongshan speaker.⁹ Earlier pronunciations from published sources are

8 While most Portuguese forms are from Bawden’s (1954) article, which contains ‘reconstructions’ by Bawden, building on work by Gomes (1950), some forms come from Thompson (1959), who includes modern Macanese Portuguese spoken in Hong Kong. A few forms are also supplied from Boltz (1977). For example, entry 203, is glossed as 木香 ‘putchuck, starwort’, with the Portuguese word transliterated into Chinese as 教打 (/ka:u ta/ in standard Cantonese and Zhongshan). Bawden (1954:27, fn.3) tentatively suggests the Portuguese word *côsto* (with no English gloss), noting that Gomes has no solution for this entry. On seeing the lack of phonetic match in Bawden’s *côsto* for the entry, Boltz (1977:449) offers Portuguese *gauda* ‘dyer’s weed, weld [the etymological cognate], mignonette’. The present corpus assumes *gauda* for the entry. This example is also instructive in recognizing the difficult task of reconstructing the original Portuguese on which the transliterations were based. The English glosses given here are simply translations of the Chinese entries, and not translations of the Portuguese words, which may match the Chinese sounds but deviate sometimes in meaning from the Chinese glosses. Stress assignment on the Portuguese words, largely predictable, is also indicated overtly in the relevant examples here.

9 The transcriptions were made in 1978 in Vancouver, Canada, using Chee-fong Young, a fifty-odd year-old Zhongshan speaker from Shiqi.

noted where relevant. The Zhongshan transcriptions thus replace the standard Cantonese ones used in previous studies of the glossary.

The focus of this study is the set of voiced stops in Portuguese and how they had been transliterated into the Zhongshan dialect of eighteenth century Macao. Syllable-initial liquids will also be investigated. In syllabifying the Portuguese syllable, the glossary appears to have adopted the principle of maximization of syllable onset. Hence, a word such as *chuva* 'rain' (entry 7) is syllabified as *chu.va* and not *chuv.a* to enable *v* to be an onset of the next syllable. This also fits with the transliteration into permitted Zhongshan syllables for the word: 租華 /tsu wa/.

In the case of a word such as *sogro* 'father-in-law' (entry 104), it is syllabified as *so.gro* because *gr* can form an onset cluster in Portuguese, as can be observed in such words as *grande* 'large, great', *grosso* 'thick', and so forth. Because Zhongshan, or Chinese in general, does not tolerate initial consonant clusters such as *gr*, the cluster is broken into two syllables in transliteration. Thus, *sogro* is transliterated into three syllables in Zhongshan, /so ku lu/, using the following Chinese characters: 疎古盧. Observe that the Portuguese syllable, *gro*, is rendered in Zhongshan as /ku lu/, with the vowels identical in the two syllables. The vowel in /ku/ can be treated like an epenthetic vowel, needed simply to support the vocalization of /k/. This observation is reinforced by the Zhongshan transliteration of *sogra* 'mother-in-law' (entry 105): 疎架喇 /so ka la/. This time, the Portuguese syllable is *gra*; but again, the two syllables used to transcribe the segments have identical vowels: /ka la/. Thus, the selection of a particular syllable to transcribe the first consonant of a consonant cluster in Portuguese is neither arbitrary nor capricious.

In this study, our interest is primarily on the initial consonant of the

Portuguese syllables. Thus, although the liquid in words such as *sogro* and *sogra* is placed in syllable-initial position in a Zhongshan syllable, such liquids are not in the initial position of the syllable in Portuguese, and will not be included in our tabulations of liquid-initial syllables. Moreover, in the glossary, liquids (/l/ and /r/) occurring as part of a Portuguese consonant cluster is consistently transcribed in Zhongshan using /l/ (< *l-). This regular correspondence is noted here and will not be treated separately in this project.

A word such as *vento* ‘wind’ (entry 5) is syllabified in Portuguese as *ven.to* and not *ve.nto* since *nt* does not form an onset cluster in Portuguese. The same syllabification also holds for Zhongshan, since nasals can occur in coda position. The word is transliterated as: 挽度 /wa:n tu/.

Since nasals can close syllables in both Portuguese and Zhongshan, one often finds such nasals treated as ambisyllabic segments, as in the word, *ano* ‘year’ (entry 37); it is syllabified as *an.no* for transliteration purposes in Zhongshan: 晏奴 /an nu/.

Although stops can also occupy coda position in the syllable in Portuguese, as in the word *sob* ‘under, below’, they are rare in Portuguese, and do not show up in the glossary. If they did, they could be easily handled in Zhongshan, since the dialect has /p, t, k/ endings. In fact, the word *seco* ‘dry’ (entry 384) is transliterated as 錫故 /siak ku/, where Portuguese /k/ (orthographic ‘c’) is treated as an ambisyllabic segment and transcribed twice: in the coda of the first syllable, and the onset of the second. Similarly, *gordo* ‘fat’ (entry 394) is transliterated as 噶度 /kot tu/, with /r/ ignored. Portuguese /d/ is treated as an ambisyllabic /t/, occurring as a coda in /kot/ and onset in /tu/.

Liquids (/r/ and /l/) occur frequently in coda position in the

Portuguese syllable, as in *gordo* above, and in words such as *sol* 'sun' (entry 2), and *mar* 'sea' (entry 48) given earlier. Liquid codas are not typically ignored in the Zhongshan transcription, even though liquids do not serve as codas in the Zhongshan syllable. Portuguese syllables with a liquid coda are usually transcribed using two syllables in Zhongshan. The words *sol* and *mar*, for example, are transliterated as 梭爐 /so lu/ and 孖喇 /ma la/ respectively. As in the case of liquids forming part of consonant clusters, they are regularly transcribed using characters with initial /l/ (< *l-). Since these liquids are in syllable codas in Portuguese, they will also not be given separate treatment in the present investigation.

Other codas, such as /s/ and /z/ in Portuguese, are ignored here, since they are not germane to the topic under investigation. We turn now to some remaining problems to keep in mind in the study of the glossary.

2.4. The Corpus and Some Residual Problems

Not all 395 entries in the glossary -- numbered in this study for easy reference -- have been used. There are about a dozen entries for which scholars have been unable to reconstruct the Portuguese forms, whether in standard Portuguese or in modern Macanese Portuguese. Entries excluded from this study are listed in (4) below by entry number.

| | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| (4) | 49 | 59 | 237 | 238 | 267 | 278 |
| | 288 | 320 | 321 | 322 | 373 | 378 |

There are, furthermore, a few syllables within some entries which have been excluded in the corpus due to uncertainty of their reconstructed values in Portuguese. A case in point is entry 363, 告床 'accuse'. The Chinese characters transliterating the Portuguese are: 化知別地立 /fa tsi pit ti lap/. The Portuguese word given by Thompson (1959:51), *fazer*, reconstructs only the first two syllables in the entry; the remaining three syllables are thus

omitted from consideration in the current study since no scholar has yet proposed the Portuguese word(s) for those final syllables. Another example for partial exclusion pertains to the inexplicable use of /ku/ to transliterate Portuguese /do/ in entry 87, 兵 ‘soldier’, for Portuguese *soldado*. The source word is transliterated as 疏打古 /so ta ku/. Although the Portuguese word contains two /d/ syllable onsets, only the /d/ in the second syllable is counted towards the total number of /d/ onset syllables in the corpus.

Despite excluding the entries listed in (4), and a few partial entries, the remaining Portuguese entries, consisting of mostly polysyllabic words and phrases, provide a large body of data for the current project. Naturally, not all of the Portuguese syllables in the corpus contain a syllable-initial voiced stop. The corpus contains 57 occurrences of syllables with /b/ as the onset, 65 with a /d/ onset, and 30 with a /g/ onset. Portuguese syllables with other segments as onsets relevant to the discussion will be noted later.

The corpus for this study, however, is not without further problems or complications. There remains one final difficulty to contend with, namely the existence of variant characters for the same entries among different reprints. In some cases, the use of one character versus another in different reprints is inconsequential. This is the case when the characters are homophonous, such as the selection 些 versus 除 as the third character for entry 64, since they are both read as /sia/, in *Porta (do) Cerco*, transliterated as: 波打些 (or 除) 蘆古 /po ta sia lu ku/.

In most cases, the variant forms are due to typographical errors. Consider, for example, the use of 那 in one reprint and that of 邦 in another for entry 98. The word in the entry is ‘elder sister’, as given in (5), reconstructed as *mana* in standard Portuguese (Bawden 1954). Clearly, the Chinese character should have been printed as (5a) to yield /na/ and not

(5b), regardless of whether the pronunciation is in Zhongshan or in standard Cantonese.

(5) Entry number 98: 姐 'elder sister'. Portuguese *mana*.

| | Transliteration | Zhongshan |
|----|-----------------|-----------|
| a. | 萬那 | /man na/ |
| b. | 萬邦 | /man poŋ/ |

In other cases, there seems to be a consistent error across the various printings. For example, the Chinese character used to render the second syllable of Portuguese *casa* 'house' is printed as 自 /tsi/ in several entries, including entry 56, shown in (6a). The correct character should be 乍 /tsa/, which appears in entry 360, given in (6b). But the latter seems to have been overlooked by previous scholars working on this glossary.

| (6) | Gloss | Translit. | Zhongshan | Portuguese | Entry |
|-----|--------------|-----------|---------------|-----------------------------------|-------|
| a. | 屋 'house' | 家自 | /ka tsi/ | <i>casa</i> | 56 |
| b. | 回家 'go home' | 歪家乍 | /wa:i ka tsa/ | <i>vai (a) casa</i> ¹⁰ | 360 |

Further complications in variant characters, stemming from deliberate changes, or editing, in different reprints, will be noted where relevant. However, despite the problems cited above, the numerous problem-free entries provide valuable insight into the earlier pronunciation of the Zhongshan dialect spoken in Macao, particularly with respect to the topic under investigation, the pronunciation of stop-like sonorants in the dialect.

10 As noted in Thompson (1959:51, fn. 8), "Gomes writes the standard expression *vai a casa*. Bawden's reconstruction tallies with modern Hong Kong usage", which Thompson gives as [vai kaza] in modern Macanese, based on his fieldwork in Hong Kong. Reference is to Gomes (1950), which is not easily accessible (cf. Bawden 1954:15, fn.2). In it, Gomes translated the *Aomen Jilue* into Portuguese, and included a transliteration using standard Cantonese and a reconstruction of a majority of the Portuguese words.

3. Zhongshan Nasals and Laterals for Portuguese Voiced Stops: A Study of the Sino-Portuguese Glossary

The production of syllable-initial nasals with oral release in the modern Zhongshan dialect has been noted by Chao (1948:51), as well as by Egerod (1956:13), and Chan (1980:23).¹¹ The mid-eighteenth century Sino-Portuguese glossary reveals that the syllable-initial nasals in the Zhongshan dialect spoken in Macao at that time were not always simply plain nasals, but were sometimes nasals produced with oral release. This would then readily explain why Portuguese voiced stops were transliterated using syllables in Zhongshan beginning with a nasal segment. Of course, this does not preclude the use of voiceless stops in Zhongshan for transliterating Portuguese voiced stops, and in fact, that is what one finds in the majority of cases. The use of /p, t, k/ to transliterate the corresponding voiced stops in Portuguese can be readily explained, given the absence of a voicing contrast in Zhongshan. Although a voicing contrast was present in Early Middle Chinese, it was partially lost by Late Middle Chinese (e.g., EMC *d- > LMC *tʰ-). Transcriptional evidence from the Sino-Portuguese glossary suggests that mid-eighteenth century Zhongshan Chinese no longer has a voicing contrast among its obstruents. Stops that were historically voiced were used to transliterate both voiced and voiceless stops in Portuguese. For example, *du* 度, with a voiced stop historically, was used freely in the glossary for both /t/ and /d/ in Portuguese. This is demonstrated by the words encountered earlier, 挽度 *vento* 'wind' /wa:n tu/, and 嚙度 *gordo* 'fat' /kot tu/.

11 See Chan (1987, 1990) for spectrograms and amplitude envelope displays of syllables with post-stopped nasals in Zhongshan (as well as Kaiping).

3.1. Zhongshan Transliterations of Portuguese Syllables with Onset /b/

In this paper, the focus is on evidence of stop-like quality in the production of sonorants -- and specifically of nasals and /l/ -- in the Zhongshan speech in the eighteenth century, as gleaned from the Sino-Portuguese glossary. Turning first to what segments were used to transliterate Portuguese /b/, we find that Zhongshan /m/ often corresponded to Portuguese voiced stop /b/, paralleling what was found in the Late Middle Chinese sources of transcriptions from Sanskrit and Tibetan into Chinese. A proposal similar to Maspero's is made here, namely that the selection of Zhongshan /m/ for Portuguese /b/ is due to the pronunciation of the nasal with oral release in mid-eighteenth century when the glossary was compiled. One might question at this point whether an alternative analysis might not be possible, such as a proposal that /m/ in the source language, Portuguese, may have been pronounced with strong prenasalization and was then perceived by the Zhongshan Chinese in Macao as a nasal segment. However, to the best of the author's knowledge, Portuguese (e.g., Williams 1962, Posner 1966, Blanco 1980, Parkinson 1990), from its Vulgar Latin origin to the various modern dialects, has never been described as prenasalized. Thus, it is maintained here that the choice of /m/ for Portuguese /b/ in many of the items in the Sino-Portuguese glossary reflects not some phonetic feature of the voiced stop in Portuguese, but some phonetic feature of the corresponding homorganic nasal in the Chinese dialect used for the transliteration.

In the glossary, there is a total of 57 instances of Portuguese /b/ in syllable-initial position. Of that total, 17 involve the use of Zhongshan /m/ (< LMC *m-) to transcribe Portuguese /b/, occurring in 16 of the entries.

All 16 entries are presented in (7). These cases (17 out of 57) constitute 30%, or slightly under a third of the possible occurrences, and cannot be mere coincidence. The remaining 40 cases (or 70%) have Zhongshan /p/ (< LMC *p- in 36 cases, and < *pfi- (< *b-) in 4 cases) corresponding to Portuguese /b/.

(7) Zhongshan /m/ ([m^b]) for Portuguese /b/ (Total: 17 cases).

| | Gloss | Translit. | Zhongshan | Portuguese | Entry |
|----|---------------|-----------|-------------------|-----------------------|-------|
| a. | 噶喇巴 'Batavia' | 滅打比 | /mit ta pi/ | Batav <u>i</u> a | 83 |
| b. | 眉 'eyebrow' | 甚未除刺 | /sam mi sia la/ | obrancel <u>h</u> a | 144 |
| c. | 肚 'belly' | 馬哩家 | /ma li ka/ | barr <u>i</u> ga | 155 |
| d. | 竹 'bamboo' | 麻無 | /ma mu/ | bamb <u>u</u> | 191 |
| e. | 柚 'pumelo' | 任無也 | /jam mu ya/ | jam <u>b</u> oa | 200 |
| f. | 葡萄 'grapes' | 任無朗 | /jam mu loŋ/ | jambol <u>ã</u> o | 205 |
| g. | 蕃瓜 'squash' | 麼把喇見爾 | /mo pa la kin ɲi/ | ab <u>ô</u> bara | 212 |
| h. | 莧 'greens' | 麻養 | /ma joŋ/ | bai <u>ã</u> o | 218 |
| i. | 蕃薯 'potato' | 蔑打打 | /mat ta ta/ | batat <u>a</u> | 224 |
| j. | 牛角 'cow horn' | 般打地 | /pun ta ti | pont <u>a</u> de | 232 |
| | | 無化立 | mu fa lap/ | b <u>u</u> fara | |
| k. | 煙 'tobacco' | 大孖古 | /tai ma ku/ | tab <u>a</u> co | 287 |
| l. | 餅 'cake' | 麼蘆 | /mo lu/ | b <u>ô</u> lo | 292 |
| m. | 海參 'sea slug' | 未昨孖立 | /mi tsu ma lap/ | b <u>i</u> cho(de)mar | 295 |
| n. | 桌 'table' | 務弗的 | /mu fat tik/ | bufet <u>e</u> | 297 |
| o. | 盒 'box' | 務除打 | /mu sia ta/ | bocet <u>a</u> | 301 |
| p. | 鼓 'drum' | 擔摩盧 | /ta:m mo lu/ | tamb <u>o</u> r | 314 |

In (7) and subsequent examples, a phonemic transcription is given for the Zhongshan forms, while modern Portuguese orthographic spelling is given for the Portuguese correspondences. Also indicated in (7) is the stress on

the polysyllabic Portuguese words via underlining.¹² The stress given for the modern Portuguese pronunciations is also in agreement with Thompson's (1959) stress assignment for the modern Macanese counterparts. The same holds for other entries given stress assignment later in the paper. A brief comment on the Zhongshan transcription is in order here, also. The vowel /i/ is the lax [ɪ] preceding a velar coda, and a phonetically long [i:] elsewhere. Correspondingly, /u/ is the lax [ʊ] before a velar coda, and a long [u:] elsewhere. /o/ is phonetically [ɔ] in /ou/, and long [ɔ:] elsewhere. There are two phonemic low vowels, /a/ and /a:/. The first is phonetically the low, mid [A:] vowel in open syllables, and a short, slightly raised and centralized low vowel elsewhere. The phonemically long vowel, /a:/ is phonetically [A:]. /j/ is the front, unrounded glide. Also, note that in (7b) 刺 is to be read as 喇. (Cf. also the recording of [sobriŋ'sela] in modern Macanese spoken in Hong Kong (Thompson 1959:43). The last two syllables in (7g) are excluded from the corpus. It also appears that the unstressed Portuguese syllable /a/ in word-final position in (7a) and word-initial position in (7g) is ignored in the transliteration into Zhongshan in the glossary.

Turning to some general observations of the entries in (7), it can be seen that Zhongshan syllables containing onset /m/ for Portuguese /b/ occur before all types of vowels regardless of height or backness: the /m/

12 Word stress in Portuguese is as follows (Parkinson 1990:262-263):

"Final stress is regular (i.e. orthographically unmarked) in words whose final syllable either (a) contains an oral diphthong, one of the nasal vowels /ã õ ĩ ũ õĩ/ or orthographic *ão, i, u, ãe* (as opposed to *am, e, o, em* (*en*), which indicate unstressed final syllables); or (b) ends in *r, l* or *z* (but not *s*, which generally indicates inflectional endings). Otherwise, penultimate stress is regular. Any irregular stress pattern, including all cases of antepenultimate stress, is marked by a written accent. These accents also indicate vowel quality (often redundantly)."

onset may precede a high or low vowel (e.g., in /mi/ (7b) vs. /ma/ in (7c)), or it may precede a front or back vowel (in /mi/ (7b) vs. /mu/ (7d)). This also holds true in modern Zhongshan, where post-stopping of syllable-initial /m/ -- and /n/ and /ŋ/ as well -- may occur irrespective of vowel height or backness.

We turn now to the question of whether stress in Portuguese played any role in determining the surfacing of Zhongshan /m/ for Portuguese /b/. While it is true that a number of the entries in (7) involve stressed Portuguese syllables, there are also a number of entries involving unstressed Portuguese syllables. In the case of 'bamboo' in entry 191 (7d), for example, Zhongshan /m/ was used to transliterate both syllables of the source word even though stress actually fell on the ultimate syllable.¹³ However, observe that those syllables with Zhongshan /m/ not falling on stressed Portuguese syllables often occur in word-initial position. Thus, it appears that Zhongshan /m/ for Portuguese /b/ occurs on syllables that are stressed in Portuguese and/or syllables in word-initial position. (8) summarizes the distribution pattern of the 17 cases of Zhongshan /m/ from (7) with respect to the two

13 'Bamboo' in (7d) is also interesting with respect to syllable division. It seems to be syllabified not as *bam.bu*, as one would normally expect, but as *bam.bu*. This is due to co-occurrence restrictions in Zhongshan (as well as most Chinese dialects): bilabial stops and nasals may not both begin and close a syllable (e.g., *pVp, *pVm, *mVm, *mVp). Thus, a syllable such as /pap/ does not exist in Zhongshan. The only exceptions in Zhongshan and other Yue dialects are loanwords such as 泵 /pam/ 'pump', from English, and onomatopoeic type of words in baby talk, such as /mam/ (no vernacular character) for 'food' in Zhongshan. In (7d), assuming post-stopped nasals in the pronunciation of the bilabial nasals in /ma/ and /mu/, the transcriptional value of [mb] provides a voiced stop for the first Portuguese syllable, and a 'nasal + voiced stop' in the second Portuguese syllable, giving [mba mbu], a pronunciation closer to Portuguese than an alternative transcription such as /pa:n pu/.

criteria of stress and word-initial position in the corresponding Portuguese word. Position within a word (or phrase) may be slightly more important, though the difference can hardly be considered significant. More realistic would be to suggest that the two criteria, stress and word position, are fairly equal in importance in determining the selection of Zhongshan /m/ for Portuguese /b/. There are only 2 cases of Zhongshan /m/ for Portuguese /b/ in the environment that is neither stressed nor word-initial, based on the modern Portuguese forms, namely entries 144 (7b) and 205 (7f).

(8) Zhongshan /m/ for Portuguese /b/: distribution with respect to stress and position in the word in Portuguese (Total: 17 cases).

| | [+ word-initial] | [- word-initial] |
|------------|------------------|------------------|
| [+ stress] | 3 | 5 |
| [- stress] | 7 | 2 |

At this point, one might ask why stress is not the sole determinant in the selecting of Zhongshan /m/ for Portuguese /b/, and why word-initial position should play any role in the selection process. The answer may lie in the phonetic pitch of word-initial syllables in Portuguese. Posner (1966:102, 103) makes two observations worth repeating here: one, that "in no modern Romance language is the stress accent as heavy as in English, with its consequent 'swallowing' of unaccented syllables", and two, "Spanish, Portuguese, and Catalan all share one noteworthy feature of intonation [i.e., different from other Romance languages--mc]: in enumeration, each item has a falling tone". If both of these observations also apply to the Portuguese of eighteenth century Macao Portuguese -- namely that stress was not so heavily marked in the language, and more importantly, the intonational phrase began with a high pitch and falling progressively towards the end -- then the selection of Zhongshan /m/ can be correlated with linguistic stress or with

word/phrase-initial high pitch in the intonational contour in Portuguese.

Returning once again to (7), another interesting observation can be made. All the entries involve a simple /b/ onset in Portuguese, the only exception being entry 144 (7b), with a /br/ cluster. Portuguese words with a /br/ onset actually account for 17 of the 40 cases noted earlier of Zhongshan /p/ for Portuguese /b/. These 17 cases are distributed in all four environments given in (8), including word-initially and in stressed environments. Clearly, there was an avoidance of using Zhongshan /m/ to transliterate Portuguese /b/ in a /br/ cluster. This should not be surprising. In breaking up a /br/-onset Portuguese syllable into two syllables in Zhongshan, the first contains only an epenthetic vowel, and not the nuclear vowel, and thus should not be the syllable reflecting the stress (or the high pitch, as the case may be) on the source syllable in Portuguese.

There still remains the other 23 out of 40 cases of Zhongshan /p/ for Portuguese /b/ in the corpus. These are distributed as shown in (9). In addition, as in (7), Zhongshan /p/ may occur before all types of vowels, regardless of vowel height. The overall conclusion, thus, is that while stress and/or word-initial position tend to be most conducive to the selection of Zhongshan /m/ for Portuguese /b/, those environments per se do not guarantee the selection of Zhongshan /m/ for Portuguese /b/.

(9) Zhongshan /p/ for Portuguese /b/ (excluding /br/ (no cases of /bl/)): distribution with respect to stress and position in the word in Portuguese (Total: 23 cases).

| | [+ word-initial] | [- word-initial] |
|------------|------------------|------------------|
| [+ stress] | 6 | 9 |
| [- stress] | 3 | 5 |

One further observation must be made concerning Zhongshan /p/ for Portuguese /b/. As mentioned earlier, of the 40 cases, 36 involve the selection of Zhongshan /p/ from LMC *p-, the Bang initial, and 4 of Zhongshan /p/ from LMC *p^h- (< *b-), the Bing initial. For completeness of coverage, a comment is needed on the distribution of the Bing-initial syllables. Three cases fall on syllables that, in the corresponding Portuguese syllables, contain a /br/ cluster onset. The remaining one case falls on a syllable corresponding to an unstressed, ultimate syllable. This is in the Portuguese word in entry 233, *chumbo* 'lead': 針步. Thus, in no case does one find the selection of a phonetically lower register, Bing-initial syllable to transliterate a stressed Portuguese syllable with simple /b/ onset, or a word-initial Portuguese syllable, presumably accompanied by high pitch.

Of interest to note also is that Zhongshan /m/ was used to transcribe one case of Portuguese /p/, as shown in (10); and conversely, Zhongshan /p/ was used to transcribe one case of Portuguese /m/, given in (10b). In modern Macanese, (10a) is in fact pronounced [kam 'braŋ] (Thompson 1959: 44). Whether that was also the pronunciation in earlier times in Macao, on which (10a) was based cannot be determined here and can only be pointed out.

(10) a. Zhongshan /p/ for Portuguese /m/.

| Gloss | Translit. | Zhongshan | Portuguese | Entry |
|------------|-----------|---------------|------------|-------|
| 蝦 'shrimp' | 監巴朗 | /ka:m pa loŋ/ | camarão | 187 |

b. Zhongshan /m/ for Portuguese /p/.

| Gloss | Translit. | Zhongshan | Portuguese | Entry |
|----------|-----------|----------------|------------|-------|
| 頸 'neck' | 未氏哥做 | /mi si ko tsu/ | pescoço | 167 |

Although the substitution of /m/ for /p/ and vice versa is sporadic in the glossary, once one realizes that the production of /m/ in syllable-initial

position in Zhongshan may be accompanied by a homorganic stop, the interchange of the two bilabial segments, /m/ and /p/ can be explained very readily. One thus needs to re-evaluate Bawden's (1954:20) assumption that /m/ and /b/ are quite different from each other. He states that "the use of one and the same character to represent quite different sounds (e.g., 孖 *ma* for both *ma-* of *mar* and *-ba-* of *tabaco* ...) means that one can only reconstruct the original word if one knows already what word is meant." The use of Zhongshan /m/ for Portuguese /m/ as well as /b/ is not haphazard or arbitrary, but is due, instead, to the pronunciation of the segment as a plain nasal, or as one with stop release. The occasional confusion of /m/ and /p/ is part of the consequence of the optional post-oralization of the nasal. It is thus significant that the colloquial word 踎 'to crouch' is /mau/ in standard Cantonese, with an /m/ initial, while the same word is /pau/ in Zhongshan, with initial /p/. At the same time, the colloquial word 邊 'where' is pronounced /pin/ in standard Cantonese, while Zhongshan, on this occasion, has the variant pronunciations of /pin/ and /min/, with /m/ and /p/ used interchangeably for the word.

3.2. Zhongshan Transliterations of Portuguese Syllables with Onset /d/

The number of cases of Zhongshan /n/ (< LMC *n-) for Portuguese /d/ in the glossary is limited to just one out of 65 possible cases, a drastic decrease from what was observed above regarding Zhongshan /m/ for Portuguese /b/. The solitary example is given in (11).

(11) Zhongshan /n/ ([n^d]) for Portuguese /d/.

| Gloss | Translit. | Zhongshan | Portuguese | Entry |
|-------------|-----------|-----------|--------------|-------|
| 病 'sick' | 奴噏 | /nu lu/ | dor ('pain') | 371 |

It is not the case that the remaining 64 occurrences of /d/ in syllable-initial position in the Portuguese glossary are transcribed in Zhongshan with a voiceless stop, /t/. 54 out of the 65 cases of Portuguese /d/ involve the use of Zhongshan /t/ (< LMC *t- in 43 cases and *tʰ- (< *d-) in 11 cases), accounting for 83% of the possible cases. In addition, there are two cases involving the use of Zhongshan /t'/ (< LMC tʰ- < *d-). This leaves 8 cases, where one finds Zhongshan /l/ (< LMC *l-) used to transcribe Portuguese /d/, representing 12% of the possible cases. Note that Zhongshan /l/ is also used for Portuguese /t/ in onset position on one occasion (out of 91 possibilities) in the glossary. The Portuguese syllable, *te*, in *d'este* 'east' (entry 15) was transliterated as /li/: 爹時離 /tia si li/. All eight cases wherein Zhongshan /l/ was used to transcribe Portuguese /d/ are given in (12). Stress on the polysyllabic words is again indicated by underlining. Observe in (12) that Zhongshan /l/ tends to occur before the high, front vowel, /i/, corresponding to Portuguese /i/ or /e/. One possible hypothesis is that the choice of Zhongshan /l/ or /t/ for Portuguese /d/ was phonologically-conditioned: the flap-like lateral before a high, front vowel, and the ordinary lateral approximant elsewhere.

(12) Zhongshan /l/ for Portuguese /d/ (Total: 8 cases).

| Gloss | Translit. | Zhongshan | Portuguese | Entry |
|----------------------|-----------|-----------------|---------------------------|-------|
| a. 十二月 'December' | 利占補爐 | /li tsim pu lu/ | De <u>z</u> embro | 36 |
| b. 今日 'today' | 依時里亞 | /i si li a/ | é <u>s</u> se <u>d</u> ia | 40 |
| c. 二 'two' | 羅蘇 | /lo su/ | dois | 326 |
| d. 十 'ten' | 利時 | /li si/ | dez | 334 |
| e. 一萬 'ten thousand' | 利時味爐 | /li si mi lu/ | dez mil | 337 |
| f. 請 'please' | 亞了穌 | /a liu su/ | <u>a</u> deus | 361 |
| g. 多謝 'thank you' | 了穌吧忌 | /liu su pa ki/ | De <u>s</u> pague | 362 |
| h. 內 'inside' | 連度爐 | /lin tu lu/ | <u>d</u> entro | 376 |

Linguistic stress again appears to play a very important role. Every syllable with Zhongshan /l/ corresponds to a /d/-onset, stressed syllable in Portuguese. The only exception is (12a), *Dezembro*, with penultimate stress. But notice that the /d/ onset is word-initial, and not part of a /dr/ cluster, hence, the precise environments that enabled Zhongshan /m/ to surface, as shown earlier in (7). The distribution pattern of Zhongshan /l/ for Portuguese /d/ is presented in (13) for ease of reference and comparison.

- (13) Zhongshan /l/ for Portuguese /d/: distribution with respect to stress and position in the word in Portuguese (Total: 8 cases).

| | [+ word-initial] | [- word-initial] |
|------------|------------------|------------------|
| [+ stress] | 6 | 1 |
| [- stress] | 1 | 0 |

In the entries in (12), observe also that there are no cases of Portuguese /dr/ transliterated using Zhongshan /l/ even though there are in fact 5 cases of Portuguese /dr/-syllables in the corpus. However, none of them was transliterated using /l/ (or /n/) in Zhongshan. This is a pattern similar to what was found earlier concerning Portuguese /br/.

Excluding the 5 cases of Portuguese /dr/ syllables, there remain 49 syllables in which Zhongshan /t/ was used to transliterate Portuguese /d/. The distribution of these 49 syllables with respect to Portuguese stress and position in a word is given in (14).

- (14) Zhongshan /t/ for Portuguese /d/ (excluding /dr/): distribution with respect to stress and position in the word in Portuguese (Total: 49 cases).

| | [+ word-initial] | [- word-initial] |
|------------|------------------|------------------|
| [+ stress] | 4 | 16 |
| [- stress] | 0 | 29 |

The observations earlier, combined with the distribution pattern in (13),

reveal that a stressed syllable in word-initial position has a better chance of being transliterated using Zhongshan /l/ than does a stressed syllable that is not in word-initial position. The distribution patterns in (13) and (14) also show very clearly that a Portuguese syllable that is neither stressed nor in word-initial position will not be transliterated using Zhongshan /l/ (or /n/). The converse, however, does not hold. That is, there is no guarantee that a /d/-onset syllable that is both stressed and in word-initial position would be transliterated using Zhongshan /l/ -- not even if the syllable contains a high, front vowel (/i/ or /e/) in Portuguese, as is the case for all four [+ word-initial, + stress] cases in (14).

At this point, let us study the 11 cases of Zhongshan /t/ from LMC *tʰi- (< *d-), the Ding initial. They fall on Zhongshan syllables used to transliterate unstressed syllables in Portuguese, and in fact only those Portuguese syllables that have a simple /d/ onset. It should also be pointed out the two cases of Zhongshan /t'/ from LMC *tʰi- (< *d-) for Portuguese /d/, noted earlier, were also used to transliterate unstressed Portuguese syllables. Thus, the distributional facts strongly suggest the avoidance of selecting a phonetically-lower, Yang-register syllable for a stressed Portuguese syllable, a distributional pattern that is even more clearly evident in English words borrowed into modern standard Cantonese (Cheung 1986).

Overall, the number of occurrences of Zhongshan /l/ for Portuguese /d/ is fairly small, but large enough and systematic enough in where it surfaces to argue for their deliberate selection. The choice of /l/ for Portuguese /d/ should give us clues as to how the Zhongshan segment /l/ might have been pronounced in the eighteenth century, namely, a kind of lateral flap in some environments. That is, Zhongshan /l/ (< *l-) was perhaps flap-like, or stop-like, similar to the production of /l/ in Southern

Min, except that in the Zhongshan case, the environment is restricted.

Relevant to this discussion is a case of Zhongshan /l/ for Portuguese /d/ that is not found in the Sino-Portuguese glossary and hence not recorded in (12) above. The word for ‘thief’ occurs in the glossary as entry 124: 賊 ‘thief’, *ladrão*, with ultimate stress, transliterated as 喇打令 /la ta laŋ/ or /la ta la:ŋ/, with /t/ for Portuguese /d/, as is the usual case. Noteworthy, then, is an observation made by Thompson (1959:42, fn.5) concerning this word. It had apparently entered into pidgin English as *la-li-loong*, and became a term of abuse in the Macao dialect, which J. Dyer Ball transcribed as *la li lung* (= /la li luŋ/, phonetically [la li luŋ]). By then, the original meaning of ‘thief’ for the word had probably been lost since no mention of it is given in Ball (1896-97). Although there is no direct reporting on this in descriptions of the Zhongshan dialect (Ball 1896-97, Chao 1948, Egerod 1956, Chan 1980), where Zhongshan /l/ is described or treated as a simple lateral, the present example is valuable in showing the confusion of /l/ and /d/ in Zhongshan, and in the transliteration of Portuguese /d/ using Zhongshan /l/. The two variant transliterations of Portuguese ‘thief’ provide some interesting observations. The variant /la li luŋ/, with Zhongshan /l/ selected, conforms with the phonological conditioning that it be followed by the high, front vowel /i/ in Zhongshan. However, the glossary does not contain any cases of Portuguese /dr/ transliterated with a Zhongshan /l/ syllable. This case then is like the exception in (7), namely, *sobrancelha* ‘eyebrow’ (7b), where Portuguese /b/ in the /br/ cluster was nonetheless transliterated into Zhongshan with a nasal onset on the second syllable: /sam mi sia la/. As for the variant /la ta la:ŋ/, with Zhongshan /t/, not only does it conform with the glossary in using /t/ for Portuguese /dr/ cluster onset, but the choice of Zhongshan

/t/ in the syllable /ta/ would also be expected, since Zhongshan /l/ for Portuguese /d/ never surfaces before a low vowel, based on our corpus from the glossary.

A flap-like pronunciation of /l/ is not recorded in modern Zhongshan. Among the modern Chinese dialects, such flapped, or stop-like, articulation of /l/ is only found in Southern Min, leading Xiamen speakers learning English often to experience difficulty in distinguishing late and date (Tung 1957:233). This confusion of English /l/ and /d/ by Southern Min speakers arises not only because of the absence of such a contrast in their own language, but also because the /l/ segment in their own speech is sometimes produced with a stop-like quality, as described by Douglas (1899), quoted earlier. The flapped articulation of /l/ shows up in spectrograms as having a burst transient (Chan 1987), and is described by Tay (1968:31) as produced by a rapid flap of the tongue tip. As a result, Tay finds it difficult to determine whether the sound would be more accurately represented as a [d] or [l] phonetically. In this regard, it is significant that in the Southern Min dialect spoken on Hainan Island, the phonological inventory given by Yun (1987) includes /l/, /d/, and /n/, albeit a very limited distribution for /d/. Also worthy of note is the pronunciation of [nd] for the lateral in some morphemes produced by a speaker from Taiwan in Nakajima's (1973) study. It was cited by Iwata et al. (1979:80, fn.4), who conducted a fiberoptic study of Fukienese (i.e., Southern Min) stops in onset and coda position. /l/ was included precisely because of descriptions in the literature that point to the sound as being more like a plosive than an approximant.

In modern Zhongshan, post-stopping is still present in the articulation of the nasals, and in all environments irrespective of vowel height or backness. In contrast, a flap-like quality in the pronunciation of /l/ has not

be reported for Zhongshan and thus can only be hypothesized and inferred. Nonetheless, if premodern Zhongshan had an allophonic variant of /l/ that was some kind of lateral flap, it would account for the contact between /l/ and /t/ noted earlier. Moreover, a flap-like quality to /l/ would render the segment articulatorily and perceptually more distinct from the corresponding nasal phoneme, /n/, and may help to explain why the contrast between /l/ (< *l) and /n/ (< *n) has been preserved in modern Zhongshan, though lost for many speakers of standard Cantonese (Chan 1980:23-24). (At the same time, the selection of [l] versus [n] in modern Hong Kong Cantonese speech is correlated with sociolinguistic factors, as Bourgerie (1990) has shown.)

It should also be noted that (British) English loanwords in modern standard Cantonese (e.g. Cheung 1972) pattern differently from what one finds in the Sino-Portuguese glossary even though both European languages possess a series of voiced stops. The voiced stops in English are consistently transliterated using the corresponding voiceless stops; for example, /pa si/ for 'bus', /te ti/ for 'daddy', and /kit t'a/ for 'guitar'. At the same time, the lateral /l/ is never used to transliterate English /d/; it is regularly and consistently used for English /l/, as in /la:i sou/ for 'Lysol', and /r/, as in /lam/ for 'rum' in /lam tsau/ (/tsau/ 'liquor').

If Zhongshan /l/ was sometimes pronounced with a flap-like quality in eighteenth century Macao, accounting for its use to transcribe Portuguese /d/, it still does not automatically preclude Zhongshan /n/ from serving in the same capacity. Although only one case of /n/ for Portuguese /d/ is found in the corpus, it is significant that, like the interchange of /m/ and /p/ noted earlier in (10), one finds something similar with respect to /n/ and /t/, at least, insofar as Zhongshan /t/ was used on three occasions to

transliterate Portuguese /n/ in syllable-initial position. The three cases are given in (15). In (15a), for transliteration purposes, the Portuguese word was syllabified as *Jan.nei.ro*, where the first syllable in Portuguese with affricate onset was transliterated in Zhongshan using the syllable /in/.

(15) Zhongshan /t/ for Portuguese /n/.

| Gloss | Translit. | Zhongshan | Portuguese | Entry |
|----------------------------|-----------|--------------|-----------------|-------|
| a. 正月 'January' | 燕爹爐 | /in tia lu/ | Janeiro | 25 |
| b. 筋 'sinew' ¹⁴ | 爹刺巴 | /tia lat pa/ | nervo ('nerve') | 164 |
| c. 黃瓜 'cucumber' | 備邊度 | /pi pin tu/ | pepino | 209 |

While Zhongshan /t/ served on these three occasions to transliterate Portuguese /n/, the converse is not found; Zhongshan /n/ is not used in the glossary for Portuguese /t/. Of the 91 occurrences of Portuguese /t/ in syllable-initial position, 88 were transcribed using /t/ in Zhongshan, 2 using /t'/, and 1 using /l/ (for the word, *d'este* 'east' (entry 15), cited earlier).

At this point, the question naturally arises as to why there is such a paucity of Zhongshan /n/ being used to transcribe Portuguese /d/, and, by extension, the absence of Zhongshan /n/ for Portuguese /t/. It may be that the oral release in the production of /n/ was less audible than the oral release in the production of /m/, resulting in /m/ being used more frequently than /n/ in the transcription of the corresponding voiced stops in Portuguese. Perhaps a better explanation, however, is that the single articulation of Zhongshan /l/ as a lateral flap in that period sounded more like a voiced stop than did the internally more complex post-stopped /n/.

The use of /l/ to transliterate Portuguese /d/ (and the single case of its use for Portuguese /t/) also explains one problematic entry noted by

14 Boltz (1977:452) questions Bawden's suggestion of Portuguese *nervo*, and wonders if a form of *travar* (with no gloss given) was intended.

Bawden, entry 395, given in (16a) below from Bawden and the main source for the current study. Entry 395 in (16b) is from a second source (cf. footnote 2).

(16) Entry 395: 瘦 ‘thin’. Portuguese *magro*.

| | Transliteration | Zhongshan |
|----|-----------------|------------|
| a. | 孖古度 | /ma ku tu/ |
| b. | 孖古路 | /ma ku lu/ |

Bawden (1954:17) comments on what for him is the inexplicable use of 度 *to* (Cantonese /tou/, Zhongshan /tu/) for the final sound in *magro* ‘thin’, that is, the use of Zhongshan /tu/ for the segments *ro* in *magro*, and more specifically, Zhongshan /t/ for Portuguese /r/. In the same passage, Bawden cites a second example using the same Chinese character, 度 /tu/, this time used for the Portuguese syllable, *rio*. The example is entry 300: 櫃 ‘cupboard’, and the Portuguese word, *armário*, transliterated using the Chinese characters: 亞喇孖度, /a la ma tu/ in modern Zhongshan. While both cases involve the selection of Zhongshan /t/ for Portuguese /r/, only in the case of entry 395, given in (16) above, does one find 度 /tu/ varying with 路 /lu/ in the different reprints consulted here. At first glance, it would appear that (16a) is wrong, and the entry should be as in the (16b) printing. However, given the use of Zhongshan /l/ for Portuguese /l/ and /r/, as well as for some cases of Portuguese /d/ and /t/, the original entry is probably as given in (13a), and (16b) someone’s subsequent editing to ‘correct’ the entry. Entry 300 for ‘cupboard’, on the other hand, was overlooked, thus retained the use of Zhongshan /t/ for Portuguese /l/.

The use of Zhongshan /t/ for Portuguese /r/ in *armário* ‘cupboard’ and *magro* ‘thin’ is then not some kind of printing error, but reflects, instead, what the transcriber thought he had heard. (16b) is then a later editing

change. The substitution would put the entry in line with what one generally finds in the glossary: the consistent (exceptionless) use of Zhongshan /l/ (< *l-) for Portuguese /r/ in consonant clusters, and its use for Portuguese syllable-initial /r/ in practically all cases (that is, 56 out of the 58 cases in the glossary, assuming (16b) to be the correct entry). What remains to be investigated in the future is how many more cases there are of such editing, which potentially reduces the number of cases of Zhongshan sonorants being used to transcribe Portuguese voiced stops.

As a further comment, the ‘correcting’ of /t/ to /l/ may have reflected changes in the Zhongshan dialect. Although this can only be speculative, perhaps sometime early in the nineteenth century, /l/ was no longer produced with a flap or stop-like quality before /u/, changing in pronunciation from a flap to an approximant in that context, though still remaining a lateral phoneme, /l/. However, the lateral flap pronunciation persisted in the environment before the high, front vowel, /i/, as demonstrated by the use of Zhongshan /l/ for Portuguese /d/ in the entries given in (12).

3.3. Zhongshan Transliterations of Portuguese Syllables with Onset /g/

Occurrences of Portuguese syllables with onset /g/ are far fewer than those for the corresponding voiced bilabial and dental stops in the glossary. The corpus contains only 30 such syllables. As a result, the nuclear vowel on the Portuguese syllables is frequently roughly half the number of the other two sets. This is because Portuguese orthographic ‘g’ is not a voiced velar stop in all environments; it is (and was in the glossary) a voiced fricative /ʒ/ before high, front vowels /i, e/, and transliterated in the glossary using the closest Zhongshan correspondent, a voiceless affricate, /ts/. Of the 30 cases

with onset /g/ in Portuguese, 27 use Zhongshan /k/ (< LMC *k- in 26 cases and *kh- (< *g-) in 1 case), and the remaining 3 use Zhongshan /ŋ/ (< LMC *ŋ-). Constituting only 10% of the possible occurrences, the three cases of Zhongshan /ŋ/ for Portuguese /g/ are given in (17). As before Portuguese stressed syllables are underlined. Observe that Zhongshan /ŋ/ occurs before low and back vowels, and presumably before other vowels as well, though not evident from the Sino-Portuguese glossary.

(17) Zhongshan velar nasal /ŋ/ for Portuguese /g/ (Total: 3 cases).

| Gloss | | Translit. | Zhongshan | Portuguese | Entry |
|--------|--------|-----------|-----------|--------------|-------|
| a. 小西洋 | ‘Goa’ | 我呀 | /ŋo a/ | <u>Goa</u> | 82 |
| b. 貓 | ‘cat’ | 迄度 | /ŋat tu/ | <u>gato</u> | 177 |
| c. 斗 | ‘peck’ | 雁打 | /ŋa:n ta/ | <u>ganta</u> | 303 |

Despite only 3 entries, for comparison purposes, the distribution pattern of Zhongshan /ŋ/ for Portuguese /g/ is presented in (18). All three entries are stressed and word-initial in Portuguese, conforming perfectly with the pattern that has been established earlier with respect to Zhongshan /m/ and /l/.

(18) Zhongshan /ŋ/ for Portuguese /g/: distribution with respect to stress and position in the word in Portuguese (Total: 3 cases).

| | [+ word-initial] | [- word-initial] |
|------------|------------------|------------------|
| [+ stress] | 3 | 0 |
| [- stress] | 0 | 0 |

One item which is missing in the glossary is a transliteration of *Portugal*, with stress on *gal*.¹⁵ The official transliteration into standard (Mandarin)

15 For entry 81, glossed as 大西洋 ‘Portugal’, the Portuguese word given is *Reino* (唵奴 /lin nu/), literally meaning ‘realm, kingdom’. The word is apparently of Indo-Portuguese origin. Bawden (1954:23, fn.2) states that “the word *reinol* [was] used in India to denote a ‘European Portuguese’, especially one recently arrived”.

Chinese is *Putao* 葡萄牙. The choice of *ya* 牙 for *gal* is particularly startling when it is read in Mandarin. In Zhongshan, however, it would be /p'u t'u ŋa/, with the velar nasal /ŋ/ transliterating Portuguese *g*. The pronunciation of the velar nasal with homorganic voiced stop release would readily explain the selection of 牙 for Portuguese *gal*. For *Portugal* and the three entries in (17), observe that, in addition to stress falling on the /g/-onset syllable in Portuguese, the onset is, moreover, a simple /g/ onset and not part of a /gr/ cluster. (There is no /gl/ cluster in the corpus.)

There are, in fact, a total of 9 stressed and unstressed, /gr/-onset syllables in the corpus. However, in all 9 cases, Zhongshan /k/ (< LMC *k- in 8 cases and *kʰ- (< *g-) in 1 case) was used for the transliteration. Thus, the patterning of Zhongshan /ŋ/ for Portuguese /g/ conforms with the general pattern in the previous cases involving /m/ and /l/. Zhongshan /ŋ/ for Portuguese /g/ falls only on syllables corresponding to Portuguese syllables that are stressed and/or word-initial position, and whose onset is a simple /g/ segment.

Excluding the 9 cases of Portuguese /gr/-onset syllables noted above, there remain 18 syllables in which Zhongshan /k/ (< LMC *k-) was used to transliterate Portuguese /g/. The distribution of these syllables with respect to Portuguese stress and position in a word is given in (19).

(19) Zhongshan /k/ for Portuguese /g/ (excluding /gr/): distribution with respect to stress and position in the word in Portuguese (Total: 18 cases).

| | [+ word-initial] | [- word-initial] |
|------------|------------------|------------------|
| [+ stress] | 3 | 5 |
| [- stress] | 1 | 9 |

The patterning in (19) is reminiscent of that in (14) in having the

highest number of cases falling in the unstressed, non-word-initial position. Clearly, unstressed, non-word-initial syllables with voiced stop onset in Portuguese tend to be transliterated with Zhongshan syllables that have a voiceless stop onset, be it /p/, /t/, or /k/.

4. Conclusion

In this study of the mid-eighteenth century glossary, it is demonstrated that nasals (viz., /m/ and /ŋ/) and the lateral in Zhongshan were used at times to transliterate Portuguese voiced stops. From these observations, several inferences can be made. First of all, these nasals must not have been produced in all contexts as simple nasals, with homogeneous composition throughout the segment, but were nasals accompanied by a homorganic stop, as claimed earlier. This would then account for their use in transcribing the corresponding voiced stops in Portuguese, especially in those syllables with stress and/or in word-initial position. (For some entries that contain a phrase in Portuguese, the 'word-initial position', in fact, also coincides with phrase-initial position.) Secondly, the production of these nasals with post-oralization must have been optional, so that they were not always produced even in the most optimal environments. This is also in line with what this writer has observed in conducting fieldwork on modern Zhongshan and Kaiping (Yue): the environment most conducive to post-stopping of syllable-initial nasals is the monosyllabic word, in which the citation syllable is enunciated slowly and carefully, accompanied by stress. Nonetheless, even in that environment, not every repetition of the syllable is accompanied by post-stopping. Third and lastly, /l/ must have been pronounced with at least two allophonic variants, one of which was a simple lateral approximant, and the other a kind of lateral flap that was used for transliterating Portuguese

/d/-onset syllables in stressed and/or word-initial position, particularly when the /l/ onset in Zhongshan is followed by a high front vowel.¹⁶ It is worth noting that phonological conditioning for flapping before /l/ parallels that for post-stopping before /n/ in some other Chinese dialects. For example, among the Mandarin dialects, in Longchang, Sichuan (Site 115, Yang 1984) and Suijiang, Yunnan (Site 99, Yang 1969), /n/ has plosive release before high, front vowels (/i/ and /y/). And in Rongchang, Sichuan (Site 116, Yang 1984), it is noted that post-stopping is particularly prominent before the /i/ and /y/ glides. (For further details on the phonological conditioning of post-stopped nasals among Chinese dialects, based on a large survey of dialect descriptions, cf. Chan 1987.)

The overall findings in this study are summarized in (20), without reference to phonological conditioning. Tabulations are given for the Zhongshan segments used to transliterate the three Portuguese voiced stops, /b/, /d/, and /g/ in the corpus from the glossary. (20) includes Portuguese consonant cluster onsets (/br, dr, gr/).

(20) Zhongshan segments for Portuguese voiced stop onsets, /b/, /d/, /g/.

| Portuguese stop | Zhongshan segment | Number of occurrences |
|--------------------|-------------------|-----------------------|
| a. /b/ (Total: 57) | /p/ | 40 |
| | /m/ | 17 (30%) |
| | /p'/ | 0 |

16 Even for the production of /l/ in Southern Min, there has not, to the author's knowledge, been any acoustic study of it other than the fiberoptic study by Iwata et al. (1979), where information is limited to three sets of measurements: (1) voice onset time, (2) articulatory closure duration and the duration of the preceding vowel, and (3) fundamental frequency after voice onset. Still to be answered are such questions as precisely how the segment is produced, whether or not it can be characterized as a dental/alveolar lateral flap à la Ladefoged and Maddieson (1986), and whether the flapping is produced stronger or weaker in certain environments.

| | | |
|--------------------|------|---------|
| b. /d/ (Total: 65) | /t/ | 54 |
| | /l/ | 8 (12%) |
| | /t'/ | 2 |
| | /n/ | 1 |
| c. /g/ (Total: 30) | /k/ | 27 |
| | /ŋ/ | 3 (10%) |
| | /k'/ | 0 |

From (20), it can be seen, first of all, that the same place of articulation is imperative in what Zhongshan segments may be used to transliterate the voiced stops in Portuguese. There is also a very obvious hierarchy of preference as to which Zhongshan segments were selected to transliterate the Portuguese stops. The most preferred were the corresponding voiceless, unaspirated stops. Zhongshan /m/, /l/ and /ŋ/ were selected for transliterating Portuguese /b/, /d/ and /g/ respectively only when one or more of the following conditions were met: (1) the Portuguese onset was not part of a consonant cluster, (2) the Portuguese syllable was stressed, (3) the Portuguese syllable was at word-initial position, and (4) in the particular case of Zhongshan /l/ for Portuguese /d/, the Portuguese syllable contained a high, front vowel (/i/ or /e/). These conditions hold for the majority of the cases studied in the corpus. But even under these stringent conditions, Zhongshan /m/, /l/ and /ŋ/ were not always selected to transliterate the corresponding Portuguese voiced stops.

In this paper, it is proposed that the post-oralization of syllable-initial nasals in modern Zhongshan is a preservation of a feature from earlier times. Evidence for it comes from one type of sources, namely the transliteration of foreign sounds into the Zhongshan dialect found in a mid-eighteenth century Sino-Portuguese glossary. The same source has also provided evidence to suggest that Zhongshan /l/ was a kind of flap at that time, though no

longer so in modern-day Zhongshan. Perhaps the restricted environment in which the flapping occurred led to its disappearance.

What is lacking is evidence from the other type of source, the transliteration of Zhongshan sounds in the eighteenth century into a foreign language such as Portuguese or English, languages with phonemic voiced stops. The evidence would then further strengthen the present claim that in the eighteenth century Zhongshan dialect, the syllable-initial sonorants -- nasals and /l/ -- were produced with stop-like quality in some environments, and that the post-stopping in modern Zhongshan nasals is a preservation from earlier times.

(Accepted for publication 18 February 1993)

ACKNOWLEDGEMENT

Thanks go to Jim Tai, Frank Hsueh, Daphne Hsueh, and Ted Pulleyblank, who have helped during different stages of my project, and to Peter Petrucci for initial assistance with modern Portuguese stress assignment. Thanks also go to the anonymous reviewer for valuable comments, many of which I have addressed in the revised paper. Other issues, such as the extent to which Chinese characters were selected for their meaning rather than phonetic value must await future investigation when a comprehensive study is made of the entire Sino-Portuguese glossary.

REFERENCES

- BALL, Y. DYER. 1896-97. The Hōng Shan or Macao dialect. *The China Review* 22:501-531.
- BAWDEN, C. R. 1954. An eighteenth century Chinese source for the Portuguese dialect of Macao. *Silver Jubilee Volume of the Zinbun Kagaku-Kenyusho* (Kyoto: Kyoto University), 12-33.
- BLANCO, RAQUEL S. F. 1980. Loanwords and phonological processes in Portuguese. Ph.D. dissertation, State University of New York at Buffalo.
- BOLTZ, WILLIAM G. 1977. Notes on an eighteenth-century Sino-Portuguese glossary. *Romance Philology* 30.3:442-453.
- BOURGERIE, DANA S. 1990. A quantitative study of sociolinguistic variation in Cantonese. Ph.D. dissertation, Ohio State University.
- BOXER, C.R. 1948. *Fidalgos in the Far East 1550-1770: Fact and fancy in the history of Macao*. The Hague: Martinus Nijhoff.
- CHAN, MARJORIE K. M. 1980. Zhong-shan phonology: A synchronic and diachronic analysis of a Yue (Cantonese) dialect. M.A. thesis, U. British Columbia.
- _____. 1982. A response to Boltz' notes on Cantonese dentilabialization. *Journal of the American Oriental Society* 102.1:107-109.
- _____. 1987. Post-stopped nasals in Chinese: an areal study. *UCLA Working Papers in Phonetics* 68:73-119.
- _____. 1990. The non-correlation of post-oralization and vowel height: evidence from Chinese dialects. Presented at the Second Northeast Conference on Chinese Linguistics. Philadelphia, 4-6 May 1990. Manuscript.

- CHAO, YUEN-REN. 1948. Zhongshan fangyan [Zhongshan dialect]. *Bulletin of the Institute of History and Philology* 20:49-73.
- CHEUNG, SAMUEL H.N. 1972. *Cantonese as spoken in Hong Kong*. Hong Kong: Chinese University of Hong Kong.
- CHEUNG, YAT-SHING. 1986. Xianggang Guangzhouhua Yingyu yinyi jiecede shengdiao guilü [On the tone system of loan words from English in Hong Kong Cantonese]. *Zhongguo Yuwen* (1986)1:42-50.
- COBLIN, W. SOUTH. 1989. Notes on the initials of a Northwest dialect of Tang times. *Proceedings of the Second International Conference on Sinology*. Taipei: Academia Sinica.
- DOUGLAS, CARSTAIRS. 1899. *Chinese-English dictionary of the vernacular or spoken language of Amoy*. New edition. London: Publishing Office of the Presbyterian Church of England.
- EGEROD, SØREN. 1956. *The Lungtu dialect: A descriptive and historical study of a South Chinese idiom*. Copenhagen: Ejnar Munksgaard, Ltd.
- GOMES, LUIS G. 1950. *Ou-mun kei-leok (Monografia de Macau) por Tcheng-ü-lâm e Ian-Kuong-lâm*. Macao: Imprensa Nacional.
- GONG, HWANG-CHERNG. 1981. Shi'er shijimo Hanyude xibei fangyan (Shengmu bufen) [A Northwestern Chinese dialect at the end of the 12th century]. *Bulletin of the Institute of History and Philology* 52.1: 37-78.
- IWATA, RAY, MASAYUKI SAWASHIMA, HAJIME HIROSE, and SEIJI NIIMI. 1979. Laryngeal adjustments of Fukienese stops: initial plosives and final aplosives. *Ann. Bull. RILP* 13:61-81.
- LADEFOGED, PETER. 1971. *Preliminaries to linguistic phonetics*. Chicago: University of Chicago Press.

- LADEFOGED, PETER, and IAN MADDIESON. 1986. Some of the sounds of the world's languages. *UCLA Working Papers in Phonetics* 64:1-137.
- LUO, CHANG-PEI. 1933. *Tang Wudai xibei fangyin* [The Northwestern dialects of the Tang and Five Dynasties]. Shanghai: Academia Sinica.
- MASPERO, HENRI. 1920. Le dialecte de Tch'ang-ngan sous les T'ang. *Bulletin de l'Ecole Française d'Extrême-Orient* 20.2:1-124.
- PARKINSON, STEPHEN. 1990. Portuguese. In: Bernard Comrie (ed.), *The World's Major Languages*. New York, Oxford: Oxford University Press. 260-278.
- POSNER, REBECCA. 1966. *The Romance languages: a linguistic introduction*. Garden City, NY: Doubleday & Company.
- PULLEYBLANK, EDWIN G. 1984. *Middle Chinese: a study in historical phonology*. Vancouver, Canada: University of British Columbia Press.
- _____. 1991. *Lexicon of reconstructed pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*. Vancouver, Canada: University of British Columbia Press.
- SHI, DINGXU. 1991. Chinese pidgin English: its origin and linguistic features. *Journal of Chinese Linguistics* 19.1:1-41.
- TAY, MARY WAN JOO. 1968. *A phonological study of Hokkien*. Ph.D. dissertation, University of Edinburgh.
- THOMPSON, ROBERT WALLACE. 1959. Two synchronic cross-sections in the Portuguese dialect of Macao. *Orbis* VIII.1:29-53.
- TUNG, T'UNG-HO. 1957. *Xiamen fangyande yinyun* [Phonology of Amoy dialect]. *Bulletin of the Institute of History and Philology* 29.1:231-253.
- YANG, SHIH-FENG (ed.). 1969. *Yunnan fangyan diaocha baogao* [Report on a survey of the dialects of Yunnan]. 2 volumes. Special Publication

- Number 56, Institute of History and Philology, Academia Sinica.
- _____ (ed.). 1984. Sichuan fangyan diaocha baogao [Report on a survey of the dialects of Sichuan]. 2 volumes. Special Publication Number 82, Institute of History and Philology, Academia Sinica.
- WILLIAMS, EDWIN B. 1962. From Latin to Portuguese: historical phonology and morphology of the Portuguese language. Second Edition. Philadelphia: University of Pennsylvania Press.
- YUN, WEILI. 1987. Hainan fangyan [Hainan dialect]. Macao: Aomen Dongya Daxue.
- ZHAN, BOHUI and YAT-SHING CHEUNG (eds.). 1987. A survey of dialects in the Pearl River Delta. Volume 1: Comparative morpheme-syllabary. Hong Kong: New Century Publishing House.
- _____. 1988. A survey of dialects in the Pearl River Delta. Volume 2: Comparative lexicon. Hong Kong: New Century Publishing House.

陝北清澗話人稱代詞和 指人名詞語尾 [·mi] 探源

劉 勳 寧

筑波大學

本文將說明，語音分層的觀念是漢語史研究中的重要觀念。一個語音層行將消失、難以直接證明時，可以利用近親方言來復原。

一

陝北清澗話的人稱代詞形式是：

| | | | |
|----|--------|--------|---------|
| 單數 | 我 | 你 | 他 |
| | ɿŋu | ɿnɿ | ɿt'a |
| 複數 | 我 [] | 你 [] | 他 [] |
| | ɿŋu·mi | ɿnɿ·mi | ɿt'a·mi |

[·mi] 表複數，也可以用在其他指人名詞的後面。例如：

- 學生 [·mi] 學生 [·mi] 放了假了也。
老師 [·mi] 老師 [·mi] 跟會（趕廟會）去也。
毛三 [·mi] 毛三 [·mi] 走的榆林上去尋了個營生。
我爹 [·mi] 你曉得我爹 [·mi] 這陣兒作什麼者哩？

[·mi] 的來源不明。

北方話大多數方言的複數詞尾是“們”。清澗話的 [·mi] 與“門（們）”聲

母相同，可是韻母相去甚遠。查檢“門”字所在韻攝——中古音系臻攝的字並沒有變讀爲“-i”的條例。例如：

| | | | | | | | | |
|------|------|-------|--------|------|-------|---------|-------|------|
| 臻攝一等 | 本 | 門 | 跟 | 很 | 嫩 | 村 | 滾 | 溫 |
| | ɸəŋ | ɛməŋ | ɕkəŋ | ʰxəŋ | nuəŋ | ɕts'uəŋ | ʰkuəŋ | ɕuəŋ |
| 臻攝三等 | 賓 | 民 | 巾 | 印 | 輪 | 俊 | 訓 | 聞 |
| | ɸiəŋ | ɛmiəŋ | ɕtɕiəŋ | iəŋ | ɕlyəŋ | tɕyəŋ | ɕyəŋ | ɕvəŋ |

所以認爲“門（們）”變“-mi”沒有根據。

呂叔湘先生在《說們》一文中揭出：唐代文獻裡有“弭”和“偉”當“們”字用的例。其中“弭”字的例：

盧尚書宏宣與弟衢州簡辭同在京。一日，衢州早出，尚書問有何除改。答曰，“無大除改，唯皮遐叔蜀中刺史。”尚書不知皮是遐叔姓，謂是宗人，低頭久之，曰，“我弭當家沒處得盧皮遐來。”衢州爲辯之，皆大笑。（因話錄 4.10）

從語音相像的角度看，“-mi”很像是“弭”。然而“弭”在中古屬止攝開口三等，止攝開口三等除來母字，清澗話韻母皆變“ɿ”（舌尖元音），如：

| | | | | | | | | |
|----|-----|-----|------|------|------|------|----|-----|
| 比 | 皮 | 眉 | 地 | 資 | 支 | 雞 | 衣 | 里 |
| ɸɿ | ɸ'ɿ | ɛmɿ | ts'ɿ | ɕtsɿ | ɕtsɿ | ɕtsɿ | ɕɿ | ɕli |

所以，認爲是“弭”仍不符合語音演變條例。只是因爲有來母字的例，我們或許可以認爲“ɿ”的前身是“i”，“弭”字可能是作爲語音強式而保留下來的。所以，我曾在我的碩士論文《清澗方言》中說：

“們”字如果本音“門”，則讀“-mi”不符合語音演變規律。呂叔湘《漢語語法論文集》145 頁談到唐代文獻中，“們”字曾作“弭”或“偉”，並稱是“關中方言”。但止攝唇音字今或讀ei，或讀ɿ，不讀i。或是止攝韻母在這裡作爲語音強式保存下來也未可知。暫記此存疑。

最近發現的一些事實改變了我過去的猜測。現在我們可以有把握地說，清澗話的人稱複數詞尾“-mi”就是曾在近代白話文獻中盛極一時，後又銷聲匿跡的

那個複數詞尾“每”字。下面試述之。

二

清澗縣在陝北榆林地區的南端，緊靠黃河。它的音韻結構與陝北榆林、綏德、延安等地方言不同，而與黃河對岸的山西呂梁地區的方言相似。（參見侯精一，1986）與本文題旨有關的是呂梁地區的蟹攝一等字的讀音。

在呂梁地區許多方言裡，蟹攝一等之內疊置著兩個語音層次，開口度較大的一層和較小的一層。下面就以與清澗相鄰的永和，隰縣，石樓三縣為例。

| | 戴 | 來 | 災 | 菜 | 在 | 改 | 害 | 愛 |
|----|-------|-------|--------|---------|---------|-------|-------|-------|
| 永和 | tæɐ̯ | ɕlæɐ̯ | ɕtsæɐ̯ | ts'æɐ̯ | ts'æɐ̯ | ʰkæɐ̯ | xæɐ̯ | ŋæɐ̯ |
| | teiɐ̯ | ɕlei | - | ts'eiɐ̯ | ts'eiɐ̯ | ʰkei | xeiɐ̯ | ŋeiɐ̯ |
| 隰縣 | teiɐ̯ | ɕlei | ɕtsei | ts'eiɐ̯ | ts'eiɐ̯ | ʰkei | xeiɐ̯ | ŋeiɐ̯ |
| | teiɐ̯ | ɕlei | ɕtsei | ts'eiɐ̯ | ts'eiɐ̯ | ʰkei | xeiɐ̯ | ŋeiɐ̯ |
| 石樓 | teiɐ̯ | ɕlei | ɕtsei | ts'eiɐ̯ | tseiɐ̯ | ʰkei | xeiɐ̯ | ŋeiɐ̯ |
| | teiɐ̯ | ɕlei | ɕtsei | ts'eiɐ̯ | tseiɐ̯ | ʰkei | xeiɐ̯ | ŋeiɐ̯ |

開口度較大的一層即所謂的讀書音，較小的一層即口語音。因為這些方言都保存著兩套讀法，我們也就很想知道清澗話中是否也有兩套讀法。可是很不幸，清澗話蟹攝一等字只有 ai 韻的讀音。（參見拙作 1983。）

三

清澗話有一個常常引人訕笑的詞，即把孩子叫作“ɕiɐ̯”。這在周圍的方言裡是很孤立的。如清澗所在地區首府榆林，北鄰舊州治綏德，南鄰延川縣，以及舊府治延安，不是把孩子叫作“孩兒”，就是把孩子叫作“娃”或“娃娃”，不見與“ɕiɐ̯”相近的說法。清澗話的“ɕiɐ̯”是一個日常用詞，又是一個單音節詞，不便把它看作是某種音訛的結果。所以一個很自然的想法就是它有一個特殊

的來源，比如假定它是外族語。可是我們找不到任何社會，人文史上的證據，方言內部也不能提供任何消息。或者認為它是古漢語中曾經存在過的一個特殊的詞，然而查諸漢語歷史上曾經用過的有關孩子的稱謂（諸如“子”，“兒”，“息”，“廝”等）都不能在語音演變規律上完全通過。除非認為這是方言創新，是無源之水。不過，隱隱之中，我們似乎覺得表面上完全不同的“ɕiəʊ”與“孩”之間倒很像是有一種可以解釋的關係似的。

清潤話的音節兒化後，除了陰平和上聲，其他聲調要發生變化。陰入和陽入失去喉塞，聲調延長，分別變同上聲和陽平。陽平和去聲要對換調值，如：貓 ɕmɔ → mɔʊ；帽 mɔʊ → ɕmɔʊ。所以，“ɕiəʊ”還原，本來的聲調可能是陽入，也可能是陽平。如果是陽平，就與“孩”字同聲調了。“ɕiəʊ”聲母是ɕ，可是我們知道，依漢語歷史上曾經發生過的音變條例，x 在細音前可以變ɕ，而“ɕiəʊ”的韻母正好是細音。可見，對於“ɕiəʊ”和“ɕxai（孩）”來說，正所謂一間之隔，癥結只在韻母上。

給我們啓發的是前面提到的那些山西方言。在這些方言裡，孩子總是說“ɕxə”，語音還原均屬於開口度較關的那一層。因為有同一層次的其他字的讀音作證，我們可以確定“ɕxə”就是“孩兒”的白讀。這是很正常的。“孩兒”是一個日常用詞，它的讀音形式一般來說應當屬於白讀那一層。有意思的是清潤話的“ɕiəʊ”也是一個兒化詞，在構詞上與山西諸方言一致；在語音上，也是開口度較關的一類。清潤話與這些方言是隔河相望的鄰居，語言屬於一個系統；而清潤話所缺的正是開口度較關的一層讀音，我們沒法不想到它或許就是曾經存在過的一個白讀層的遺跡。

那麼“ɕiəʊ”的原韻母形式會是什麼樣的呢？兩點是已知的。它應當是齊齒呼，它的開口度應當較關。至於具體的音值則也有兩種可能，一是已經消失了的某種形式，一是現存的某種形式。如果是前者，除了找到當時的文獻記錄，我們已經無法推斷；如果是後者，那麼在現在的清潤話中能夠成為“iə”的有“i”“ie”和“iəʔ”三種韻母。“iəʔ”是入聲韻，不必考慮。“ie”韻部分來自入聲，部分來自山咸攝二等，依晉語一般情況，山咸攝與蟹攝總是保持一定距

離，也可排除。剩下可以考慮的形式就是“i”。把“i”看作與ai層相應的白讀形式，從音理上講，它是山西ei層的進一步高化，也符合我們前面說的兩點已知條件。

當然，這只是一種推測。我們希望得到新的證據。

四

令人興奮的是，當我們假定蟹攝一等曾經有一個語音層爲“i”時，我們就同時改變了對清澗話另一個複音詞的來歷的看法。清澗話稱“昨天”爲“ia²·li”，“ia²”是“夜”沒有問題。從語義上講，這個詞可能由“夜裡”轉移演化而來，我們曾經也這樣看。現在我們發現，它實際是近代白話中常見的“夜來”一詞。張相在《詩詞曲語辭匯釋》中舉有兩個非常精彩的例子，轉引如下：

《西廂》一之二：本云：“夜來老僧不在，有失迎迓，望先生恕罪。”生云：“欲來座下聽講，不期昨日不得相遇，今能一見，是在下三生有幸矣。”

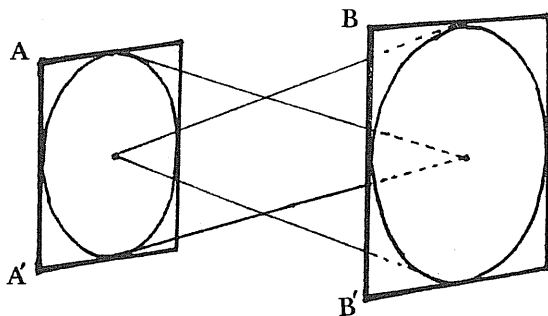
《蕭淑蘭》劇二：張世英上云：“昨日蕭公舉家拜掃。……”正旦扮嬖嬖上云：“……夜來清明，滿家上墳。……”

二例中都是文化程度高的人講“昨日”，文化程度低的人講“夜來”。換句話說，就是當時的文白差異。最近看《延川方言誌》，延川是清澗的鄰縣，“昨天”正說“夜來”，證實了我們的猜測。

孩字讀“çi”，來字讀“li”，現在我們又可以加上複數詞尾“每”。“每”在中古屬蟹攝一等。“每”字在清澗話中讀“mai”，“mi”正好是它的白讀層讀音。

五

孤證、孤例是語言研究中的大忌。可是孤證、孤例不見得不是事實。設若我們承認某種語言現象的衰敗或者興起是一個漸進的過程的話，那就是說它的變化如圖所示：



在 A-A' 平面是全局的現象，到了 B-B' 平面，它就成了殘存，甚至可能成爲一個點；反過來，在 A-A' 平面可能是局部現象（包括可能是一個點），而到了 B-B' 平面則成爲全局的現象。只要是一個數量增減的漸進過程，就完全有可能在某一個平面上形成“一個”，這是合乎邏輯的結果。相對任何一個平面，這“一個”就成了孤例；想要說點甚麼，就可能是孤證。用孤證來證明問題，當然是研究工作中的大忌。這好比兩點可以定一線，三點可以成一面，而就一點來引線，可引出的線的方向是無限的。所以，問題不在於它本身表明的可能不可能是事實，而在於我們怎麼知道它一定是事實。爲了不憑孤證徒逞臆說，我們的出路只能是設法改變這種孤立的境況。方言是民族共同語的地域變體，也是歷史的產物。由於不同區域政治、社會、文化狀態的差異，由於分化年代和接受標準語的影響不一，保留歷史成份和發展新要素的方式與程度也就會有種種差別。通過方言的比較，我們就有可能得到更多的例證和比較清楚的透視。

在現行的歷史語音學（音韻學）研究當中，對歷史文獻材料歧異的一種很自然的作法是把這些歧異的現象加以平均，如： $a + o = o$ ；在擬測古音時，常取

的辦法是：

$$(\text{上底} + \text{下底}) \times \text{高} \div 2$$

比如西夏對音材料中，有許多今天的鼻音尾韻對音爲非鼻音尾韻，於是我們就給當時一個鼻化音的形式，以期上下逢源。再比如上古音構擬中，各家元音不同，但有一點是共同的，這就是央元音“ə”的負擔最重，出現頻率最高。顯然這是因爲“ə”可以四通八達。當然，語音變化的一個重要方式是循序漸進，這樣做也不無根據。可是從現代方言呈現出的演變情況看，漢語演變方式要豐富多彩得多。這其間除了語音的漸移外，還有語音形式代換的變化。而後一種變化，很可能是漢語演變發展的一個更爲重要的方式。

下面再舉一個例子。中古果攝一等今北方方言多讀中高元音，但個別字有讀低元音的，顯示出曾經可能存在過的某種語音形式。如果我們把它放到方言中去看，就不難看出它的歷史衰變過程。下面是我調查過的幾個方言的情況和唐五代的一個漢藏對音材料（引自羅常培 1933，大乘中宗見解）的情況：

| | 多 | 他 | 那 | 大 | 我 | 何 | 羅 | 可 | |
|----|-----|-----|-----|------|--------|----|-----|------------------|-----|
| 清澗 | tu | t'a | nəʔ | t'u | ŋu | xu | lu | k'u | |
| 西安 | tuɤ | t'a | na | ta 文 | t'uɤ 白 | ŋɤ | xuɤ | luɤ | k'ɤ |
| 北京 | tuo | t'a | na | ta | uo | xɤ | luo | k'ɤ | |
| 綏德 | təŋ | t'a | na | ta | ŋa | xɤ | ləŋ | k'ɤ ¹ | |
| 大乘 | ta | t'a | | | no | ha | la | k'o | |

從清澗話看，讀 a 的只有一個孤例；從綏德話看，就成了一組。聯繫幾個方言，就成了一片。上溯唐五代，可以看到，這種語音形式的交替早就開始了。據今識古，似乎不好說“大乘”時期的韻母是一個 a 與 o 之間的音。所以，我們認爲在漢語歷史研究中引入層次的觀念，在方言研究中提倡方言比較是很重要的。如果這樣的層次發掘得多了，這樣的“語音片”聯繫得廣了，我們或許可以還漢語一個活生生的發展歷史。同時，利用近親方言的比較，我們可以恢復那些行將消

1 綏德話果攝開口一等端系字轉入陽聲韻，這裡再舉幾個例字：拖 t'təŋ、騾 lələŋ、馱 t'təŋ。另外假攝開口三等章組字也轉入陽聲韻，如：遮 t'tsəŋ、車 t'tsəŋ。

失的語音層次，解決許多疑難的個案問題。

呂叔湘先生在四十年代寫《說們》這篇文章時曾經寫道：

宋、元、明之間，同一個詞曾經有過們>每>們的反復變化，很不容易解釋。……較為近情的假設是把每和們認為屬於不同的方言系統。再推而廣之，弭，偉，們，每都是同一個語詞在個別方言個別時代的不同形式。

呂先生還具體設想了北方方言用每，南方方言用們，並且隨著社會政治狀況和人口變遷而在中國大地上兩種方言形式彼此消長的情景。呂先生在幾十年前就把方言差異的觀點和彼此消長的觀點引入漢語歷史的研究，這是很高明的。現代方言調查研究的成果向我們清楚地展示了漢語方言之間錯綜複雜的關係；尤其是結合歷史文獻的研究，令我們相信，各方言在歷史上絕不是簡單並存，各自獨立演進，而是不斷相互作用，並隨著社會的變更，關係時親時疏，地位有昇有降，地理分佈不斷伸縮變動的。這使那些把複雜的方言現象僅僅看作歷史先後關係的觀點相形見绌。漢語方言中普遍存在著所謂的“文”“白”異讀，在我們看來，這不僅是書面語和口語形式的差別問題，也不止是方言互相影響和滲透的結果。它應當說是由漢語特殊的語言文字關係以及特殊的中國式的標準語與方言間的關係造成的。有價值的地方正在於透過這些複雜的現象，我們可以看到歷史上曾經發生過的方言間影響和排斥，融合和分化交織在一起，有聲有色的演變過程，可以瞭解到它們共同在促成整個漢語向前發展中各自所扮演的角色，以及相互間複雜微妙的關係。

四十年前呂先生初作《說們》和四十年後編定《呂叔湘自選集》，都留下一個疑問：“何以到了元代以後北方系官話也不說每而說們，以致在現代的北方方言裡找不著每的痕跡？”清潤話的“每”的證明讓我們看到了這個被埋沒已久的遺存，但更重要的是讓我們看到了方言比較和語言層次的觀念在漢語史研究中的價值，於是我們說了以上的話。

（本文於民國八十一年十一月十九日通過刊登）

附誌：本文是美中學術交流委員會（CSCPRC）資助項目《西北方言語法研究》的一部分。特此聲謝。

參考文獻

- 呂叔湘 “們”和“家”，見《呂叔湘自選集》，上海教育出版社，1989。
- 說們（1949，國文月刊），見《漢語語法論文集》（145 ~ 168 頁），科學出版社，北京，1955。
- 劉勳寧 清澗方言，北京大學碩士論文（未刊），1982。
- 陝北清澗方言的文白異讀，《中國語文》1983年第1期（40 ~ 43 頁）。
- 侯精一 晉語的分區，《方言》1986第4期（253 ~ 261 頁）。
- 張 相 《詩詞曲語辭匯釋》（793 頁），中華書局，1966。
- 張 崇 《延川方言誌》，語文出版社，1990。
- 羅常培 《唐五代西北方音》（34 ~ 35 頁），歷史語言研究所，上海，1933。

The Origin of the Personal Pronoun and Human Noun Suffix [.mi] in the Ch'ing-chien Dialect of Shaanhsi

Xunning Liu

Tsukuba University

The plural of personal pronouns in the Ch'ing-chien dialect of Shaanhsi Province is composed of the singular forms [我] [你] [他] + the pluralizing suffix [.mi]; [.mi] is also the plural suffix for human nouns. The origin of this suffix is most probably the plural suffix [每] of the Yuan dynasty. Two arguments in favor of this view are as follows:

1) The Ch'ing-chien dialect of Shaanhsi is phonologically similar to the dialects of the neighboring Lü-liang area in Shanhsi Province. In those neighboring dialects, there are two strata in the first division of the *hsieh* 蟹 rhyme group. The first is a wide diphthong, the second is a narrow diphthong. The Ch'ing-chien dialect has only one stratum, realized as [ai]. The Ch'ing-chien word for child is [çiə³], its final can be reconstructed to correspond to the Lü-liang dialect's narrow stratum, this word comes from [孩] in the narrow stratum with suffixed [儿] .

2) The Ch'ing-chien word for "yesterday" is [ia²-li] which in origin is [夜來]. This word appears in the "Romance of the Western Chamber" and in Yuan drama. Both [孩] and [來] strongly support the argument that the suffix [.mi] is [每] (all three are first division words in the *hsieh* [蟹])

rhyme group).

This example demonstrates that by applying the concepts of dialect comparison and linguistic stratification to the study of Chinese dialects, we are not only able to solve a long standing puzzles of Chinese linguistics, but we may also be to attain a new vision of the history of the Chinese language.

Interaction of Syntactic Changes

One-soon Her

National Chengchi University

The recent thesis of rule interaction expounded in Hsieh (1989, 1990, ms.) extends the concept of competing rules in lexical diffusion (Wang 1969) by viewing irregularity in historical changes as well as variation in synchronic grammatical constructions as consequences of the internal interaction among applicable rules. This paper provides further empirical support for the interaction thesis, by illustrating the two types of interaction, i.e., complementation and competition, with the historical development of *yi3*, *ba3*, *jiang1*, and *na3* and the variation of transitivity in VO compound verbs, respectively.

0. Introduction

In this paper we will first review the essential concepts of the 'lexical diffusion hypothesis', originally put forth by Wang (1969) to account for irregularity, or residue, in sound changes. We then present the two basic types of rule interaction, complementation and competition, in the recent thesis of rule interaction conceived in Hsieh (1989, 1990) and more explicitly formulated in Hsieh (ms.). While maintaining the notion of lexical diffusion, the thesis of interaction extends the concept of competing rules to other areas of grammatical change and variation. We will illustrate 'complementation' with the two principles: refinement and analogy, which facilitated the recurring pattern of the historical development among *yi3*,

jiang1, *ba3*, and *na2*. We then demonstrate that, within the framework of Lexical-Functional Grammar, or LFG (e.g., Kaplan and Bresnan 1982, Sells 1985, and Kaplan 1989), the variation of transitivity among three types of VO compound verbs can be attributed to the conflict of two rules competing for transitivity in the constituent structure and functional structure of VO compound verbs.

1. Lexical Diffusion and Rule Interaction

Since the advent of the neogrammarian doctrine, now also known as the 'regularity hypothesis', which holds that all sound changes operate without exceptions, one of the most significant theoretical breakthroughs in historical phonology is the 'lexical diffusion hypothesis' (Wang 1969). The lexical diffusion hypothesis maintains that a sound change, though phonetically abrupt, affects the applicable lexical items in the lexicon in a gradual manner. Essentially, it recognizes that a sound change must take an extended period of time to complete; thus, before it reaches all the applicable lexical items in the lexicon, there may exist another concurrent sound change that competes for all or part of the same range of applicable lexical items in the language. Competing changes therefore may cause residue, or irregularity.

The lexical diffusion hypothesis, however, does not contradict the neogrammarian regularity hypothesis, which, in recognizing that linguistic changes operate in a systematic manner, provides an essential, if not necessary, working basis (e.g., Wang 1969, Labov 1978). Rather, the lexical diffusion hypothesis complements the neogrammarian principle by taking into consideration two additional factors--1) the temporal duration of the course of a sound change and 2) the possible interference of other changes. Linguistic changes therefore can still be recognized as regular, by default;

however, irregularity may occur when during the course of a change there is another change competing for all or part of the same domain of application.

Extending this concept of rule competition to the study of syntactic changes as well as variations of a synchronic grammatical construction, Hsieh (1989, 1990, 1991) derives a thesis of rule interaction, which holds that at any point in time, given a syntactic construction, grammatical rules applicable to this particular construction are engaged in a constant interaction of some sort. Variation or irregularity is viewed as the normal and natural consequence of such interaction. Thus, within such a view, the conventional distinction between irregularity in historical changes and variations in synchronic constructions is rendered superfluous. Furthermore, while this thesis provides an interpretation of the ever-changing nature of language, it makes no prediction as to whether linguistic changes simplify or complicate grammar in the long run.

Two basic types of rule interaction are identified: complementation and competition (Hsieh ms.), as shown in Fig. 1. Two rules are said to be in 'complementation' if their domains of application do not intersect. Furthermore, if we borrow the more familiar terminology in historical phonology, then when the output of one rule expands, or 'feeds', the other rule's domain of application, then they are also in a 'feeding' relation (Kiparsky 1978). On the other hand, two rules are in 'competition' if their domains of application intersect or coincide. Competition often yields variation or irregularity; in such cases, the competing rules are said to be in 'conflict'. Two rules in conflict are also in a 'bleeding' relation, for now the application of one deprives the other of its inputs (Kiparsky 1978). However, if no variation or irregularity arises from the competition, then the two rules are in 'conspiracy'.

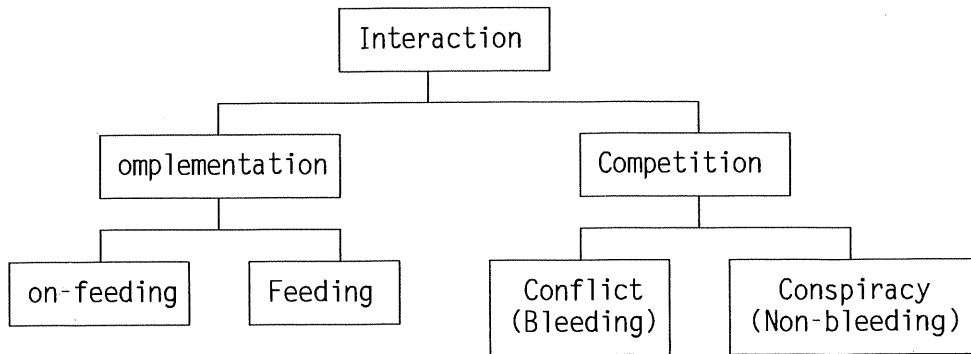


Fig. 1. Basic types of interaction

We will now reiterate the definitions of the various types of rule interaction in more formal terms, based on Hsieh (ms.). Note however that we identify Hsieh's conflict and conspiracy with bleeding and non-bleeding respectively. We further distinguish the complementation type as having two subtypes, feeding and non-feeding, and thus achieve a symmetry between complementation and competition.

Complementation: Given a specified domain, D , and two rules, $R1$ and $R2$, if $R1$ applies in D while $R2$ does not, then $R1$ and $R2$ are in complementation.

Feeding: Given two rules in complementation, $R1$ and $R2$, if the output of $R1$ serves as the input of $R2$, then $R1$ is in a feeding relationship with $R2$ (but not vice versa).

Non-feeding: Given two rules in complementation, $R1$ and $R2$, if the output of $R1$ is not the input of $R2$, then $R1$ is in a non-feeding relationship with $R2$ (but not vice versa).

Competition: Given a specified domain, D, and two rules, R1 and R2, if both R1 and R2 apply in D, then R1 and R2 are in competition.

Conflict (or bleeding): Given two competing rules, R1 and R2, if the same input yields two or more results, then R1 and R2 are in conflict (or in a bleeding relationship).

Conspiracy (or non-bleeding): Given two competing rules, R1 and R2, if the same input yields a unique result, then R1 and R2 are in conspiracy (or in a non-bleeding relationship).

According to this taxonomy, the following logical relations among feeding, bleeding, non-feeding, and non-bleeding can also be observed. It is possible for feeding to obtain only when two complementary rules are ordered consecutively; otherwise, non-feeding obtains. Bleeding obtains only when two competing rules subvert each other; otherwise, non-bleeding obtains. Thus, non-feeding and non-bleeding can be subsumed under the relation of 'disassociation' or 'disconnection'--while two disassociated rules in complementation are non-feeding, two disassociated rules in competition are non-bleeding. Likewise, feeding and bleeding are subsumed under the relation of 'association'--while two associated rules in complementation are feeding, two associated rules in competition are bleeding.

The concept of competing rules in lexical diffusion has become well established by now in historical phonology (e.g., Chen and Wang 1975, Lien 1987, Ogura 1990, Shen 1990). The extended thesis of rule interaction has also been applied in several areas of Chinese syntax, e.g., Chang (1990, 1991), Her (1991a), M. Hsieh (1991), Gai (1991), Zhu (1991), Cheng (ms.),

and H. Hsieh (1990, 1991). In this paper, we will illustrate the two types of interaction: complementation and competition, with observations of the historical development of *ba3/jiang1* and variation of transitivity in VO compound verbs, respectively, and thus further validate the interaction thesis.

2. Refinement and Analogy: Rules in Complementation

Although there is still argument among scholars regarding the specific mechanisms which brought out the prepositional functions of *ba3/jiang1*, certain observations have become generally accepted.¹ *Ba3* and *jiang1* functioned solely as verbs until the Tang Dynasty (A.D. 618-907) when they acquired the instrumental and disposal functions (e.g., Wang 1958, Bennett 1981, Peyraube 1989).² Yet, contrary to their use in modern Mandarin, during the Tang Dynasty, *jiang1* appeared much more frequently than *ba3* in the instrumental as well as disposal constructions (e.g., Huang 1986, Peyraube 1989, Lu 1955, Her 1990). Before the Tang Dynasty, *yi3*, aside from being a verb, appeared primarily in the instrumental construction and, in restricted cases, the disposal construction as well (e.g., Bennett 1981, Zhan 1973).³ *Na2*, like *ba3* and *jiang1*, was originally only a verb, until the Ching

1 Ross (1991) and Mo (1990) have argued recently that *ba3* should still be analyzed as a verb in modern Mandarin; such a position was of course hinted as early as Mei (1978). However, we will stay with the more conventional account and regard *ba3*, *jiang1*, and *na2* as prepositions in instrumental and disposal constructions.

2 For ease of discussion, in this paper we will maintain the traditional term 'disposal' to refer to the *ba3/jiang1* prepositional function of assigning a Theme (versus Patient) role to the following NP (Chang 1990, Her 1991). Furthermore, to maintain a more concise discussion, we refer the interested readers to Her (1990) or Peyraube (1989) for actual examples of *ba3/jiang1* in the Tang Dynasty.

3 We are referring to the very common use of *yi3* in the double object construction (e.g., Zhan 1973, Bennett 1981) and the few instances where *yi3* marks a

Dynasty (A.D. 1644-1911) when it also acquired the instrumental function, as observed by Wang (1958).⁴ Based upon these observations and specific statistics on data from *Shishuo Xinyu* and texts of *Chuanqi* and *Bianwen*, the following systematic account is given in Her (1990), where ample examples and detailed argumentation on the particular historical mechanisms facilitating these changes can also be found.

Stage 1: before the Tang Dynasty

- a. *yi3* functioned in verbal, instrumental and disposal constructions.
- b. *jiang1*, a verb, shared *yi3*'s verbal function.
- c. *ba3*, also a complete verb, shared *jiang1*'s function as a verb, meaning 'to take' or 'to hold'.

Stage 2: during the Tang Dynasty

- a. *yi3* lost its function as a verb and the use of *yi3* in instrumental and disposal constructions decreased.
- b. *jiang1*'s functions increased: verbal, instrumental, and disposal, and in the disposal construction, *jiang1* was the dominant choice.
- c. *ba3* also started to appear, though far less frequently than *jiang1*, in instrumental and disposal constructions.

preposed object when the verb is followed by a locational complement (e.g., Zhan 1973:371):

9. Yi3 bai3 qian2 gua4 mei2tou2
 YI hundred money hang branch
 (He) hang a hundred coins on the branch.

4 Arguably, *ba3* may still be analyzed as an independent verb in idiomatic expressions like *ba3-feng1* 'to be on the lookout'.

Stage 3: in modern Mandarin

- a. *yi3* has lost all its functions in speech.
- b. *jiang1* is hardly ever used in speech, either.
- c. *ba3* dominates the disposal construction, but it has lost all the other functions.⁵
- d. *na2*, which shares *ba3*'s verbal meaning, has also acquired the instrumental function, and in some limited cases, it is competing with disposal *ba3*.⁶

-
- 5 During the Ching Dynasty, *na2* surely was competing with *ba3* in the instrumental construction, as evidenced in the following sentence from the novel *Hongloumeng* where *na2* and *ba3* are used interchangeably in the instrumental construction (Lu 1955:141).

10. Jia3yun2...na2 yan3 ba3 Xiao3hong2 yilli1;
 Jiayun NA eye BA Xiaohong look
 na4 Xiao3hong2...ye3 ba3 yan3 qu4 yilli1 Jia3yun2
 that Xiaohong also BA eye to look Jiayun
 Jiayun glanced at Xiaohong quickly; Xiaohong also took a quick look at Jiayun.

- 6 We are referring to the following types of use of *na2*, where its NP seems to be assigned the Theme role.

- 11a. Bie2 na2 ta1 qu3xiao4.
 don't NA he laugh-at
 Don't laugh at him.
- 11b. Bie2 qu3xiao4 ta1.
 Don't laugh at him.
- 12a. Ni3 gen1ben3 na2 ta1 bu4 dang1 ren2.
 you at-all NA he not treat-as human
 You don't treat him as a human at all.
- 12b. Ni3 gen1ben3 ba3 ta1 bu4 dang1 ren2.
 You don't treat him as a human at all.
- 13a. Ni3 na2 wo3 gen1 ta1 bi3.
 you NA I with he compare
 You compare me with him.
- 13b. Ni3 ba3 wo3 gen1 ta1 bi3.
 you BA I with he compare
 You compare me with him.

Note that during the Tang Dynasty, as the use of instrumental and disposal *jiang1* was mounting, that of *yi3* was falling dramatically in speech (Her 1990). In addition to this, the observation that *yi3* and *jiang1* shared similar functions during and before the Tang Dynasty led Bennett (1981) to the belief that the rise of instrumental and disposal *jiang1* was instigated by *yi3*. In modern Mandarin, however, *jiang1*, like *yi3*, has disappeared from speech almost entirely, while *ba3* has become the dominant choice in the disposal construction (e.g., Lu 1955, Ding et al 1979, Chen et al 1982, Sun and Givon 1985). This historical factor and the observation of the similar verbal meanings of *ba3* and *jiang1*, and the preferred use of instrumental and disposal *jiang1* over *ba3* in the Tang Dynasty all seem to support Huang's (1986) assertion that the development of *ba3* during the Tang Dynasty was modeled after *jiang1*.⁷ In turn, the recent downfall of verbal and instrumental *ba3* in Mandarin coincides with the rise of verbal and instrumental *na2*. In some limited cases, *na2* has also started invading *ba3*'s disposal function. Again, this observation and the similar verbal meaning between *ba3* and *na2* suggest that *na2* is modelling itself after *ba3*, a relationship similar to that of *jiang1* and *ba3*, and also that of *yi3* and *jiang1*

Moreover, the fact that in some dialects of Chinese, such as Wu, only *na2*, not *ba3*, is used in the disposal construction (e.g., Wang 1985) also strongly indicates that *na2* has been encroaching upon disposal *ba3*.

- 7 This position assumes that verbal *jiang1* reanalyzed to acquire the instrumental and disposal functions prior to the emergence of instrumental and disposal *ba3*. We recognize that this assumption may need further evidence; however, the fact that not only throughout the Tang Dynasty but even towards the end of the 10th century *jiang1* was still overwhelmingly the preferred choice in both constructions strongly favors this assumption. See Huang's (1986) statistics on *ba3* and *jiang1* of *Zutanji* (A.D. 952), a collection of Zen dialogues.

(Her 1990).⁸

The rise and fall of the various functions of *yi3*, *jiang1*, *ba3*, and *na2* suggest that there are two principles at work facilitating this chain of changes: refinement (Li 1980) and analogy, formalized as the following (Her 1990):

The principle of refinement:

if element X has multiple functions, e.g. f1, f2, and f3, then X is likely to reduce the number of its functions.

The principle of analogy:

if element Y shares its function, e.g., f1, with X, then Y is more likely, than other elements that share no functions with X, to acquire some or all of X's other functions, e.g., f2 and f3.

While refinement accounts for the eventual decline of *yi3*, *jiang1*, and verbal and instrumental *ba3*, analogy provides an interpretation of the rise of instrumental and disposal *jiang1*, *ba3*, and *na2*.⁹ Notice also that the

8 Another lexical item that appeared, though rarely, in the disposal construction in the Tang Dynasty is *zhuo1*, which, according to Peyraube (1989), is found only in Bianwen and disappeared totally from the disposal construction after the Tang Dynasty. Once again, it is interesting to point out the similar meaning of verbal *zhuo1* 'to hold' or 'to catch' and verbal *jiang1*, *ba3*, and especially *na2*. Therefore, a closer look might reveal that, like *ba3*, *zhuo1* developed its disposal function modelling after either *jiang1* or *ba3*.

9 Most scholars consider that the emergence of instrumental and disposal *ba3*, similar to *jiang1*, was via the reanalysis (or grammaticalization) of verbal *ba3* in serial verb constructions (e.g., Lu 1955, Wang 1958, Li and Thompson 1974, Bennett 1981, Peyraube 1989 and to appear), while Huang (1986) and Her (1990) contend that, unlike the reanalysis of *jiang1* serial verb construction, *ba3* acquired its instrumental and disposal functions by lexically replacing *jiang1*. Aside from the reasons mentioned earlier, their primary argument is that, since *ba3* was

refinement process reduces a one-to-many relation between a linguistic form and its functions and thus promotes linguistic 'transparency' (Langacker 1977); analogy, on the contrary, encourages a one-to-many relation by increasing the syntactic functions of a linguistic form. From this perspective, the development of *yi3*, *jiang1*, *ba3*, and *na2* can be summarized as below:

Stage 1:

- a. *yi3*: candidate for refinement
- b. *jiang1*: candidate for analogy to *yi3*
- c. *ba3*: candidate for analogy to *jiang1*

Stage 2:

- a. *yi3*: undergoing refinement
- b. *jiang1*: undergoing analogy to *yi3*, and also becoming a candidate for refinement

seldom used in the serial verb construction in the Tang Dynasty, it is unreasonable to assume that prepositional *ba3* came from the grammaticalization of verbal *ba3* in the serial verb construction. And, again, observations in other dialects may shed some light. The fact that in the Wu dialect, *na2*, but not *ba3*, is used in the disposal construction (e.g., Wang 1985) and that in the Cantonese vernacular, *jiang1*, not *ba3*, still dominates the disposal construction (Larry Browning, personal communication) indicates that *ba3* and *jiang1* have developed along different paths in Mandarin.

Here, however, it is more important to note that analogy is a higher strategy of language change compatible with both mechanisms, reanalysis and lexical replacement. An excellent example is Peyraube's (1988) account of the development of passive constructions. He suggests that, during the Han period, by analogy with *jian4*, *bei4* lexically replaced *jian4* in its serial verb construction; and later during the Sui and Tang Dynasty, by analogy with *wei2* in the [*wei2* + Agent + V] construction, verbal *bei4* reanalyzed to be a preposition, without lexically replacing *wei2* however.

- c. *ba3*: starting to undergo analogy to *jiang1* and also becoming a candidate for refinement

Stage 3:

- a. *yi3*: has undergone refinement
- b. *jiang1*: has undergone refinement
- c. *ba3*: has also undergone refinement
- d. *na2*: candidate for analogy to *ba3*, and undergoing the process

The dynamic counteraction between these two principles not only accounts for the recurring pattern of historical changes among *yi3*, *jiang1*, *ba3*, and *na2*, but also provides a partial explanation of how languages are constantly changing and yet in the long run they do not appear to decrease nor increase in overall complexity (Langacker 1977). However, it is also implicit in the interaction thesis that the interactive forces may periodically simplifies or complicates a grammar to achieve a dynamic equilibrium of the grammar.

In terms of the interaction between analogy and refinement, since refinement applies to linguistic forms with multiple functions, while analogy tends to apply to elements with a single (shared) function, these two principles do not compete for their domain of application, as shown in Fig. 2. Therefore, they serve as an example of rules in complementation. Moreover, the principle of analogy is also in a 'feeding' relation with the principle of refinement, in that the output of analogy is applicable to, or 'feeds', refinement. Thus, after the analogous development, *ba3* and *jiang1* (and perhaps *na2* as well) have also become candidates for refinement.

| RULE TYPE | DOMAIN OF APPLICATION | RESULT |
|------------|--------------------------------------|----------------|
| Analogy | forms with a shared function | 1-to-many |
| Refinement | forms with multiple functions | 1-to-1 or null |
| | No intersection (COMPLEMENTATION) | (feeding) ↓ |

Fig. 2. Complementation of analogy and refinement

In the next section we will show an example of two competing rules in conflict, or in a ‘bleeding’ relation, with an LFG account of the variation in transitivity resulting from the historical reanalysis in VO compound verbs.

3. Transitivity of VO Compound Verbs: Rules in Competition

VO compounding is a well-recognized word formation mechanism in Chinese (e.g., Chao 1968, Li and Thompson 1981, Huang 1984). If we assume lexical integrity, as stated in Huang (1984:60) that ‘no phrase-level rule may affect a proper subpart of a word’, then a VO compound can be more explicitly defined as a lexical unit (of an X-zero category in terms of X-bar syntax) whose inner structure, though historically traceable to be [V+O], is inaccessible to phrase-level rules. A genuine compound thus should behave exactly like other non-compound words of its syntactic category. The majority of VO compound verbs, e.g., *shiliyi4* ‘to be depressed’ and *kailxin1* ‘to be happy’, are intransitive and do not allow objective postverbal NPs;

however, there are some VO verbs that do behave transitively, e.g., *de2zui4* 'to offend' and *chulban3* 'to publish'.

In English, there is also a class of verbs which seems to be of a similar nature, for example, *babysit*, *bartend*, *job-hunt*, and *grocery-shop*, etc. However, these may not be compounds of the genuine OV-type, as there is no general pattern of [OV] in English syntax. Rather, these are sporadic backformations from the fairly productive noun-noun compounds like *babysitter*, *bartender*, *job-hunting*, and *grocery-shopping* (Baker 1988:78). Like VO verbs in Chinese, however, although most of these verbs are intransitive, a few exceptions do exist, e.g., *babysit* and *typeset*.

1a. Jenny has to babysit her little brother tonight.

1b. We can typeset the book for you at \$8.00 per page.

In Mandarin, nonetheless, as first observed by Huang (1989a), there exists yet another type of VO verbs, e.g., *na2shou3* 'to be good at', which cannot take an objective postverbal NP and yet require an objective topic. We will refer to this small set of VO verbs as 'semi-transitive' verbs. Thus, three types of VO compound verbs are identified: (a) intransitive, e.g., *shilyi4* 'to be depressed', (b) transitive, e.g., *de2zui4* 'to offend', and (c) semi-transitive, e.g., *na2shou3* 'to be good at.' More examples are given in the appendix.

2a: shi1 'to lose' + yi4 'sentiment' -> shilyi4

2b: de2 'to gain' + zui4 'guilt' -> de2zui4

2c: na2 'to take' + shou3 'hand' -> na2shou3

- 3a. Ta zui4jin4 hen3 shilyi4. 'intransitive'
 he recently very depressed
 He has been very depressed recently.
- 3b. *Ta hen3 shilyi4 ma3li4.
 he very depressed Mary
- 4a. *Ta de2zui4. 'transitive'
 he offend
- 4b. Ta mei2 de2zui4 ma3li4.
 He not offend Mary
 He didn't offend Mary.
- 4c. Ma3li4, ta1 mei2 de2zui4.
 Mary, he didn't offend.
- 5a. *Ta na2shou3. 'semi-transitive'
 he good-at
- 5b. *Ta na2shou3 shu4xue2.
 He is good at math.
- 5c. Shu4xue2, ta1 na2shou3.
 Math, he is good at.

We adopt an analysis for these verbs in LFG (Her 1991, 1991a). An LFG grammar assigns two levels of syntactic representation to a sentence: a c-structure (constituent structure), which reflects the constituent hierarchy and linear ordering in a sentence, and an f-structure (functional structure), which represents the grammatical, functional information. It is in the f-structure that grammatical relations like TOPIC, SUBJ (subject) and OBJ

(object) are stated. The c- and f-structures together form a co-description of a linguistic expression; thus, although they are two different kinds of syntactic representation, they are an integrated whole. The following illustration depicts the co-description of the c- and f-structure of the sentence 'They like Mary.'

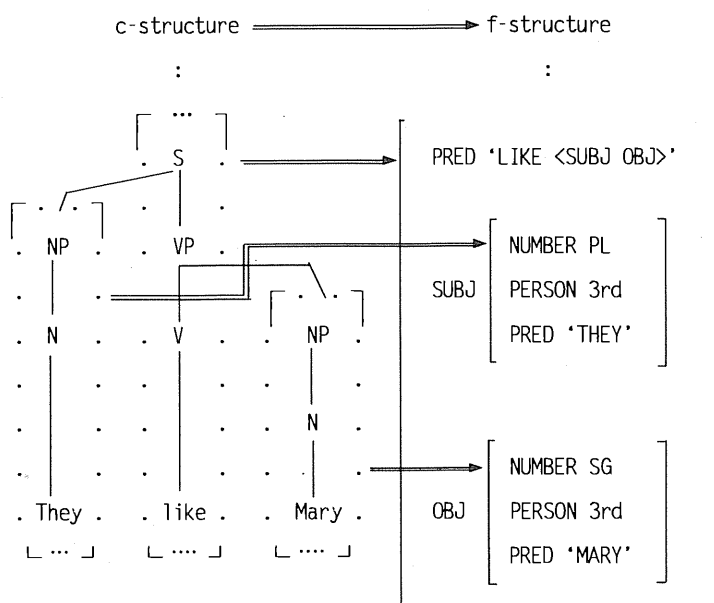


Fig. 3. Co-description of c- and f-structure

While phrase structure rules regulate c-structures, LFG also posits certain well-formedness conditions on f-structures, e.g., Completeness and Coherence. The Completeness and Coherence conditions are directly related to the concept of subcategorized grammatical functions.

Completeness

An f-structure is locally complete if and only if it contains all the subcategorizable grammatical functions that its predicate subcategorizes

for. An f-structure is complete if and only if all its subsidiary f-structures are locally complete.

Coherence

An f-structure is locally coherent if and only if all the subcategorizable grammatical functions that it contains are subcategorized-for by a local predicate. An f-structure is coherent if and only if all its subsidiary f-structures are locally coherent.

A subcategorizable function must obey the conditions of Completeness and Coherence; yet, a non-subcategorizable function, e.g., ADJUNCTS, need not. A grammatical function is either subcategorizable or non-subcategorizable in a given language; it cannot be both. TOPIC in LFG is a grammatical relation parallel to subject and object. While SUBJ and OBJ are recognized in the theory as universally subcategorizable, TOPIC's subcategorizability is said to be language-dependent. However, as demonstrated substantially in Her (1991, 1991a), an analysis of subcategorized TOPICs in Chinese, such as the ones proposed in Huang (1989a) and Mo (1990), poses several unresolvable problems and misses all kinds of generalizations; thus, in spite of its (often exaggerated) prominence in Chinese, TOPIC has to be considered a non-subcategorizable function.

A transitive verb subcategorizes for OBJ in its f-structure and allows, but does not require, an objective postverbal NP in c-structure; an intransitive verb, on the other hand, does not subcategorize for OBJ, nor does it allow any objective postverbal NP. This analysis also specifies that although semi-transitive verbs such as *na2shou3* in 6c do indeed subcategorize for an OBJ in f-structure, this OBJ is required to be [FRAME +], which, as

regulated by rule 7a, can be obtained only through unification with the matrix TOPIC. As a consequence of this constraint on semi-transitive verbs, overt postverbal objective NPs are ruled out while a matrix TOPIC is required. The unique assignment of the semantic attribute [FRAME +] to TOPIC is justified for TOPIC's semantic function can be characterized as setting 'a spatial, temporal or individual framework within which the main predication holds' (Chafe 1976:50).¹⁰ Relevant sample lexical entries and augmented phrase structure rules are given in 6 and 7.

6a. shilyi4 V

(↑ PRED) = 'DEPRESSED <SUBJ>'

6b. de2zui4 V

(↑ PRED) = 'OFFEND <SUBJ OBJ>'

6c. na2shou3 V

(↑ PRED) = 'BE-GOOD-AT <SUBJ OBJ>'

(↑ OBJ FRAME) =_c +

7a. S' -> NP S

(↑ TOPIC) = ↓ ↑ = ↓

(↓ FRAME) = +

(↑ ...) = ↓

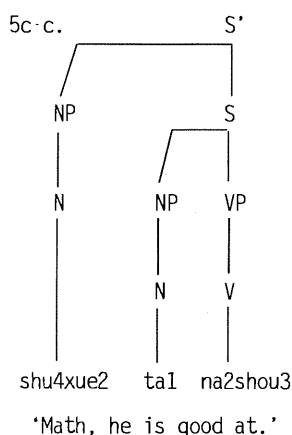
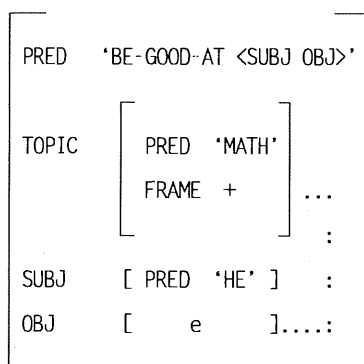
10 Her (1991a) thus proposes the term 'frame' to refer to the semantic or discursal function encoded by topic, now a syntactic notion, since topic functions semantically as the interpretive framework of the main predication. Chao's (1968: 69) famous statement that the semantic relation of subject and predicate in Mandarin is that of topic and comment could now be restated: the semantic relation between topic and predicate in Mandarin is that of frame and comment.

7b. S → (NP) VP
 (↑ SUBJ) = ↓ ↑ = ↓

7c. NP → V (NP)
 ↑ = ↓ (↑ OBJ) = ↓

Within this analysis, 5a and 5b are ill-formed because their respective f-structures violate the functional constraint specified in the lexical entries of semi-transitive verbs, $(\uparrow \text{OBJ FRAME}) =_c +$, which requires [FRAME +] in *na2shou3*'s OBJ. However, this constraint is satisfied in the f-structure of 5c since its OBJ unifies with TOPIC through the operation of functional uncertainty, $(\uparrow \dots) = \downarrow$.¹¹ We will illustrate the well-formed c- and f-structure of 5c below.

5c-f. Shu4xue2, ta1 na2shou3.



To account for the variations of transitivity in VO compound verbs, we suggest that there are two competing rules affecting the c- and f-structures of VO compound verbs. The incorporation process is thus viewed as a

11 Refer to Huang et al (1989) and Xie (1990) for more thorough LFG accounts of functional uncertainty and topics in Mandarin Chinese.

reanalysis of the VO syntactic structure into a morphological one.

8. [V incorporates OBJ] → V:
{

A. [- TRANSITIVE]
B. [+ TRANSITIVE]

In terms of transitivity, four logical consequences may result from the competition of 8A and 8B in c- and f-structures of VO compound verbs. Each consequence corresponds to an individual type of transitivity in VO verbs, as depicted in Fig. 4, where the + and - signs indicate transitivity (the vertical TRAN).

| | c-structure | f-structure | Consequence |
|---|-------------|-------------|----------------------------------|
| T | - | - | Intransitive: <i>shilyi4</i> |
| R | + | + | Transitive: <i>de2zui4</i> |
| A | - | + | Semi-transitive: <i>na2shou3</i> |
| N | + | - | None |

Fig. 4. Transitivity of VO verbs

The Intransitive Rule 8A has been fully realized in intransitive VO compounds like *shilyi4*; thus, they do not subcategorize for OBJ, nor allow objective postverbal NPs. On the other hand, in transitive VO compounds like *de2zui4*, the Transitive Rule 8B has prevailed in both f- and c-structures; they therefore subcategorize for OBJ in f-structure and also allow objective postverbal NPs in c-structure.

As for semi-transitive VO verbs like *na2shou3*, the Intransitive Rule 8A has affected their c-structure; hence they cannot take a lexically overt objective postverbal NP. Yet, the competing Transitive Rule 8B has affected their f-structure; they thus subcategorize for OBJ. Consequently, the OBJ

required by the f-structure cannot be fulfilled by a lexically overt postverbal NP; rather it has to be fulfilled by an anaphoric control relation with the matrix TOPIC. Their lexical entries therefore must specify (↑ OBJ FRAME) =_c + to ensure the existence of a matrix TOPIC that anaphorically controls their OBJ, and to also rule out a lexically overt, structurally assigned OBJ, which would not receive [FRAME +].¹²

The fourth and last logical consequence due to the interaction of these two competing rules is VO compounds whose c-structure is transitive but whose f-structure is intransitive, exactly the opposite of semi-transitive verbs. We find no such case in Chinese; and we doubt they will ever be found in any language. Such a consequence would necessarily lead to an incoherent, thus ill-formed, f-structure since the lexically overt, structurally assigned OBJ, a universally subcategorizable function, is not subcategorized for by the verb within the f-structure. The universal grammar therefore predicts, correctly, that the interaction between the two rules 8A and 8B will never yield such a consequence.

-
- 12 Again, recall that the c- and f-structure in LFG are co-description of a linguistic expression. Although they are two different kinds of information, they are an integrated whole. Thus, what appears to be a c-structure constraint may in fact be fulfilled by an f-structure condition. Take the following sentence for example:

14. *Mary kissed John a kiss.

(Intended meaning: Mary gave John a kiss.)

Although it is a c-structure constraint that prohibits the verb *kiss* from taking a second NP, the actual fulfillment of this constraint is by way of an f-structure condition--the sentence is ruled out due to the incoherent OBJ2 (indirect object) in the f-structure. Similarly, the fact that in the f-structure *kiss* cannot have OBJ2 also means that in c-structure it does not allow a second NP. Similarly, the c-structure constraint that *na2shou3* does not allow postverbal objective NPs is fulfilled through an f-structure constraint that its OBJ must contain [FRAME +].

| RULE | DOMAIN OF APPLICATION | RESULT |
|--------|--------------------------------|--------------------------|
| - TRAN | c- and f-structure of VO verbs | Intran. c- and f-s. |
| + TRAN | c- and f-structure of VO verbs | Tran. c- and f-s. |
| | intersection (COMPETITION) | (bleeding) (CONFLICT) |

Fig. 5. Competition of transitivity and intransitivity

As shown in Fig. 5, since the Transitive Rule and the Intransitive Rule are both applicable to the c- and f-structures of VO compound verbs, they are in competition. In other words, the domains of their application intersect. Furthermore, since as a result of their competition, a single input of these two rules may have three possible variations in terms of its transitivity, the two rules are also in conflict, or in a 'bleeding' relation, i.e., the application of one rule deprives the other rule of its applicability.

4. Concluding Remarks

Wang's (1969) lexical diffusion hypothesis did not fancifully invent the existence or the reality of competing sound changes that affect a lexicon gradually; rather, it provided the necessary theoretical constructs within which irregularity in sound changes can be precisely accounted for. By applying this well-tested hypothesis to the description of syntax, Hsieh (1989) extended its two most important theoretical constructs beyond the study of phonology: 1) changes affecting the grammar take effect gradually; and 2) variations of a grammatical construction are due to the interaction of

competing rules. Furthermore, by identifying a taxonomy of interaction, Hsieh (ms) ingeniously covers all possible types of interplay among rules and allows either regularity or variation as the result of an interplay. In fact, this taxonomy of rule interaction, by dividing interaction into complementation and competition, has tacitly reconciled the dispute between the determined neogrammarian stance and the resolute variationist position, for while competition tends to create variation, complementation coincides largely with regularity.

In this paper we have presented the essential concepts within this thesis of rule interaction and applied them to account for two observations in Chinese syntax. The recurring pattern of change among *yi3*, *jiang1*, *ba3*, and *na2* is attributed to the 'feeding' complementation of two principles, refinement and analogy; and, within an LFG analysis, the variation of transitivity in VO verbs is accounted for through the conflict of two rules competing for transitivity in c- and f-structures. While the latter is an instance of competition of two specific rules, the former illustrates the complementation between two general rule types.

Within the mainstream grammatical theory, the Government and Binding Theory (GB), much emphasis has been placed on reducing the earlier various ad hoc transformations to a single rule, Move- α , and on formulating a network of constraints in different syntactic modules to regulate the application of this single transformation. Variations of grammatical constructions can no doubt be expressed in terms of the interaction of the different modules or the various constraints. Huang (1988), which constitutes an original analysis of the variations of the Chinese A-not-A construction, for instance, can be seen as a study which seeks to account for these variations from the point of view of interaction between syntax and phonology. It

should also be fruitful to approach the study of parameters in the universal grammar from the perspective of interaction. LFG, as possibly the most popular alternative theory to GB, on the other hand, has eliminated entirely the theoretical validity of transformations and employs morpho-lexical processes to account for many syntactic phenomena that were previously accounted for by transformations (e.g., Huang 1989). Grammatical variations, therefore, can be accounted for in terms of the interaction of these morpho-lexical processes. Also, as we have demonstrated with VO verbs, rules affecting different linguistic planes, e.g., the thematic, c- and f-structures, may interact and cause variation. The interaction thesis is therefore compatible with current linguistic theories and provides a promising framework for linguistic description.

(Accepted for publication 19 November 1992)

Acknowledgements

Prof. Hsin-I Hsieh carefully read a previous version of the paper and suggested a number of improvements both in style and argumentation. Dr. Larry Browning and Prof. Ying-Yu Sheu have also provided very helpful comments. I thank them. A previous version of the paper was presented at IsCLL II. I am grateful for the travel grant from Academia Sinica, and for the encouraging comments from Prof. Tsu-Lin Mei, Prof. Robert L. Cheng, and Prof. William S.-Y. Wang. Last but not least, comments by the anonymous reviewer have also led to several improvements. However, I am of course solely responsible for the content in the paper.

REFERENCES

- Baker, M., 1988. *Incorporation: a theory of grammatical function change*. Chicago: The University of Chicago Press.
- Baldi, P. and R. Werth., 1978. *Readings in historical phonology*. University Park, Penn.: Penn. State University Press.
- Bennett, P., 1981. The evolution of passive and disposal sentences. *Journal of Chinese Linguistics* 9.1:61-89.
- Bresnan, J. (ed.), 1982. *The mental representation of grammatical relations*. Cambridge, Mass.: MIT Press.
- Chafe, W. L., 1976. Givenness, contrastiveness, definiteness, subjects, topics, and point of view. In C. Li (ed.), 25-55.
- Chang, C., 1990. Verb copying: towards a balance between formalism and functionalism. Paper presented at the Annual Meeting of the Chinese Language Teachers Association, Nashville, Tennessee, November 17-19, 1990.
- Chang, C., 1991. Interaction between syntax and morphology: a case study of Mandarin Chinese. PhD dissertation, University of Hawaii.
- Chao, Y., 1968. *A grammar of spoken Chinese*. Berkeley and Los Angeles: University of California Press.
- Chen, M. and W. Wang, 1975. Sound change: actuation and implementation. *Language* 51:225-81.
- Chen, Q. et al, 1982. *Xiandai hanyu xuci lishi* 'Illustration of functional words in modern Mandarin'. Beijing: Shangwu.
- Cheng, R., 1983. Focus devices in Mandarin Chinese. In T. Tang, R. Cheng, and Y. Li (eds.), *Hanyu jufa yuyixue lunji* 'Studies in Chinese Syntax

- and Semantics, Universe and Scope: Presupposition and Quantification in Chinese', 50-102. Taipei: Student Book Co.
- Cheng, R., ms. Syntactic complexity and interaction of forces: the case of aspect and phrase markers in Taiwanese and Mandarin. University of Hawaii.
- Chu, C., 1979. Definiteness, presupposition, topic and focus in Chinese. Paper presented at 1979 MLA-CLTA, San Francisco.
- Ding, S. et al, 1979. *Xiandai hanyu yufa jianghua* 'Discussions of modern Mandarin grammar'. Beijing: Shangwu.
- Gai, X., 1991. The contrast of *you* and *zai*: a case study of grammatical interaction. Paper presented at NACLL 3, Cornell University, Ithaca, New York, May 3-5, 1991.
- Her, O., 1985-86. To dispense with OV word order in Mandarin Chinese. *Papers in East Asian Languages* 3:17-47.
- Her, O., 1990. Historical development of *ba* and *jiang* in the Tang Dynasty. *Language Variation and Change* 2.3:277-94.
- Her, O., 1991. *Grammatical functions and verb subcategorization in Mandarin Chinese*. (PhD dissertation, University of Hawaii, 1990). Taipei: Crane Publishing Co.
- Her, O., 1991a. Topic as a grammatical function in Chinese. *Lingua* 84.1:1-23.
- Hsieh, H., 1989. History, structure, and competition. Paper presented at the Eighth International Workshop on Chinese Linguistics, POLA, University of California, Berkeley, California, March 20-21, 1989.
- Hsieh, H., 1990. In search of a grammatical foundation for dialect subgrouping. Proceedings of the First International Symposium on Chinese Language and Linguistics, 146-67, Academia Sinica, Taipei,

Taiwan.

- Hsieh, H., 1991. Can there be a Heideggerian translation? (And what would it be?). Paper presented at the International Conference of Translation East and West: A Cross-Cultural Approach, Honolulu, Hawaii, January 7-11, 1991.
- Hsieh, H., ms. Interaction: some basic concepts. (Lecture notes, 1-23-1991). University of Hawaii.
- Hsieh, M., 1991. Analogy as a Type of Interaction: the Case of Verb Copying. Paper presented at NACLL 3, Cornell University, Ithaca, New York, May 3-5, 1991.
- Huang, C., 1989. Mandarin Chinese and the Lexical Mapping Theory. Paper presented at the XXII International Conference on Sino-Tibetan Languages and Linguistics, Honolulu, Hawaii, October 6-8, 1989.
- Huang, C., 1989a. Subcategorized topics in Mandarin Chinese. Paper presented at the 1989 CLTA Annual Meeting, November 17-19, Boston, Mass.
- Huang, C., K. Chen, W. Chen, and T. Hu, 1989. Resolution of long-distance dependencies in Mandarin Chinese with an algorithm based-on functional uncertainty. Paper presented at 1989 International Conference on Computer Processing of Chinese and Oriental Languages.
- Huang, J., 1984. Phrase structure, lexical integrity, and Chinese compounds. *Journal of Chinese Teachers Association* 14.2:53-78.
- Huang, J., 1988. Modularity and explanation: the case of Chinese A-not-A questions. In M. Chan and T. Ernst (eds.), *Proceedings of the Third Ohio State University Conference on Chinese Linguistics*, 141-69, Bloomington, Indiana University Linguistic Club Publications.

- Huang, S.-F., 1986. The history of the disposal construction revisited -- evidence from Zen dialogues in the Tang Dynasty. *Journal of Chinese Linguistics* 14.1:43-52.
- Kaplan, R. and J. Bresnan., 1982. Lexical-Functional Grammar: a formal system for grammatical representation. In J. Bresnan (ed.), 173-281. Cambridge, Mass.: MIT Press.
- Kaplan, R., 1989. The Formal architecture of Lexical-Functional Grammar. *Journal of Information Science and Engineering* 5.4:305-22.
- Kiparsky, P., 1978. Rule ordering. In P. Baldi and R. Werth (eds.), 1978, 218-235.
- Labov, W., 1978. On the use of the present to explain the past. In P. Baldi and R. Werth (eds.), 1978, 275-312.
- Langacker, R., 1977. Syntactic reanalysis. In C. Li (ed.), 57-139.
- Li, C. (ed.), 1976. *Subject and topic*. New York: Academic Press.
- Li, C. (ed.), 1977. *Mechanisms of syntactic changes*. Austin: University of Texas Press.
- Li, Y.-C., 1980. The historical development of the coverb and the coverbial phrase in Chinese. *Journal of Chinese Linguistics* 8.1:273-93.
- Li, C. and S. Thompson., 1974. An explanation of word order change. *Foundations of Language* 12:201-14.
- Li, C. and S. Thompson., 1981. *Mandarin Chinese: a functional grammar*. Berkeley: University of California Press.
- Lien, C., 1987. Coexistent tone systems in Chinese dialects. PhD dissertation, University of California at Berkeley.
- Lu, S., 1955. *Hanyu yufa lunwen ji* 'Anthology of papers on Chinese grammar'. Beijing: Science Publishing Co.
- Mei, K., 1978. 'Ba' zi ju 'Ba constructions'. *Wenshizhe Xuebao* 27:1-36.

- Mo, R., 1990. Mandarin Chinese subcategorized topics: a Lexical Functional Grammar account. M.A. thesis. Fu Jen Catholic University.
- Ogura, M., 1990. *Dynamic dialectology*. Tokyo: Kenkyusha.
- Peyraube, A., 1988. History of passive construction in Chinese until the 10th century. *Journal of Chinese Linguistics* 17.2:335-72.
- Peyraube, A., 1989. Zaoqi 'ba' zi ju de jige wenti 'Some issues of early *ba* constructions'. *Yuwen yanjiu* 1.1-9.
- Peyraube, A., to appear. Syntactic change in Chinese: On grammaticalization. *Bulletin of the Institute of History and Philology*.
- Ross, C., 1991. Coverbs and category distinctions in Mandarin Chinese. *Journal of Chinese Linguistics* 19.1:79-115.
- Sells, P., 1985. *Lectures on contemporary syntactic theories*. Stanford, CA: CSLI, Stanford University.
- Shen, Z., 1990. Lexical diffusion: a population perspective and a numerical model. *Journal of Chinese Linguistics* 18.1:159-201.
- Sun C. and T. Givon, 1985. On the so-called SOV word order in Chinese. *Language* 61:329-51.
- Wang, L., 1958. *Hanyu shi gao* 'History of the Han language'. Beijing: Science Publishing Co.
- Wang, L., 1985. *Zhongguo xiandai yufa* 'Contemporary grammar of China'. Beijing: Shangwu.
- Wang, W., 1969. Competing changes as a cause of residue. *Language* 45:9-25.
- Xie, T., 1990. Topic structures in Chinese and the Lexical Functional Grammar. Paper presented at NECCL 2, University of Pennsylvania, May 4-6, 1990.
- Zhan, X.-H., 1973. *Shishuo xinyu yufa tanjiu* 'Studies of syntax in Shishuo xinyu'. Taipei: Student Publishing Co.

One-soon Her

Zhu, M., 1991. Interaction theory and the distribution of *duoshao* and *ji*.

Paper presented at NACLL 3, Cornell University, Ithaca, New York,
May 3-5, 1991.

古漢語被動式的發展與演變機制

魏 培 泉

中央研究院，歷史語言研究所

本文主要分作兩部分，第一部分描述古漢語幾種被動式的類型和歷史，第二部分則對文獻上的主要幾種被動式的興滅機制作進一步的探討。本文的主要結論大致可以歸納如下：「見」字式的興起可能和先秦動詞形態區別的喪失有關。「V於A」「見V於A」以及其他以「於」來引介施事的句式的衰亡和兩漢整個語法結構的調整有關，概略言之，和介詞「於」的失去功能息息相關。「爲A所V」是因這種變化而成爲兩漢以至六朝被動式的主流。「見V」和「爲A所V」式在兩漢並行而進，一直到魏晉「見V」式式微才打破這個態勢。「見V」的衰微和該式又興起主動用法有關，此式因此在東晉時已爲「被V」式取代。此時「被V」式接著和「爲A所V」式攜手共進，但是到了隋唐，「被AV」式可說已取代了「爲A所V」。此時及以後被動式就以「被」字句爲主流了。「爲A所V」式的衰亡則和該結構與其時語法的發展不能調適有關。至於「爲XV」式，筆者認爲它在被動式史上只具附庸的地位，從未成爲主流。它的地位是不穩固的，所以當「爲A所V」式衰微，此式也就相隨而亡了。

0、引言

本文所要討論的漢語被動式範圍大抵不出於歷來語法學家所提出的，只是將特別著重於句型的分析及演變上的機制。漢語被動式仍有許多問題仍待解決，如定義、結構分析、歷史上及方言中的特定句型、在普遍語法中的定位等等問題，都還有待於以後的努力才能得到更好的解答。有些問題，我們將只隨文提及而不作深入的探討。

1、被動式的類型及歷史

1.1、被動式的類型

古今漢語可列爲被動式的大致可分爲以下幾種類型：

- (1)「V於A」式。
- (2)「見V」及「見V於A」式。
- (3)「爲XV」式。
- (4)「爲X所V」式。
- (5)「被」字式。
- (6)用「與」「給」「乞」「俾」「分」等表示「給與」的動詞標志被動的句式。
- (7)用「教」（「交」「叫」）「讓」等標志的句式。

在說明類型劃分的理由之前，先交代一下本文所使用的符號。以「被」字式爲例。我們將以「被AV」和「被V」分別來標示含施事及不含施事的「被」字句，並以「被XV」來涵蓋二者。從共時的語法角度而言，將「被AV」和「被V」分說似乎並無必要，因爲「被V」式仍可視爲含有一個無語音形式的施事語。但是就歷史語法而言，「被V」式的流行比「被AV」式的流行早了數百年，所以我們選擇用一個A來標志一個有音形的施事角色。至於用X來標示一個可有可無的A則是著眼於不同結構間的區辨。例如「爲」字式、「被」字式都可以在V前加入一個A，但是「見V」式原則上V前是不能插入A的。我們認爲這樣的符號在表面形式和深層結構的分析上都可以兼顧得到。

以上七種類型中，只有前五類是古漢語中最受到注意的。第六、七兩類分布在現代的多種方言中，大抵第六類屬於南方方言，第七類屬於北方方言。¹ 這七

1 橋本萬太郎(1987)即表明這個看法。他認爲第七類標志著北方漢語的阿爾泰化，第六類則是受南方非漢語的語言所影響而成。本文所舉的第六類並未舉全，大抵用來標志被動的詞隨方言動詞的詞彙而定，因爲表示「給與」的動詞並不是每個方言都是一樣的。「與」是古漢語中常見的「給與」義動詞，《戰國策》中就有例子看來像是用作被動標記的。筆者相信今日閩語的用作被動式標記的即是此詞。

類中只有後三類流行於現代的方言中，但是六、七兩類中諸式不是於文獻無考，就是只流行於近代的文獻中。在第五類中還可以增加「吃」（「喫」）、「遭」等動詞，和「被」一樣都是含有「遭受」義的動詞。²

第一類其實應包括與「V於A」相應的無施事的受事主語句。但受事主語句是否該列入被動式其實是很大的問題，這點在2.1節中再作交代。其他的類型在劃分上和定義上也有問題。首先，可用來劃分漢語被動式的標準主要有兩點：一是附加在動詞上的標記，一是引介施事的介詞。其中唯一可說有動詞標記的被動式是「見V」式，其餘的就很難說有標志被動的記號。「V於A」式可說是用介詞來引介施事，但是否由「於A」來標志被動則是一個可爭論的問題。「爲」「被」後可以加入一個施事，因此不能算是附加於動詞上的被動標記，至於是否用介詞標志被動或者是否應該稱作被動式都還是有待討論的問題。六、七兩類結構和「被」字式、「爲」字式不同，但是在分類及定義上的問題則相似。³

一個句式是否能視為被動式，就傳統的分析而言，至少有幾個特質。其一，受事作主語；其二，施事為無指的或是降級為偏格；其三，述語動詞是個表狀態的詞。⁴ 以這個標準來看，除了「見V」式外，其餘各類就很難說合乎標準了。第一，動詞缺乏標記，所以在形態上很難說它和主動式有何不同。第二，施事由

2 表示「遭受」的動詞並不僅這些，但是有哪些是在方言中作為被動的標記就不是很清楚了。「被」在語義的流變中曾含有「遭受」義是可以肯定的。「吃」以「遭受」義用作被動標記不晚於北宋，唐宋作「喫」，元明又寫作「乞」（參江藍生（1989）、張惠英（1989））。橋本萬太郎（1987:46）認為西南官話的被動標記通常是以「遭」來表示。

3 第六類源於雙賓動詞句，第七類可能也源於雙賓句。我們相當懷疑「給」「教」等動詞在現代方言中能分析作介詞，它們似乎應該和「被」一樣分析作母句中的主要動詞（參2.5節「被」的分析）。橋本萬太郎（1987:36, 48註2）把「叫（教）」「讓」類同於「請」「使」，是由使動式轉為被動式的。但是「教」「讓」原也是雙賓動詞，因此它和「給」類的被動式間是否有真正的不同實在需要提出更明確的證據才行。

4 被動式的分析當然是依不同語法理論的架構而言，如是否採用基底結構的觀念，是否視為主動式的轉換式，語法理論中是否承認移位等。因此在給被動式定義或設立衡量標準時，就得視你根據何種理論而定。筆者並不偏好哪種語法理論，所以就採取較含糊而中立的態度。本文中所提出的三項，各家的描述雖不一致，但大抵都是承認的。不過傳統的分析多與主動式相對照，所以本文的描述仍脫不了這個影子。

介詞引介也許能說是施事的降級，但是除了「於」是介詞，其餘的各類就很難證實有引介施事的介詞在。各類唯一共通的只是有個受事主語。這個問題我們在此不作討論。其實漢語所謂的被動式使用率遠不如主動式，其地位實不能和英語的被動式相提並論。儘管如此，由於在漢語中這些所謂的被動式中可以覓得句式遞嬗的一些規律，在漢語歷史語法中這些具有受事主語的句式仍可作為一個類群來研究，我們也仍不妨稱它作被動式。

1.2、各類型的簡史

第一類的歷史最早，「V於A」式及其相對應的受事主語句在西周已出現早經證實，如：

1. 麥易赤金，用乍鼎。（麥甬）
2. 侯乍册麥易金于辟侯。（麥尊）

唐鈺明·周錫馥(1985)認為甲骨文中已有「V於A」式。如：

3. 貞：王戠多屯，不左？若于下上？貞：王戠〔多〕屯，不若？左于下上？（《丙》523）

例3中「若于下上」「左于下上」即他們說的被動式。據二人言「若」「左」都是「佐佑」或「福佑」的意思。由於該文的幾個例句中事實上只有這兩個動詞，因此我們對於甲骨文中是否已有此式多少有些存疑。

受事主語句今日仍在使用，但「V於A」式則可說已消失了。在先秦，「V於A」式先則有「見V於A」取代了它部分的地位。到了秦漢以後，又逐漸讓位給「為A所V」式。我們相信，「V於A」式到了東漢已喪失創生力，當時的作品若還使用應是受古文的影響。

第二類最早應不晚於戰國時期，例如：⁵

5 西周金文有兩個例子曾被視為「見V於A」式，參管燮初(1981:160)、楊五銘(1982:315-6)、李瑾(1982)。唐鈺明·周錫馥(1985b:282)對其可靠性提出質疑，我們認為懷疑得對，因此把它排除在外。

4. 年四十而見惡焉，其終也已。（論語·陽貨）⁶

5. 盆成括見殺。（孟子·盡心下）

6. 吾長見笑於大方之家。（莊子·秋水）

「見V」式和「見V於A」式的興起大約同時，但衰亡的歷程卻不相同。「見V於A」比「V於A」晚出，但衰亡的時期卻相當，同樣都把地位拱手讓給「爲A所V」式。「見V」式興盛的時期相當長，大約到東漢末年才稍衰，進入魏晉則急遽衰微。在東晉時，「被V」式已完全將它取代。

第三類的地位及歷史都很成問題。首先，人們認爲例7是「爲AV」最早的例子：

7. 不爲酒困。（論語·子罕）

但例7中的「酒」是無生名詞，而且《經典釋文》此處「爲」讀去聲，和一般「爲XV」的「爲」讀平聲不同，所以此例暫不可論。⁷ 例8、9可算是較早的例子：⁸

8. 使身死而爲刑戮。（墨子·尚賢中）

9. 以爲天下諸侯僇。（墨子·明鬼下）

由此看來，「爲XV」的興起比「見」字式稍早。但是「爲XV」式有一個更大的問題，就是此式的V實際上使用的動詞數目是很有限的，它的創生能力因此頗令人懷疑。此外，它的結構分析也還待商量。這些問題在2.3節中再繼續討論。

「爲X所V」式文獻中可徵最早的例子約在秦漢之際。如：⁹

6 例4該視爲「見V」式還是「見V於A」式是個問題，因爲當時「焉」也相當於「於」詞組的代名詞化。我們因此很難斷定哪一式有文獻上較早的例子。

7 此點是魏伯特(1990:18-9)所指出的。

8 唐鈺明·周錫馥(1985a:285)把《左傳》《國語》擺在《論語》之前，但是《左傳》《國語》的著作年代一向是有爭議的，有人甚至不認爲是先秦作品。此外，《墨子》中有的作品的著作年代較晚，該文卻不作別擇的統計在一起。因此從該文的表看來，「爲XV」式的流行比「見」字式早，但是這實在是頗成疑問的。

9 唐鈺明·周錫馥(1985a:284)認爲「爲A所V」式萌芽於戰國末期，但是該文引的例子是有問題的。所舉四個例子中有《莊子·盜跖》一例、《戰國策》兩例、《韓非子·

10. 夫直議者不爲人所容。（韓非子·外儲說左下）

11. 不者，若屬且爲所虜。（史記·項羽本紀）

「爲A所V」式的流行期相當長而且使用也很普遍。從秦漢到六朝，它在含具施事的被動式中一直都是主力。有一段時間，其變式「爲A之所V」和「爲A所見V」等也和它一起並用。「爲所V」的使用率和「爲A所V」式比起來簡直微不足道。和「爲A所V」並用的無施事被動句，初則有「見V」式，到了魏晉，則改用「被V」式。一直到了隋代，「被AV」取代「爲A所V」才大致底定，從此「被XA」類型才真正成爲古漢語被動式的主流。

「被V」式和「被AV」式並不是平行發展的。「被V」式可據最早例子當在《韓非子》。如：

12. 今兄弟被侵，必攻者，廉也；知友被辱，隨仇者，貞也。（韓非子·五蠹）

此式在兩漢雖有一定的數量，但還不能取代「見V」式。到了東晉，「被V」式取代它則是大局已定。「被AV」式在東漢時應已萌芽，如：

13. 舜得下廩，不被火焚；穿井旁出，不觸土害。（論衡·吉驗）

但是在隋以前，這個句式並不發達。在西晉以前，例子極少。東晉到六朝末，此式雖散見於許多著作，但都是零星出現，只能算是「爲A所V」的陪襯角色。不過一進入隋唐，在某些作品中就顯出它以壓倒之勢蓋過了「爲A所V」式。

以上所述，只是前五類的一個發展概況，其中還存在著許多問題要待下面各類分述時再作處理。

第五類的「喫」在唐宋已有被動式的用例。如：

14. 少時終須喫摑。（〈鶯子賦〉，《敦煌變文集》）

在元明資料又作「吃」「乞」。¹⁰ 因此它跟第六類「乞」的歷史關係不免有些不清楚。

外儲說左下》一例。〈盜跖〉一篇爲漢人補作幾無疑問；《戰國策》爲劉向所編，不能據之無疑；《韓非子》之作可說已進入秦代了。

10 參看江藍生(1985:370)。

第七類的「教」（「交」）最早出現在唐代。如例 15、16：¹¹

15. 莫教人笑汝。（寒山詩）

16. 惆悵莫交外人聞。（〈醜女緣起〉，《敦煌變文集》）

第六類只有「給」在清朝有較多的資料，其餘的在歷史上大抵並沒留下可觀的痕跡。¹²

「喫」跟六、七兩類都是較近代的文獻中才發現的。六、七兩類中有的即使在唐宋已有，但是例子並不太多。因為目前的研究仍有限，它們跟前五類被動式是否有什麼承接替換的關係也不清楚，所以其演變機制一時也無法研究，在此文中就不作討論了。¹³

2、被動式各類型分述

2.1、「V 於 A」式及受事主語句

2.1.1、結構問題

一般被動式也都是受事主語句，但是前者有標志被動的記號。沒有這種記號的受事主語句在形式上和主動句難以分別，因此需要句意和句外的語境來辨別，現代漢語在一定的程度上受事主語（主題）和主動句主語的辨別是沒有問題的。¹⁴ 尤其當受事主語是無生的名詞組時，幾乎是不需要被動記號的。即使受事主語是有生名詞時，在一定的語境下仍不致造成誤解，如「魚吃了」這種例

11 例 15 的「交」又有他卷作「遣」（參《敦煌變文集新書》793 頁註 85）。這倒不能證明此例可疑，因為「交」當時是有和被動式相混的使動用法的。如：

交我人前滿面羞。（〈醜女緣起〉，《敦煌變文集》798 頁）

12 有些被動式是方言性的，應該是有其方言歷史的。可是由於方言資料自古即相當缺乏，所以我們對其軌跡的認識相當模糊，更不用說是探求其演變機制了。

13 橋本萬太郎(1987)認為六、七兩類是受外族語言影響而產生的，不過他也沒有特別交代這樣的影響是怎樣的過程，從什麼時候開始。

14 就現代某些語法理論而言，「主題」(topic)不能稱做主語，它在句中的語法意義及地位和主語是不同的。因此除了真正的被動式外，受事只能占據主題而不能是主語的位置。本文使用受事主語這個術語，一方面是仍有許多研究漢語語法的人在用；一方面也是方便說明，因為它在表面形式上和主動句主語畢竟難以區分。

子。¹⁵ 上古漢語也有類似的例子。如：

17. 諫行言聽。（孟子·離婁下）

18. 昔者龍逢斬，比干剖，萇弘脗，子胥靡。（莊子·胠篋）

但是這是否應該視作如同現代漢語的情況卻頗成問題。理由之一是上古漢語有生名詞作受事主語似乎更平常；¹⁶ 理由之二是後來有「見V」及其他有標志的被動式逐漸取代了它，顯然這種句式的表達力在其時是已經有所不足了。那麼在這之前那麼漫長的歷史中，語法結構是否與後來的不同，是否也有主動式和被動式的區別呢？近來在上古語法的研究發展頗使人相信上古動詞也是有形態變化的。我們覺得上古漢語歷史上原本也曾經利用動詞上的附綴來標志被動式，而這個事實在東漢時仍有人知道。如：

19. 伐人者爲客，讀伐長言之，齊人語也。見伐者爲主，讀伐短言之，齊人語也。（《公羊傳·莊公二十八年》「春秋伐者爲客」「伐者爲主」何休解詁）

無論齊人語中的長短是怎樣的語音成素，它都反映了一種古代語言的遺勢。我們可以推測在這些標志被動的語素逐漸磨失後，在必要作區別時，就有別的語法手段來替代它，如加上「見」之類。

「V於A」的問題也相似，「於」本身並不足以標志被動，還必須伴同動詞後一個缺位賓語才能辨認是否被動式。即使是這樣，有時仍需其他語法外的條件來幫忙認定。如在例2中只因為我們知道「辟侯」的職位較高，才不致於把它看作一般的雙賓句。另外一個可能是，「V於A」式原本也是靠動詞的形態變化來和主動句區分的，那麼它在形式上就頗像英語的被動句了。

15 有人認爲這和漢語是「言談中心」或「主題顯要」有關（參 Li & Thompson (1976), Tsao (1979)）。

16 這當然有可能是因爲上古的整個語法結構與現代的不同所致，例如賓語如果是定指的一般就不能刪除而得用代詞或含指示詞的詞組來補那個位置，只有泛指的可以刪除（先秦漢語中零賓語的出現規則一時也不易說清楚，這裡只是概略言之）。因此受事主語句的辨認困難可能就較小。但這個理由是否足夠說明上古較多的有生受事主語句，仍有待研究。

2.1.2、「V於A」式的衰亡原因

「V於A」式到了戰國中晚期就有「見V於A」可以用來取代它。¹⁷ 但是前者在戰國時一直很常見，西漢的例子仍然不少，不過西漢又有「爲A所V」式可以取代它。事實上「爲A所V」式不僅取代「V於A」，連「見V於A」也一併取代了。「爲A所V」式的使用在西漢時已急遽的揚升，到東漢時用「於」來引介施事的句式已不占地位，它的暫時維繫可能只是古文的影响而已。

「見V於A」式事實上只對「V於A」式做到部分的取代，它主要是亡於「爲A所V」式之手，而其原因則和古代漢語結構上的一個重要演變有關。這個演變即是動詞後的「於」失去其介詞的功能，同時一些新產生的句式取代了它。總的說來，在兩漢時新語法的結構是：動詞後的位置變成基本上只容納表示終點的名詞組，並且可以用別的介詞或動詞來取代「於」；表示起點及所在位置的詞組便移到動詞前。由於「V於A」被動式具有「於」詞組，不能避開這場演變的大勢，且施事在上古其實和起點可分析爲一類（用「於」引介即是一個證據），所以最後就被施事在動詞前的「爲A所V」取代了。¹⁸ 因此，「V於A」的滅亡實際上是語法結構整體變化中的一環，並不能僅僅以「於」語意空泛爲其衰亡的理由。因爲即使「V於A」有產生歧義的可能，也可以用「見V於A」來補其不足，可是「見V於A」流行不多久，便和「V於A」同時遭到「爲A所V」式的淘汰了。「見V於A」的遭到淘汰，其機制當和「V於A」式相同，因爲同樣具有「於」詞組。¹⁹

17 另外「爲AV」式及較少見的「爲V於A」式可能也局部的取代它，但「爲」字式的問題並不簡單，在2.3節中再來討論。

18 關於介詞「於」在兩漢的演變，可參看魏培泉(1991)。

19 「V於A」「見V於A」的衰微也許和它本身結構上的缺陷有關，這個可能性目前還不宜排除。如先秦漢語動詞後不同格的兩個名詞組不能同時都用「於」引介，因此同時要用「於」引介施事和方所便不可能，它是表現力很有限制的一個結構。但我們並不能據以指說這也是「V於A」「見V於A」這種結構衰亡的原因，因爲並無直接的證據。

2.2、「見V」及「見V於A」式

「見」作為被動記號歷來也有一些討論，這其中直接間接的都離不開一個中心問題，那就是這個被動記號究竟和「看見」的「見」有沒有關係。²⁰ 目前較可接受的是 Peyraube 的觀點(1989:341)。由於幾種羅曼語是利用和動詞「看見」同形的助動詞來標志被動式，因此他認為「見V」中的「見」也來自動詞「見」。先秦「見V」的「見」分析為助動詞應該是不會錯的，因為「見」和V之間是不能插入別的詞語的。也一直要到「見V」被動式沒落的時代，「見」和V之間能才插入施事語，而且還是模仿「為A所V」或「被AV」而來的，例子也罕見。²¹ 此外，先秦的助動詞「可」「足」等也經常造成主要動詞的賓語移到其前，這個特點也是和「見」相似的。

「見V」和「見V於A」同樣用「見」來標志被動，差別只在引介施事與否。它們興起的時間大約相當，同樣是為了補舊句式的不足。它們的發展理應是平行的，但事實上並不然。「見V於A」流行的時期並不長，到了西漢頹勢已顯，所以它真正流行的時期大約只在戰國中晚期，頂多延伸至漢初罷了。它的消亡原因和介詞「於」的演變有關，已在2.1.2節中說明過了。「見V」由於不受這種結構的限制，所以一直流行下去。一直到東漢為止，含施事的被動句主要就用「為A所V」，不含施事的主要就用「見V」，這兩種形式相當不同的被動式就這樣並行使用，維持了相當長的時間。在六朝，並用之勢不斷遞衰，但二者合用的例子仍有相當的數目。以下略舉幾個合用的例子：

20. 虞舜為父弟所害，幾死再三，…嘗見害，未有非。（論衡·禍虛）

21. 既不見輕賤，不為人所爾汝。（孟子盡心下趙岐注）

22. 唯吳郡太守張嶠，建義不捷，為賊所害，辭色不撓；及鄱陽王世子謝夫

20 關於過去「見」的一些分析及問題可參考魏培泉(1990:199-200, 211)。

21 唐鈺明(1988:461)引了兩個例子，一個見於唐代的注疏，一個是《初學記》引的華嶠《後漢書》的例子。更早是否有例則不十分清楚。鄭玄的《詩箋》有如下的例子：

涇水以有渭，故見渭濁。（《詩·谷風》「涇以渭濁」鄭箋）

這個例子看來是在「見」和動詞「濁」間插入施事「渭」。不過「見渭濁」或本又作「見謂濁」，所以此例並不可靠。

人，登屋詬怒，見射而斃。（顏氏家訓·養生）

《顏氏家訓》的例子可能是較不能代表實際語言的例子，跟顏氏為文人有關。在其前的《世說新語》中的「見V」就比「被V」少得多了。筆者以為，「見V」式實際上在東晉就已經為「被V」所取代了。例如東晉末的《出曜經》就以「被V」為主，「見V」已不占地位了。²²《十誦律》《四分律》似乎只用「被V」而不用「見V」當被動式，二書的「見V」當只是主動用法。²³

「被V」取代「見V」倒不是只用結構相同就能說明的。「見V」中的「見」是助動詞，其後的V因此是主要動詞；而「被V」中的V卻是「被」的賓語，「被」是主要動詞。二者的結構是不同的。²⁴被動「見V」式由「被V」式取代，當和主動「見V」式的興起有關。由於主、被動同形，造成混淆，所以就逐漸讓位給「被V」式。²⁵「見V」主、被動的混淆，在魏晉時就達到頂點，而「被V」的取代被動「見V」也大約是在東晉時代完成。「被V」早在先秦就已產生，到了東漢末年也還不太發達。它能夠取代「見V」實不能以詞彙替代就足以說明的，還需要別的機制來推動，我們認為這個機制實繫於「見V」式本身的變化。

22 參唐鈺明（1987:222表三）。

23 筆者所以不作斷言，是因為「見V」的用例經常無主語，因此很難斷定一定不是被動式。不過二書「見V」的例子較少，而且有主動式的用例，並沒有可以肯定是被動式的例子。更重要的是「被V」很常見，和「為A所V」等句式併用。二書初步的統計如下（少數例子因文義不很清楚不作計算）：《十誦律》：「被V」56次，「被AV」2次，「為A所V」41次，「為AV」5次（另有幾次因難以肯定是被動式而不計入），「為A所見V」1次。《四分律》：「被V」179次，「被AV」5次，「為A所V」212次，「為AV」31次。另外「為V」可能有三次。

24 Peyraube (1989:347) 以如下並行的例子來證明「見」「被」同類。

信而見疑，忠而被謗。（史記·屈原賈生列傳）

但是以古人文章的習慣來說，對偶的句子未必詞類相同，結構也不一定得相同。因此這樣的證據顯然是不足的。事實上他也是把「見」分析為助動詞而把「被V」式分析為VO結構的。

25 關於「見V」式主、被動間的演變關係可參考魏培泉(1990:189-203)。「見V」式在沒有主、賓語時，實在不容易辨清是主動句還是被動句，因此我們很難給它作一個確實的統計。我們覺得唐鈺明(1987)對被動「見V」的統計是有疑問的，因為他甚至連如何區別主、被動「見V」式的這個問題也沒作交代。

2.3、「爲XV」式

過去對「爲XV」式的分析頗爲紛紜，有把「爲」分析爲動詞的（包括繫詞、準繫詞、助動詞），也有分析作介詞的。²⁶ 這些分析到目前都還很難令人滿意，因爲怎樣分析多少都有困難。如果分析爲繫詞或準繫詞，就很難讓人信服最初何以沒有「所」字；如果分析爲助動詞，又很難解釋「爲」和V之間何以能插入施事者。如果分析爲介詞，似乎又和其後興起的「爲X所V」式連繫不起來，因爲具有關係代詞性質的「所」的產生便無法交代。現在暫時不管這些討論，筆者要另外提出一個過去爲大家忽略的一個問題。

我們檢查先秦及西漢的資料，發現「爲XV」式中的V的用詞是很有限的。最常見到的是「戮（僇）」，再其次的如「笑」「用」「擒（禽）」「役」「使」等。這幾個動詞，至少占了「見XV」式使用率的十之八九，這在「爲V」和「爲AV」中都是很一致的。有的書根本不用此外的動詞，有的此外的動詞只一二見。因此儘管「爲XV」式的出現不晚於「見V」及「見V於A」式，而且在先秦的用例看來也高於後者，²⁷ 但是實際上它在創生新句上卻遠不如「見」字式。這是讓人懷疑它是真正被動式的一點。其次，「爲XV」式中所謂的V也很有可能實際上是個名語，而「爲AV」中的A恐怕是只是它的附加語。上古漢語有些現在看作動詞的同時也用爲名詞，「爲XV」式中的V有可能就是這一類。這不僅可從這些詞在別的地方的使用上取得旁證，從如下的用法似乎也可證明過去的分析是有問題的。

23. 然後身死國亡，爲天下大僇。（荀子·非相）

24. 必爲天下大笑。（荀子·彊國）

25. 身死國亡，爲天下之大僇。（荀子·正論）

26. 員不忍稱疾辟易以見王之親爲越之擒也。（國語·吳語）

26 Peyraube (1989:341-5) 的看法比較特殊。他認爲「爲V」中的「爲」是助動詞，而「爲AV」中的「爲」是介詞。關於各家的論點，限於篇幅，不能作介紹，但可參考Peyraube此文。

27 可參看唐鈺明·周錫韞(1985a:285附表)。

27. 寡君欲以親爲戮。（國語·齊語）

28. 古者明王伐不敬，取其鯨鯢而封之以爲大戮。（左傳·宣公十二年）

例23、24的「大僇」「大笑」像是名語化的詞組，例25、26在中間還可插入名語化記號「之」。例27、28的「戮」「大戮」更是套在「以X爲Y」式中。從這些例子看來，「爲」不會是介詞，因爲介詞組和動詞間並不能插入「之」。「爲」應當視爲主要動詞，其後的詞組是它的賓語或補語。²⁸ 如果是這樣的話，也比較容易說明此式的另一個變式「爲V於A」。例如：

29. 身死爲僇於天下。（墨子·法儀）

如果「爲」是介詞，就很難說明「天下」何以不放在「爲」和「僇」中間作爲「爲」的賓語。如果「爲X V」中的X具有包孕句的主語性質，也就很難說明「天下」爲何要移後。要是我們把「爲」視如一般的動詞，「僇」只是它的賓語，不設定其前得有個施事主語的話（但是施事語仍可以以附加語的形式或身份置於作爲賓語用的V之前），那麼其後再用「於」來引介施事就不是問題了。

「爲X V」式是否曾受引介「受益者」的介詞「爲」的影響而重新分析，目前還很難說有確證。只有如下的例子「爲」較適合分析爲介詞。

30. 烈士爲天下見善矣。（莊子·至樂）

假如我們視「天下見善」爲「爲」的賓語，那麼「見」在包孕的成分中就成了主動句的記號了，而當時「見」是否已發展出主動用法仍應存疑。要是「爲」分析爲介詞，「見」就成了母句動詞「善」的表被動助動詞，便不會有問題。這個例子，仍是筆者不能解決的問題。

「爲X V」式中的V真正能表現其具動詞性的時候，似乎是在「爲X所V」式發展以後的事。「爲X V」的V在兩漢六朝時可以涵蓋較大範圍的動詞，雖然

28 筆者疑心「X爲Y」式可能本是「以X爲Y」式刪去「以」而得的，語意上也相當「視爲」「變爲」。此外，基於「與」「給」這類的雙賓動詞都有發展爲引介受益者及作爲標志被動用的事實，而「爲」不僅作爲被動用，並且所謂的介詞「爲」也是引介受益者的，所以我們懷疑這兩種用法的「爲」原本是來自同一個雙賓動詞「爲」（「爲」的另一個像雙賓動詞的地方是有「爲之NP」的句法），但由於缺乏明確的歷史証據，所以這個想法只能暫置一旁。

原有所謂的動詞仍常出現。²⁹ 我們以為「爲X V」能鬆脫原來的束縛，應該是依附「爲X所V」式而得到的。在當時，人們將「爲X V」類比爲「爲X所V」式的一個變式。在「爲X所V」在表達上有所不便時，便以「爲X V」來替換它。其使用時機通常是：施事語和動詞都只想用一個字的時候；或者是V是兩個字，「所」字造成音節安排上的不順的時候。後者的情況在六朝比其前更有所增長，因為其時雙音節的動詞已很習用。但是「爲X V」式的使用比例仍遠不如「爲X所V」式，因為它很容易產生歧義。一旦「被X V」開始流行，它就更沒有可利用的價值了，因為「被X V」不需要「所」字也不會有歧義的問題。

簡而言之，「爲X V」式在被動式史上並不占重要地位，它不應和「見V」「見V於A」相提並論。

2.4、「爲X所V」及其變式

2.4.1、「爲X所V」式的結構問題

「爲X所V」的結構也是個廣為人探討的問題。有人認為「爲」是介詞，有人認為是繫詞或準繫詞；有人認為「爲X所V」式刪「所」造成「爲X V」式，也有人認為「爲X所V」式來自「爲X V」式。筆者目前認為「爲」來自準繫詞，「爲X所V」式的由來未必和「爲X V」式有關。但筆者不想對各家的說法再一一提出來分辨，以下只敘述筆者的理由。³⁰

「爲」在先秦有準繫詞而無純粹繫詞的用法，語意相當「視爲」「作爲」「變爲」等。³¹ 「爲X所V」式句式類似分裂句，只是因為「爲」是準繫詞，

29 動詞雖有擴張之勢，但是「爲」作爲主要動詞卻仍然沒變。例如：

今爲赤帝子斬之。（史記·高祖本紀）

如果我們不把「赤帝子斬之」視爲「爲」的賓、補語，而把「爲赤帝子」視爲介詞組，以GB理論而言，代詞「之」是不能使用的，因為「之」不能複指同一句範疇中的主語。

30 要陳述各家的各種理由不是本文篇幅所容許的，因此在必要的時候才指出是誰的說法。

31 參王力(1958)。又Chu(1987:131)認為「爲X V」式中的「爲」的語意爲「變爲」，和筆者的觀點相近。

所以此式側重在狀態的描寫，而不像分裂句那樣是用「是」來強調其後的成分。我們認為「爲」是準繫詞而不是介詞的理由是：

其一，「所」在先秦是關係代詞，到了西漢仍然保持著。如果「爲」是介詞，我們無法說明「所」是如何產生的。因為「爲X所V」可以獨立爲句，如果「爲」是介詞，那麼V就是該句的主要動詞，關係代詞「所」何以能插入這個動詞前的位置便無法解釋。

其二，「爲A所V」式的A和「所」之間有時可以插入名語化記號「之」（如例31），「爲A」如果是介詞組，便不能這麼做。因為在先秦語法中，如果介詞組在V前，那麼「之」不會插在介詞組和主要動詞之間，只能放在介詞組之前。

31. 凡國有三制：有制人者，有爲人之所制者。（管子·樞言）

其三，當兩個「爲A所V」式連用時，第二個「爲」可以省除，介詞應該不能這樣省去。例如：

32. 守古循志，案禮脩義，輒爲將相所不任，文吏所毗戲。（論衡·程材）
人們之所以不相信「爲A所V」式是類分裂句，一方面是因為它在語意上是描寫句，一方面也是因為如下的例子不知如何分析。

33. 爲匈奴所閉道。（史記·大宛列傳）

34. 乃爲烏所盜肉。（漢書·王霸傳）

筆者以爲此二例仍是可以用來解釋的，我們可以把「閉」「盜」視爲雙賓動詞，其句意近於「成爲匈奴閉道的對象」「成爲烏鴉盜肉的對象」。前文已指出，「爲」的性質使得「爲X所V」式具有描寫狀態的性質，所以把「爲X所V」分析爲類分裂句問題並不大。

2.4.2、「爲A所V」式及其變式的關係

「爲所V」是「爲A所V」省去施事的對應句，但是它的用例並不多，遠不能和「見V」式相比。「爲所V」式的特點是前文都有此句隱含的施事語的先行

詞。³²

在六朝，有兩種句式較常用來替換「爲A所V」式，那就是「爲A之所V」和「爲A所見V」式。此外又有「爲A見V」式也可用來替換，但較少見。³³「爲A之所V」式出現的時期大約和「爲A所V」式相當，但是「爲A所見V」式則到東漢才有見例，它可能是受了主動「見V」的影響而產生。³⁴

「爲A之所V」和「爲A所見V」式的使用有時是憑個人習慣而選擇，有的作品偏愛用「爲A所見V」，有的作品較喜用「爲A之所V」，但也有二者都喜用的。此二式在西晉竺法護的作品中見數已不少，可見其時已相當流行。例如：

35. 爲諸天帝所禮，爲諸龍帝所敬而雨美香，爲諸神帝所見禮奉，爲諸諒帝所見宗敬，爲諸鳳凰帝神所見歸向，爲諸梵帝稽請，爲諸樂神帝所見嘆美，爲恬神帝所見讚嘆，爲諸香神帝所見追尋，爲諸人帝所見供養。

（竺法護譯《等目菩薩所問三昧經》581頁上）

36. 爲塵欲魔之所得便，亦爲罪魔之所覆蓋。（竺法護譯《度世品經》647頁下）

「爲A所見V」和「爲A之所V」中的V使用雙音節動詞的比例十分高，該式配合單音節的動詞就很少。³⁵這應該和「之所」「所見」本就是雙音節有關。「爲A所V」和「爲A見V」的V就大多數爲單音節的，可見「爲A所見V」和「爲A之所V」具有調節「爲A所V」音節的作用。

32 參唐鈺明(1987:217)。

33 另外尚有「爲A之所見V」式，但罕見，如：

不爲穢濁之所見溺。（竺法護譯《漸備一切智德經》464頁上）

34 關於「爲A所見V」較早的見例及它和主動「見V」的關係可參考魏培泉(1990:197-201)。吳金華(1981, 1983)、唐鈺明(1987)把「之所」「所見」等同於「所」，並說「之」「所」「見」是一個東西。筆者以爲這是沒有意義的一種語法觀點，我們不能因爲結構可以替代，就說其中恰好對應的東西語法性質也相同。「之」「所」在先秦兩漢一直是性質截然不同的兩個詞，而「之所」「所見」的產生各有其由來。它們只不過是在六朝時表面上可以互代罷了。

35 吳金華(1983:209)已指出「爲X所見V」有極高的比例使用雙音節動詞。

2.4.3、「爲X所V」式的歷史及衰亡原因

「爲X所V」式興於秦漢之交。其中「爲所V」式一直不很發達，因此「爲A所V」初則與「見V」式構成當時被動式的大宗，這個態勢一直要到魏晉時「見V」被「被V」取代的時候才打破。「爲A所V」和「被V」並用也延續了一段時間，最後「爲A所V」爲「被A V」式所取代，使得此後的被動式就以「被」字句爲主流（至少文獻上是這樣的），而「被A V」式大量取代「爲A所V」式文獻上可考的是在隋代。我們翻檢東漢到六朝的許多材料，「爲A所V」一直是含施事的被動句的大宗。東晉到隋，多數的材料中「被A V」式的比例都還不高。只有在隋閻那崛多的作品中才見到「被」字句的比例大爲增長。唐以後就有不少材料「被A V」在被動句中占了極高的比例。這不一定是「被A V」到了隋才開始流行，有可能是在書面上人們習慣用「爲A所V」式已成習，一直到有人大量使用「被」字句，起了示範作用，以後的作品才跟著相沿成習。³⁶ 在閻那崛多的《佛本行集經》中「被A V」及其變式「被A所V」「被A之所V」合起來有104次，而「爲A所V」「爲A之所V」及「爲A V」合起來只有91次。這兩類句式彼此的動詞也有不少重疊的，但是「被」字句動詞大抵爲具有貶意的，而「爲」字式並沒有這個限制。因此在一定的層面上，「爲」字式還不能爲「被」字取代，它仍然多少具有分裂句的性質，其後可能爲「是」分裂句所取代。

「爲A所V」式會遭到「被A V」式所取代可能跟它在當時語法中的表達力有所不足有關。此外，「被」字句的一致化對於「爲A所V」的趨消應也構成一定的影響。

「爲」在先秦的意義本就很複雜，到了東漢六朝又有新的用法。例如「爲」

36 因此雖然在隋的《佛本行集經》中「被A V」的比例很高，但是同時的《顏氏家訓》及稍前皇侃作的《論語集解義疏》比例都不高。以《論語集解義疏》爲例，「爲A V」「爲A所V」「爲A所見V」「爲A之所V」「爲A見V」合起來有62次，但「被A V」只有5次。閻那崛多尚有其他的作品，我們尚不能一一統計，姑且略示一例。在一篇較短的《四童子三昧經》中「被A V」式有4次，「爲A所V」則只有一次。

有用作純粹繫詞的，也有作為疑問記號的，有時又可和「與」互換。³⁷ 因為如此，典籍中有些「爲」的真正功能常難以辨別。「爲X所V」式事實上本就有歧義的可能，如果爲了音節安排的需要而省去「所」字，語意就更容易混淆了。這種困擾在「被」字句是沒有的。「爲」在當時既發展出純繫詞的用法，「爲NP所V」式就有可能是被動式，也有可能是分裂句了。³⁸ 當時似乎有種傾向，逐漸採用「是NP所V」來表示分裂句，而用「被XV」來表示被動句。模稜兩可的「爲X所V」就漸漸的遭到淘汰了。

另一個不利「爲X所V」維持不墜的因素是關係代詞在六朝時的逐漸失去功能。當時所有賓語代詞沒有能再放在動詞前了，循至「所」的使用也逐漸式微了。³⁹ 「爲X所V」雖是一個固定句式，但是在六朝時「爲」「所」原有的詞義及功能逐漸喪失。此時，「所」對人們而言恐怕只是一個可有可無的被動式記號。加上當時雙音節動詞盛行，「爲A所V」式的「所」往往得順應音節而改成「之所」「所見」，或者根本刪除。爲一個功能斷喪的詞常須擴增音節等於是累贅，而刪除它卻又因只依賴「爲」而容易使語意模糊。因爲「所」的刪除可能造成語意不清楚，它就不如「被AV」式那樣不需要「所」（「被」字式仍可加「所」），「被」字句在施事主語和動詞音節的伸縮上都沒有一個「所」字來橫梗，這使得它和「爲A所V」式比較起來就占了相當大的優勢。

2.5、「被XV」式

2.5.1、「被XV」式的結構問題

37 「爲」可以和「與」互通的情況是像如下的例子。

若齊晏子爲晉叔向言之。（《禮記·檀弓上》鄭注）

在六朝的佛經中「爲X說」「與X說」常可換用。「爲」這種用法和本來的介詞用法有關，但是像這類的用法要到六朝時才特別流行。

38 上古的分裂句是採用二段式的「X，X所V也」的。如：

「魚，我所欲也；熊掌，亦我所欲也。」（孟子·告子上）

到了東漢六朝，「爲NP所V」和「是NP所V」才用來替代它。

39 關於代詞在六朝的變化，可參考魏培泉（1990），「所」的變化可參考該文328-345頁。

現代的「被 A V」式的「被 A」常被分析為介詞組，而介詞「被」的賓語有時又可省，就成了「被 V」式；也有人把這個「被」分析為助動詞。這個分析並不是無可置疑的，橋本萬太郎夫婦就認為「被」是母句動詞，其後的成分是包孕的子句。⁴⁰ 筆者同意橋本的說法，因為筆者尚未見到充足的證據可以證明「被 A」是介詞組。我們回溯漢語歷史，只見到「被」是主要動詞的證據，也看不大出來有什麼證據顯示「被 A」曾被重新分析為介詞組。以下我們就從歷史的來源與其後發展時所構締的語法現象來說明「被」尚缺乏可分析作介詞或助動詞的證據。

其一，「被 V」雖起於先秦，但是在兩漢時，「被 NP」才一直是「被」字句最常用的。事實上，在《史記》《漢書》中很難找到真正的「被 V」式。有些我們看來像是動詞的，其實可能是名詞（或至少是名語化的動詞）。例如「害」「災（菑）」「創」「刑」「寇」「謗」「譏」等等可以獨自放在「被」後，看來有點像動詞，但其上又往往可加修飾語，如「水災（菑）」「水旱之害」「數十創」「五刑」「秦寇」「納讒之謗」「阿諛之譏」等。這些是比較明顯可認為是名詞組的。另外如「命」「召」「徵」「誅」之類的就比較難確定了，因為在上古漢語中這些詞本常用作動詞，但是有時也是可以分析為名詞的。無論「被」後是動詞還是名詞組，我們都應該把它分析為「被」的賓語，我們不認為當時的人會把這樣的「被」分析為功能不同的兩種詞。在先秦，如下的句子中「衆口」在語意上可視為「譖」的施事，在語法上則可分析為「譖」的附加語。

37. 處非道之位，被衆口之譖。（韓非子·姦劫弑臣）

「譖」在當時本可有名、動詞兩種用法，因此在此處可能是個名語化的動詞。這樣的句式可視為「被 A V」式的前身。在東漢六朝時，名詞和動詞彼此間逐漸可以以複合式的構詞來區別，同時先秦包孕句中主語和動詞組之間的連詞「之」不再使用，「之」成為名詞組的專用連詞。⁴¹ 因此「被」後面的施事加動詞組就分析為子句主語加動詞組，以 A 為子句主語的「被 A V」式真正的確立

40 如 Hashimoto(1969)、Hashimoto(1971)、橋本萬太郎(1987)等都持此說。

41 參王洪君(1987)、魏培泉(1990:32-56, 82-3 註 43)。

了。這樣的演變並沒有造成詞組的重構。

把「被」分析主要動詞，也可以解釋如下的例子。

38. 萬乘之國，被圍於趙。（戰國策·齊策）⁴²

如果把「被」視為主要動詞，「圍」視為其賓語，那麼施事用「於」來引介也是合乎先秦語法的。要是把「圍」視為主要動詞，把「被」視為介詞，就很難解釋「趙」為什麼不像例37那樣放在「被」「圍」之間，也不易解釋「被」和V之間有什麼障礙，能夠長期阻止「被A V」式的產生。

其二，「被」常和「蒙」連用，構成「被蒙」或「蒙被」，也常和「遭」等並用，在語法表現上也是平行的，它們的詞性本應該是相同的。例如：

39. 被蒙潤澤而茂盛。（《楚辭·七諫》王逸注）

40. 蒙被朝恩。（後漢書·公孫瓚傳）

41. 時有盛衰，衰則疾病，被災蒙禍之驗也。（論衡·命義）

42. 賢者遭病，…夫賢人有被病而早死。（論衡·治期）

43. 初時被目為迂叟，近日蒙呼作隱人。（白居易〈迂叟詩〉）

44. 時時愛被翁婆怪，往往頻遭伯叔嗔。（〈父母恩重經講經文〉（一），
《敦煌變文集新書》）

假如我們不把「遭」「蒙」這類詞視為介詞，也沒有什麼理由把「被」視為介詞。

其三，如下的例子也可證明「被」為母句動詞：⁴³

45. 其財物被淫女人悉奪取之。（西晉竺法護譯《生經》72頁上）

46. 若被諸物犯之，用便無驗。（抱朴子·金丹）

47. 則力未行而被穀驅之下去不得止。（抱朴子·仙藥）

「之」是代詞，若以GB理論而言，它的前行詞必須在該句句範疇之外。如果把「被A」分析為介詞組，「之」的前行詞就是同一句範疇的主語，便與此理論的

42 這種句式的例子並不多，我們在一些記錄六朝時期的史書中也見到一些例子。例如：
弟徽被遇於高祖。（宋書·羊欣傳）

43 《抱朴子·內篇》只有兩個「被A V」式，碰巧V後都有「之」。

語法原則相違，因此把「被」分析為母句動詞就更好。⁴⁴「遭」字也可以有同樣的句法。例如：

48. 行邁魯國之中，而魯國見其物，遭獲之也。（論衡·指瑞）

49. 蒙天佑之也。（《楚辭·天問》王逸注）

其四，「被 A V」的 V 之前可以加上如「所」「見」「相」等記號，也可用來說明其結構。如：

50. 如是前後被毒所殺七萬二千人。（鳩摩羅什譯《衆經雜撰譬喻》541 頁上）

51. 被王敬則所殺。（《南齊書·文學傳》）

52. 今被平王見討。（〈伍子胥變文〉，《敦煌變文集》）

53. 子胥被婦識認，更亦不言。丈夫未達於前，遂被婦人相識，…（同上）

「被 A 所 V」式是模仿「爲 A 所 V」式的，前文已分析「爲」包孕其後的成分，那麼「被」因其母句動詞的身分而加上「所」也是種自然的類比。

「見」在六朝時主要用爲主動記號，「相」也一樣，⁴⁵在唐代仍沿襲這種用法。要是把「被 A」分析爲介詞組，那麼在同一句範疇內主、被動這兩種相違的記號就同時並存了。如果把「被」分析爲母句動詞，施事就只是子句的主語，這就不會有問題了。

其五，如下的例子也是把「被」視爲母句動詞的好。

54. 婦人被流血而死。（《晉書·符堅傳》）

55. 後人只被爲物所役。（《河南程氏遺書》卷十九）

44 唐以後還有同樣的用法，可是我們懷疑當時的代詞「之」恐怕實際上已失去作用，所以此處不舉作證據。不過其時還可以用別的代詞。如：

(1) 被四天王驅遣我等來於此處。（闍那崛多譯《佛本行集經》861 頁上）。

(2) 盡被男女青黃山河類等礙汝光明。（《古尊宿語錄·神力禪師》）

(3) 我被那廝的陷馬捉了我到寨裏。（《水滸傳》58 回）

現代漢語仍有類似的例子，如：

(4) 這調皮鬼被我把他趕走了。（呂淑湘《現代漢語八百詞》「被」字條）

45 可參看魏培泉(1990:186-203)。

56. 盡被汝蓋覆乾坤，盡被汝自由自在，皎皎明白。（《古尊宿語錄·神力禪師》）
57. 忽被個鯢鯢之魚，拋入水池之內，渾身不淨，遍體腥膻，滿池之清水渾濁，徹底之澄泉臭穢。（〈維摩詰經講經文〉（一），《敦煌變文集新書》）
58. 源清則流清，然源清則未見得，被他流出來，已是濁了。（《朱子語類·總論爲學之方》）
59. 和尚聞語心敬，便走，被行者手中旋數下，孩子化成一枝乳棗，當時吞入口中。（《大唐三藏取經詩話》）

例 54、55 中都沒有 A，如果有的話，應和「被」前的主語同指。在這種情況下，「被」只應分析爲母句動詞或助動詞，否則同一句範疇內就會同時有兩個同指的名語。例 56 至 59，似乎找不到一個受事作主語，而且有的動詞是不及物的，本不應有受事。如果我們把「被」分析作母句動詞，那麼動詞是否及物的就不是問題了，此處的「被」只具有一種空泛的遭受的意思，並不一定得假定有個受事主語。這樣的用法即使在現代方言中也還是有的。

人們不願把「被」分析爲主要動詞恐怕和「被」的詞彙意義不明顯有關，它和原來「被」的意義已有差距。但是詞彙意義損失及意義空泛不見得就能證明該詞就不是動詞，「是」字就是一例。

2.5.2、「被 X V」式的發展

從「被 A V」式逐步奠定以後，它最爲人矚目的發展是 V 的附加語的擴張，這包括各種狀語及補語。但總的來說：「被」字句附加語的擴張，是配合各不同時期的語法發展的。例如，「被 A V」中的 V 是子句動詞，其後原可添附和母句主語不同指的賓、補語，所以在此式初發展時，和母句主語有領屬關係的賓語，以及保留賓語、介詞組補語也都可以出現在 V 後（如例 60、61、62、63）；六朝時具有「動一結」關係的複合使成式已逐漸在成長了，所以其時「被」後也有這種動詞結構（如例 64、65、66、67）；唐宋助詞逐漸發達，所以此式 V

後也可以跟助詞（如例 68、69）；唐宋之交「得」補語開始發展，「被」也可以搭配「得」使用了（如例 70、71）。至於狀語的繁化隨時增長，在「被」字句上也有所反映。⁴⁶

60. 時焉被天火燒城。（《三國志·劉二牧傳》）
61. 爾時有比丘被賊截其男根并卵。（姚秦佛陀耶舍共竺佛念譯《四分律》813 頁中）
62. 嘗被賜園地。（《周書·王思政傳》）
63. 言已被放在此山中深險之地。（《楚辭·九歎》王逸注）
64. 身被漂殺。（西晉法炬共法立譯《法句譬喻經》509 頁下）⁴⁷
65. 兩腳頭脅皆被拔出（鳩摩羅什譯《衆經雜撰譬喻》532 頁下）
66. 被定州官軍打敗。（《周書·晉蕩公護傳》，又《北史·周宗室傳》）
67. 次復夢見淨飯大王宮內有一微妙之樹被風吹倒。（闍那崛多譯《佛本行集經》727 頁下）
68. 有什麼光前絕後，大小仰山被他將兩杓惡水驀頭澆了也。（《袁州仰山慧寂禪師語錄》586 頁上）
69. 恁麼總被和尚占卻也。（《筠州洞山悟本禪師語錄》517 頁下）
70. 被他數量概括得定。（《祖堂集·落蒲和尚》）
71. 我鼻孔被大師擱得痛不徹。（《古尊宿語錄·大鑒下二世》）

「被 X V」式的另一個發展是在語意方面。由於「被」本有的詞彙意義，所以「被 X V」總含有一種無法抗拒、不由自主的味道。⁴⁸ 最初，V 既有表不幸的，但也有表示好的，而且通常是受到皇帝恩賜賞接的。後來，表示幸運愉快的就比較少用了。我們在《佛本行集經》中已見到「被 X V」是表示不幸的爲多，

46 此處所說可比較唐鈺明(1988)、袁賓(1987)。

47 我們在六朝的文獻中找到幾個「被 V 死」的例子。如：

龍被射死。（吳康僧會《生經》27 頁上）

但當時可能仍然只有「射殺 O」而沒有「射死 O」的用法，所以「死」有可能是和「被射」並列的動詞，「死」並不直接和「射」構成一個動詞單位。

48 王力(1957, 1989)說此式基本上是表示不幸或不愉快的。

但是在其時或以後的材料中，仍有用於表幸運的。至於較中性的用法則是近代的事了。

3、結 論

本文特別描述了古漢語幾種被動式的歷史，特別著墨於其興滅機制的探討。現在再略作回顧。「見」字式的興起可能和先秦動詞形態區別的喪失有關。「V於A」「見V於A」以及其他以「於」來引介施事的句式的衰亡和兩漢整個語法結構的調整有關，概略言之，和介詞「於」的失去功能息息相關。「爲A所V」是因這種變化而成爲兩漢以至六朝被動式的主流。「見V」和「爲A所V」式在兩漢並行而進，一直到魏晉「見V」式式微才打破這個態勢。「見V」的衰微和該式又興起主動用法有關，此式因此在東晉時已爲「被V」式取代。此時「被V」式接著和「爲A所V」式攜手共進，但是到了隋唐，「被AV」式可說已取代了「爲A所V」。此時及以後被動式就以「被」字句爲主流了。「爲A所V」式的衰亡則和該結構與其時語法的發展不能調適有關。至於「爲XV」式，筆者認爲它在被動式史上只具附庸的地位，從未成爲主流。它的地位是不穩固的，所以當「爲A所V」式衰微，此式也就相隨而亡了。

（本文於民國八十一年十一月十九日通過刊登）

引用書目

- 王 力 1957 《漢語史稿》，科學出版社。
- 1958 〈中國文法中的繫詞〉，《漢語語法論文集》212-289，北京科學出版社。
- 1975 〈漢語被動式的發展〉，《語言學論叢》1:435-446。
- 1989 《漢語語法史》，商務印書館。
- 王洪君 1987 〈漢語表自指的名詞化標記「之」的消失〉，《語言學論叢》14:158-196。
- 江藍生 1989 〈被動關係詞「吃」的來源初探〉，《中國語文》1989.5:370-7。
- 李 瑾 1982 〈漢語殷周語法問題探討〉，《語言文字研究專輯》上，上海古籍出版社。
- 吳金華 1981 〈所見=所〉，《中國語文》1981.5:391, 396。
- 1983 〈試論「R爲A所見V」式〉，《中國語文》1983.3:207-210。
- 1988 〈「R爲A見V」式述例〉，《南京師大學報（社科版）》1988.4:31-7。
- 呂淑湘 1980 《現代漢語八百詞》，商務印書館。
- 1984 〈被字句、把字句動詞帶賓語〉，《漢語語法論文集》200-8，原載《中國語文》1965.4。
- 周法高 1975 〈古代漢語被動式句法之研究〉，《中國語言學論文集》。
- 袁 賓 1987 〈近代漢語特殊被字句探索〉，《華東師範大學學報（哲社版）》1987.6:87-91。
- 唐鈺明・周錫馥 1985a 〈論先秦漢語被動式的發展〉，《中國語文》1985.4:281-5。

- 1985b 〈論上古漢語被動式的起源〉，《學術研究》1985.5:98-100。
- 唐鈺明 1987 〈漢魏六朝被動式略論〉，《中國語文》1987.3:216-223。
- 1988a 〈唐至清的「被」字句〉，《中國語文》1988.6:456-468。
- 1988b 〈古漢語被動式變換舉例〉，《古漢語研究》1988.1:66-69, 44。
- 張惠英 1989 〈說「給」和「乞」〉，《中國語文》1989.5:378-382，封3。
- 馮春田 1988 〈魏晉南北朝時期某些語法問題探究〉，《魏晉南北朝漢語研究》179-239，程湘清編，山東教育出版社。
- 楊五銘 1982 〈西周金文被動句式簡論〉，《古文字研究》.7:309-316。
- 橋本萬太郎 1987 〈漢語被動式的歷史・區域發展〉，《中國語文》1987.1:36-49。
- 魏伯特 1990 《鄭玄、趙歧、何休箋注的一些語法特色》，國立臺灣大學碩士論文。
- 魏培泉 1990 《漢魏六朝稱代詞研究》，國立臺灣大學博士論文。
- 1991 〈古漢語介詞「於」的演變略史〉，《歷史語言研究所集刊》62.4:717-786。
- Chu, Chauncey C. 1987. *Historical Syntax-Theory and Application to Chinese*. The Crane Publishing Co., Ltd.
- Hashimoto, Anne Yu. 1971a. Descriptive adverbials and the passive construction. *Unicorn* 7:84-93.
- , 1971b. Mandarin syntactic structures. *Unicorn* 8.
- Hashimoto, Mantaro. 1969. Observation on the passive construction. *Unicorn* 5:59-71.
- Li, Charles N. and Sandra A. Thompson. 1976. Subject and topic: A new typology of language. In *Subject and Topic*, Charles N. Li. (ed).

Academic Press.

Peyraube, Alain. 1989. History of the passive constructions in Chinese until the 10th century. *JCL* 17.2:335-371.

Tsao, Feng-Fu. 1979. *A Functional Study of Topic in Chinese: The First Step Towards Discourse Analysis*. Taipei: Student Book Co., Ltd.

The Grammaticalization of 'Bei' in Chinese

Hongming Zhang
National University of Singapore

This paper is concerned with how 'bei', a content word in Old Chinese, changed first from an agentive physical verb meaning 'cover' to a non-agentive physical verb, then to a mental verb meaning 'suffer', and finally to a passive marker.

The proposed analysis of the grammaticalization of 'bei' bears on various issues of general theoretical interest. Although the widely accepted hypothesis that metaphor holds the key to understanding grammaticalization sheds light on certain semantic changes, it fails to explain the grammaticalization of 'bei', at least in its important developing stages. I suggest instead a discourse explanation, according to which the semantic development of 'bei' reflects shifts in the empathy focus of the speaker.

1. Introduction

This paper is concerned with how *bei*, a content word in Old Chinese, changed first from an agentive physical verb meaning 'cover' to a non-agentive physical verb, then to a mental verb meaning 'suffer', and finally to a passive marker.¹

1 As a matter of fact, so far nobody has ever offered a convincing explanation as to the nature of the so-called passive marker *bei* in contemporary Chinese. In other words, it still remains unsolved whether this *bei* should be regarded as a

The proposed analysis of the grammaticalization of *bei* bears on various issues of general theoretical interest. Although the widely accepted hypothesis that metaphor holds the key to understanding grammaticalization sheds light on certain semantic changes, it fails to explain the grammaticalization of *bei*, at least in its important developing stages. I suggest instead a discourse explanation, according to which the semantic development of *bei* reflects shifts in the empathy focus of the speaker.

The organization of this paper is as follows. Section 1 briefly introduces the concept of grammaticalization and discusses some current views concerning how it should be characterized. Section 2 presents the main data to be considered and summarizes the development of *bei*. Section 3, the core of the paper, discusses in detail each of the stages in the grammaticalization of *bei*, focusing on the semantic aspects of the changes, and elaborates the proposed discourse explanation. Section 4 fleshes out certain of the theoretical implications of the analysis. Section 5 summarizes the conclusions reached in the paper.

preposition, an adverb, an auxiliary verb, or a passive verb. For convenience's sake, I adopt the term *passive marker* in this paper which discusses only the cause and process of the grammaticalization of *bei*. No matter whether *bei* is taken as a preposition, a passive verb, or an auxiliary word, it will be doubtlessly considered a certain kind of grammaticalization if it is changed either from a content word into a functional word or from a physical verb into a mental verb. As for the case in which *bei* is changed from a mental verb into another category word, the change is definitely regarded as a kind of grammaticalization, regardless what this category is named. Therefore, whether or not the nature of *bei* in contemporary Chinese is clear enough is not much related to this paper, since the focus of this paper is on the grammaticalization of *bei*, not on the nature of *bei* in the passive structure in contemporary Chinese. As to the definition of the term *grammaticalization*, please see the discussion in this paper and also Kemmer (1988).

Generally speaking, in contemporary Chinese, the active structure is seen as (1.1a) and the passive structure is seen as (1.1b) respectively:²

(1.1) a. Active structure:

NP1 + V + NP2

b. Passive structure:

NP2 + bei + (NP1) + V

The aim of this paper is to show how *bei*, a transitive verb meaning 'cover' in Old Chinese, became grammaticalized as a passive marker in Modern Chinese. To the best of my knowledge, the first mention of grammaticalization is in Meillet (1912), where the term is defined as follows:

The development of grammatical forms by progressive deterioration of previously autonomous words is made possible by ... a weakening of the pronunciation, of the concrete sense of the words, and of the expressive value of words and groupings of words. The ancillary word can end up as an element lacking independent meaning as such, linked to a principal word to mark its grammatical role.

From this point of view, grammaticalization is a sort of semantic impoverishment --- a process whereby signs lose their integrity (Lehmann 1985). Other researchers endorsing Meillet's view frequently use such terms as 'desemanticization', 'bleaching', 'semantic weakening', 'attrition', and 'degradation' in describing the phenomenon in question.

Recent work on grammaticalization and the semantics of grammatical terms (Traugott 1982, and elsewhere; Bybee & Pagliuca 1985; Heine & Hunnemeyer 1988; Sweetser 1988) is characterized by a movement away from

2 The parentheses in (1.1b) indicate that the agent may be omitted. Some Chinese linguists maintain that there are two types of passive structure in Chinese. One is with agent and its *bei* is a preposition. And the other has no agent and its *bei* can be treated as a passive marker or called passive verb.

the earlier position that the process involves substantial loss of semantic content (Heine & Reh 1985; Givon 1979). Many linguists argue for the inherent meaningfulness of grammatical words, rejecting the view of grammaticalization as bleaching or loss of semantic content. New approaches to semantics and pragmatics, highlighting the systematicity of grammaticalization, have shown that it exploits devices common to other kinds of linguistic change. In addition to describing the nature of the change, linguists have tried to describe HOW and WHY grammaticalization occurs. Some hold that metaphor is the key to understanding the phenomenon (Heine & Hunnemeyer 1988; Sweetser 1984, 1988). Others maintain that the process of change is a strengthening of pragmatic inferences to relevance, rather than metaphor or bleaching (Traugott 1989).

My goals in this paper are: a) to explicitly characterize the semantic steps involved in the grammaticalization of *bei*; and b) to evaluate how well various theories account for the change from one step to the other.

2. The Data Concerning the Semantic Change of ‘Bei’

In its original use, *bei* was a noun meaning ‘covering’, as indicated in *Shuo-Wen-Jie-Zi*, the earliest Chinese etymological dictionary:

(2.1) 《說文解字·衣部》：“被，寢衣，長一身有半，從衣皮聲。”

bei, qin yi, chang yi shen you ban, cong yi pi sheng.

‘*Bei* is a covering used when sleeping, it is about one and a half man’s length, and *Yi* is its radical while *Pi* is its phonetic part.’

(*Shuo-Wen-Jie-Zi*. Yi-Bu)

Bei is still used as a noun today. However, because of the fact that the covering here is something which covers us during sleep, *bei* came to be

used as a verb meaning 'cover' (Wang 1980 (1958): 430).³ It first appeared with this meaning before 770 B.C.,⁴ as seen in the following examples:⁵

- (2.2) a. 天被爾祿 (《詩經·大雅·既醉》, 約公元前 770 年之前)

tian bei er lu.

God cover you luck

'God covers you with blessing.'

(Shi-Jing.Da-Ya.Ji-Zui, before 770 B.C.)

- b. 夫子被之矣 (《國語·周語下》, 約公元前 560 — 前 490 年)

Fu-zi bei zhi yi.

teacher cover him particle

'The teacher covered him (with the clothes).'

(Guo-Yu.Zhou-Yu-Xia, about 560 - 490 B.C.)

3 Many Chinese historical linguists have noticed that one of the early uses of *bei* is 'cover', but none of them have ever provided any examples earlier than the one I give in (2.2a). Karlgren (1957) has mentioned that *bei* used as a verb meaning 'cover' in *Shi-Jing*, but he didn't provide us with any such examples.

4 Although *Shi-Jing* is several hundred years older than *Shuo-Wen-Jie-Zi*, it is a common knowledge that the definitions of the characters carried in *Shuo-Wen-Jie-Zi* are the original meanings of these characters when they were first created. So, it will not change the fact that *bei* is first used as a noun although it is used as a verb in *Shi-Jing*, *Chu-Ci*, and other classical documents which were published earlier than *Shuo-Wen-Jie-Zi*. If the primary meaning of a character given by *Shuo-Wen-Jie-Zi* is doubtful, it might be corrected by the inscriptions on bones or tortoise shells of Shang Dynasty (c. 16th-11th B.C.). And moreover, it should be noted that this paper is not about the change of *bei* from a noun into a verb, but about the change of *bei* from a physical verb first into a mental verb, and finally into a passive marker.

5 《詩經·大雅·既醉》(eg. (2.2a)): "天被爾祿", 漢鄭玄箋: "天覆被女以祿位使祿, 臨天下"; 唐孔穎達疏: "天覆被汝以福祿使之"。

- c. 皋蘭被徑兮 (《楚辭·宋玉·招魂》, 約公元前 280—前 260 年)

gao-lan bei jing xi.

flower name cover path particle

'The gao-lan flowers covered the path.'

(Chu-Ci.Song-Yu.Zhao-Hun, about 280 - 260 B.C.)

- d. 澤被生民 (《荀子·臣道》, 約公元前 280—前 250 年)

ze bei sheng-min.

bounty cover common people

'Bounties covered the common people.'

(Xun-Zi.Chen-Dao, about 280 - 250 B.C.)

It was in the time of about 250 B.C. that *bei* underwent a semantic change from a physical verb meaning 'cover' to a mental verb meaning 'suffer',⁶ as seen in the following examples:

- (2.3) a. 嘗被君之渥洽 (《楚辭·宋玉·九辯》, 約公元前 280—前 260 年)

chang bei jun zhi wo-qia.

often undergo emperor of bounty

'(I) often underwent the Emperor's bounties.'

(Chu-Ci.Song-Yu.Jiu-Bian, about 280 - 260 B.C.)

- b. 處非道之位, 被衆口之譖 (《韓非子·奸劫弑臣》, 約公元前 250—前 235 年)

chu fei-dao zhi wei, bei zhong-kou zhi zen.

place wrong way of position suffer many mouth of slander

'(If you are) in a wrong position, (you will) suffer the slander

6 Wang (1980: 430) has pointed out that *bei* derived its meaning 'suffer' from its meaning 'cover', but Wang did not provide us with any proper examples concerning this meaning change. By the way, syntactically speaking, 'suffer' in Chinese, unlike in English, is a transitive verb.

of everyone.'

(Han-Fei-Zi.Jian-Jie-Shi-Chen, about 250 - 235 B.C.)

- c. 秦王復擊軻，被八創（《戰國策·燕策》，約公元前240?—前210年?）

qin wang fu ji ke, bei ba chuang.

Qin King again attack Ke suffer eight wound

'King Qin attacked Ke again, and (Ke) suffered eight wounds

(as a result).'

(Zhan-Guo-Ce.Yan-Ce, about 240? - 210? B.C.)

- d. 申生孝而被殃（《楚辭·東方朔·七諫》，約公元前120—前100年）

Shen-sheng xiao er bei yang.

Shen-sheng dutiful but suffer disaster

'Although Shen-sheng was dutiful, (he) suffered disaster.'

(Chu-Ci.Dong-Fang-Shuo.Qi-Jian, about 120 - 100 B.C.)

- e. 地小人衆，被水旱之害（《史記·貨殖列傳》，約公元前104—前91年）

di xiao ren zhong, bei shui han zhi hai.

land little man many suffer water drought of harm

'With little land but a large population (you used to) suffer damage of flood and drought.'

(Shi-Ji.Huo-Zhi-Lie-Zhuan, about 104 - 91 B.C.)

- f. 湯爲天子大臣，被惡言而死（《漢書·張湯傳》，約公元後70—後90年）

Tang wei tian-zi da-chen, bei e-yan er si.

Tang be king minister suffer slander then die

'(Although) Tang was a minister of the King, (he) suffered slander to such an extent that (he) died.'

(Han-Shu.Zhang-Tang-Zhuan, about 70 - 90 A.D.)

It was in about 100 B.C. that *bei* finished its gradual change into a

grammatical word functioning as a passive marker (Wang 1980; Tang 1987).⁷ But, throughout this period of development, it was used both as a verb meaning 'suffer' and as a passive marker. It was only after the Eastern Han Dynasty (100 A.D.) that the verb *bei* gradually fell into disuse. But *bei* has continued to be used as a passive marker, as seen in the following examples, discussed by many Chinese historical linguists (Wang 1980; Tang 1987; Peyraube 1989):⁸

- (2.4) a. 國一日被攻，..... (《戰國策·齊策》，約公元前240?—前210年?)

guo yi ri bei gong,...

country one day PASS? attack

'If the country is attacked some day,...'

(Zhan-Guo-Ce.Qi-Ce, about 240? - 210? B.C.)

- b. 萬乘之國被圍於趙 (《戰國策·齊策》，約公元前240?—前210年?)

wan sheng zhi guo bei wei yu Zhao.

ten-thousand chariot NOM state PASS? surround LOC Zhao

'A state of ten thousand chariots has been surrounded in Zhao.'

(Zhan-Guo-Ce.Qi-Ce, about 240? - 210? B.C.)

- c. 信而見疑，忠而被謗 (《史記·屈原賈生列傳》，約公元前104—前91年)

xin er jian yi, zhong er bei bang.

honest but PASS suspect loyal but PASS slander

'The honest are suspected and the loyal are slandered.'

(Shi-Ji.Qu-Yuan-Jia-Sheng-Lie-Zhuan, about 104 - 91 B.C.)

7 *Bei* in (2.4a & b) is contentious as a passive marker among Chinese linguists. But in (2.4c), it is definitely a passive marker.

8 PASS = passive marker; NOM = nominalized marker; LOC = locative marker.

- d. 九壤被震 (《三國志·魏志·文帝丕傳》，約公元後 260—前 290 年)

jiu-rang bei zhen.

earth PASS shake

'The earth was shaken.'

(San-Guo-Zhi.Wei-Zhi.Wen-Di-Pi-Zhuan, about 260 - 290A.D.)

- e. 王武子被責 (《世說新語·汰移》，約公元後 430—440 年)

wang-wu-zi bei ze.

Wang-Wuzi PASS blame

'Wang-Wuzi was blamed.'

(Shi-Shuo-Xin-Yu.Tai-Yi, about 430 - 440 A.D.)

- f. 藩艦被燒 (《南史·胡藩傳》，約公元後 635—645 年)

fan jian bei shao.

vassal warship PASS burn

'The vassal's warship were burnt.'

(Nan-Shi.Hu-Fan-Zhuan, about 635 - 645 A.D.)

- g. 亮子被蘇峻害 (《世說新語·方正》，約公元後 430—440 年)

liang-zi bei su-jun hai.

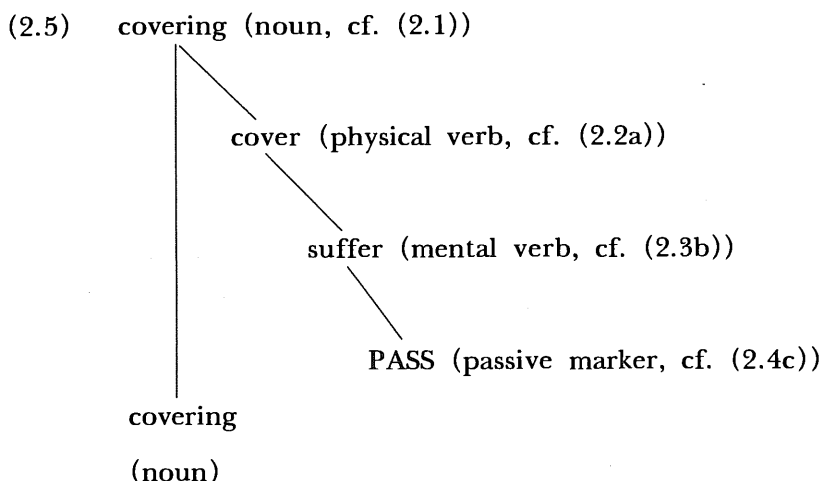
Liang-zi PASS Su-Jun kill

'Liang-zi was killed by Su-Jun.'

(Shi-Shuo-Xin-Yu.Fang-Zheng, about 430 - 440 A.D.)

Schematically, the development of *bei* from a noun into a passive marker was as follows:⁹

9 As known to all, an overlapping period exists between the successive stages in the historical development of languages.



It should be noted that passive sentences, in general, are not so neutral in Modern Chinese as they are in English. Rather, they carry an implication of disadvantage for the subject, as shown by the following examples:¹⁰

- (2.6) a. 他被撤職了。 b. 我們被張三欺負了。
- ta bei che-zhi le. wo-men bei Zhangsan qi-fu le.
- he PASS fire ASP we PASS Zhangsan bully ASP
- ‘He was fired.’ ‘we are bullied by Zhangsan.’

In Chinese, generally speaking, active sentences instead of passive sentences are employed to express fortunate or happy senses so far as the subject is concerned, as seen in (2.7) and (2.8) respectively (Wang 1985 (1943): 135, 1984 (1944): 128):¹¹

10 Lots of Chinese linguists have mentioned this phenomenon in literature. The examples and discussion from (2.6) to (2.8) follow Ly (1942), Wang (1980), and Li (1980).

11 Although in contemporary Chinese, the passive structure with *bei* in some cases may not necessarily carry pejorative meaning, nobody will thus argue for the claim that this structure does not carry such meaning simply because it has obtained its positive meaning as a result of Europeanization in Modern time (Wang 1984, 1985).

(2.7) a. *他被你愛。

*ta bei ni ai.

he PASS you love

'He is loved by you.'

b. 你愛他。

ni ai ta.

you love him

'You love him.'

(2.8) a. *你被我恭賀。

*ni bei wo gong-he

you PASS I congratulate

'You are congratulated by me.'

b. 我恭賀你。

wo gong-he ni.

I congratulate you

'I congratulate you.'

Further solid supporting evidence for the claim that Chinese passive sentences are associated with an adversitive meaning comes from comparing the original Mongolian version of *Meng-Gu-Mi-Shi* (The History of Mongolia), the first book on the history of Mongolia, with its Chinese version which was published in the Yuan Dynasty (1271-1368 A.D.) when China was in the hands of the Mongolians. Significantly, not all the passive sentences in the Mongolian version were rendered as the corresponding Chinese passive sentences. The Chinese passive structure was used only for those sentences expressing adversity. The remaining passive sentences in the original version were replaced by active sentences (Haenisch 1933).

It should also be noted that before *bei* was adopted as a passive marker, other Chinese passive structures were semantically neutral. That is to say, they were not always employed to express adversity, as can be seen from the following example:

(2.9) 愛人者必見愛 (《墨子·兼愛下》, 約公元前 400—前 370 年)

ai ren zhe bi jian ai.

love man -er must PASS love

'The one caring about the others will surely be loved by the others.'

(Mo-Zi.Jian-Ai-Xia, about 400 - 370 B.C.)

It was only after *bei* became a passive marker that the passive structure in Chinese came to be used exclusively to express adversity.

The historical process illustrated by the grammaticalization of *bei* in Chinese raises various general questions: What connects one meaning with another, and how does semantic change occur? Even given a concrete-to-abstract direction, how does one element in the concrete domain become associated with a specific abstract meaning, rather than with some other meaning? How do meanings shift within a domain? The following sections address such questions, seeking to improve our understanding of both semantic relatedness and semantic change, based on an in-depth analysis of the development of the passive structure in Chinese.

3. The Development of ‘Bei’ from an Action Verb into a Passive Marker

As shown in section 2, in the process of developing from an action verb into a passive marker, *bei* underwent two major changes: a) it changed from a physical verb ‘cover’ (cf. the examples in (2.2)) to a mental verb ‘suffer’ (cf. the examples in (2.3)); and b) it changed from a mental verb ‘suffer’ to a passive marker (cf. the examples in (2.4)). In this section, I examine each of these changes more closely, beginning with the first.

3.1 On Semantic Properties of Physical and Mental Verbs

The sentences in (2.2) and (2.3) belong to two completely different domains. The former express an action in the physical domain with a physical verb while the latter express a state in the mental domain with a mental verb. Before we can explain how ‘cover’ changed into ‘suffer’, we need to have a clear understanding of the semantic difference between

physical and mental verbs.

(2.2a) is the earliest example I have found of *bei* being used as an action verb:

(3.1) 天被爾祿

tian bei er lu (=2.2a)

God cover you luck

'God covers you with blessing.'

(Shi-Jing, about 770 B.C.)

The subject *tian* 'God' is an agent, i.e. an animate entity engaged in an activity. The object *er* 'you' is a locative, i.e. the entity affected by the action of the verb. As for *lu* 'luck', its semantic role is less obvious. According to Fillmore's (1968) criteria, this nominal would be classified as an instrument. However, Fillmore's position has been rejected by many linguists. In the framework outlined in Foley & Van Valin (1984), which draws on the work of Jackendoff (1976), Dowty (1979) and others, *lu* would be considered an 'effector-theme', which by their definition is essentially the located entity or the entity that undergoes a change of location. And the logical structure of (2.2a) might be something like: God does something which causes luck to cause it to become over you.

Basically identical to (2.2a), the subject of (2.2b) *fu-zi* 'teacher' is an agent and its object *zhi* 'him' is a locative:

(3.2) 夫子被之矣

Fu-zi bei zhi yi. (=2.2b)

teacher cover him particle

'The teacher covered him (with the clothes).'

What this sentence shows is that the effector-theme can be omitted, thus the logical structure of (2.2b) is: the teacher does something (which causes the

clothes to cause it) to become over him.

(2.2c) and (2.2d), repeated below, differ from (2.2a) and (2.2b) in the fact that the latter are agentive with their subject as the actor of an event whereas (2.2c) and (2.2d) are not.

(3.3) a. 皋蘭被徑兮

gao-lan *bei* *jing* *xi*. (=2.2c)

flower name cover path particle

'The Gao-lan flowers covered the path.'

b. 澤被生民

ze *bei* *sheng-min*. (=2.2d)

bounty cover common people

'Bounties covered the common people.'

The subjects of (2.2c) and (2.2d), *gao-lan* 'flower' and *ze* 'bounty', are themes. The objects, *jing* 'path' in (2.2c) and *sheng-min* 'common people' in (2.2d), are both locatives. If the subject is an agent and the object is a locative, the predicate verb will be an agentive physical verb. On the other hand, if the subject is a theme and the object is a locative, the predicate verb will be a non-agentive physical verb. Thus, in (2.2a & b) *bei* is an agentive physical verb (hereafter 'cover1'), but in (2.2c & d), it is a non-agentive physical verb (hereafter 'cover2').

The sentences in (2.2) exemplify two different predicate-argument structures: a) an agentive physical one in which the subject has the semantic features such as volitional, controlling, etc. (cf. (2.2a) and (2.2b)); and b) a non-agentive physical one in which the subject (a theme) has the semantic features like non-volitional, non-controlling, etc. (cf. (2.2c) and (2.2d)). The only semantic feature that the subjects have in common is non-affectedness. As for the objects in (2.2), they realize the same semantic roles, i.e.,

locative, and they are semantically alike in being affected and concrete.

In sum, the semantic roles associated with the nominals in the examples in (2.2) are as follows:¹²

(3.4) a. 天被爾祿

tian bei er lu. (=2.2a)

AG LOC E-T

God cover1 you luck

'God covers you with blessings.'

b. 夫子被之矣

Fu-zi bei zhi yi. (=2.2b)

AG LOC

teacher cover1 him particle

'The teacher covered him (with the clothes).'

c. 皋蘭被徑兮

Gao-lan bei jing xi. (=2.2c)

TH LOC

flower name cover2 path particle

'The Gao-lan flowers covered the path.'

d. 澤被申生

ze bei sheng-min. (=2.2d)

TH LOC

bounty cover2 common people

'Bounties covered the common people.'

The functions and features of these semantic categories are given in (3.5):

12 AG = agent; E-T = effector-theme; TH = theme; LOC = locative; PA = patient.

(3.5) a. Agentive physical event (for (2.2a-b)):

| Subject | + | Verb | + | Object |
|--------------|---|-----------|---|-----------|
| AG | | +agentive | | LOC |
| +volitional | | +action | | +affected |
| -affected | | | | +concrete |
| +controlling | | | | |

b. Non-agentive physical event (for (2.2c-d)):

| Subject | + | Verb | + | Object |
|--------------|---|-----------|---|-----------|
| TH | | -agentive | | LOC |
| -volitional | | +action | | +affected |
| -affected | | | | +concrete |
| -controlling | | | | |

Being entirely different from (2.2), the sentences in (2.3) express an event in the mental domain with a mental verb (suffer). In (2.3), the subjects are all experiencers and the objects are all stimuli. Generally speaking, a stimulus comes into mental contact with a mind of the experiencer, and this sets off a complex chain of events in the mental system of the experiencer. Since the crucial feature of this process is the contact between the stimulus and the experiencer, mental activity may be viewed as having an experiencer as an essential facet. Accordingly, we will analyze mental verbs as having an experiencer as a key component of their meaning. The semantic relations inherent in this mental domain are theme and locative. As the stimulus is in contact with the locative, the stimulus is a theme. The semantic roles of (2.3d) are then as follows:

(3.6) 申孝而被殃

shen-sheng xiao er bei yang. (=2.3d)

LOC TH

Shen-sheng dutiful but suffer disaster

'Although Shen-sheng was dutiful, (he) suffered disaster.'

It should be noted that although the arguments in (3.6) are theme and locative, the relation involved is one in which the locative 'Shen-sheng' is a sentient entity in whose mind the mental event occurs and the theme 'disaster' functions as a stimulus for the mental event. The two arguments in (3.6) are connected by two relations: 'Shen-sheng'(LOC) directs his attention to 'disaster'(TH) and 'disaster' causes a mental event in the mind of 'Shen-sheng'.

Summarizing to this point, the semantic differences between the physical domain and the mental domain are as shown in (3.7):

(3.7) a. Physical domain:

| | | | | |
|-----------|---|---------|---|-----------|
| Subject | + | Verb | + | Object |
| AG/TH | | +action | | LOC |
| -affected | | | | +affected |
| | | | | +concrete |

b. Mental domain:

| | | | | |
|-----------|---|---------|---|-----------|
| Subject | + | Verb | + | Object |
| LOC | | -action | | TH |
| +affected | | | | -affected |

3.2 The Shift from a Physical Verb to a Mental Verb

Having now a clear idea of the semantic properties of the physical and mental domains, we can consider the question of what connects the meaning

of a physical verb with that of a mental verb, and how semantic change occurs.

First let us see how the concept of metaphor fails in accounting for the change of *bei* from a physical verb into a mental verb. Metaphor has been shown to play an important role in many types of grammaticalization. According to Sweetser (1984, 1988), semantic change is brought about by a metaphorical extension from a source domain to a target domain in which the meaning preserved is a topological, and image-schematic structure. Metaphor, however, also seems to be involved in semantic changes that do not result in grammaticalization. Many semantic changes with content words can be seen as metaphorical, even though the new meaning is not more 'grammatical' in any sense. On the other hand, not all instances of grammaticalization can be characterized as metaphorical (cf. Traugott & König 1988). Consider the following cases:¹³

(3.8) a. 夫子被申生衣

fu-zi ei shen-sheng yi. (compare with (2.2b))

AG LOC E-T

teacher cover1 shen-sheng clothes

'The teacher covered Shen-sheng with clothes.'

b. 夫子被申生澤

fu-zi bei shen-sheng ze. (compare with (2.2a))

AG LOC E-T

teacher cover1 shen-sheng bounty

'The teacher covered shen-sheng with bounties.'

13 The examples in (3.8 a-e) are deduced from the examples in (2.2-2.3). Although these examples are obtained by means of deduction, they are structurally and logically possible.

c. 衣被申生

yi bei shen-sheng. (compare with (2.2c))

TH LOC

clothes cover₂ shen-sheng

'The clothes covered Shen-sheng.'

d. 澤被申生

ze bei shen-sheng. (compare with (2.2d))

TH LOC

bounty cover₂ shen-sheng

'The bounties covered Shen-sheng.'

e. 申生被澤

Shen-sheng bei ze. (compare with (2.3a))

LOC TH

Shen-sheng undergo bounty

'Shen-sheng underwent bounties.'

f. 申生被殃

shen-sheng bei yang. (= (2.3))

LOC TH

Shen-sheng suffer disaster

'Shen-sheng suffered disaster.'

The shift from (3.8a) to (3.8b) can be viewed as a metaphor if the abstract 'disaster' is considered to cover 'him' in the way the concrete 'clothes' do. The same can be said of the shift from (3.8c) to (3.8d). But the concept of metaphor does not help to explain the shift from (3.8d) to (3.8e). And this is the key step in *bei's* change from a physical verb to a mental verb. The concept of metaphor is applied when there is a correspondence relation between the source domain and the target domain. For

instance, in Chinese, 'Introduction to Linguistics' can be expressed as follows:

(3.9) 語言學入門

yu-yan-xue ru men.

linguistics enter door

'The door to Linguistics.'

In (3.9), 'linguistics' is compared to a building, thus 'introduction' turns out to be a 'door'. The change between them involves a correspondance relation. But such a metaphorical relation does not exist between (3.8d) and (3.8e):

(3.10) Source Domain (= (3.8d)): Target Domain (= (3.8e)):

澤被申生

申生被澤

ze bei shen-sheng shen-sheng bei ze.

TH LOC LOC TH

bounty cover2 shen-sheng shen-sheng undergo bounty

'The bounties covered 'Shen-sheng underwent

sheng-sheng.' bounties.'

As can be seen in (3.10), the lexical meanings of the theme and locative in the target domain are exactly the same as in the source domain. The only difference is the exchange of syntactic positions between the theme and locative and the corresponding change from Predicate (TH ---- LOC) to Predicate (LOC ---- TH). As a result of this exchange, the physical verb becomes a mental verb.¹⁴ The reason for this semantic shift is that the

14 Although there might be some verbs in Chinese that are bidirectional in their change from physical verb to mental verb or vice versa, it is generally accepted that the change from physical verb to mental verb is much more common and popular than that from mental verb to physical verb in the process of grammaticalization (Heine & Reh 1985; Heine & Hunnemeyer 1988; Kemmer 1988; Langacker 1987, 1991; Sweetser 1984, 1988). As for the change direction for *bei*, nobody will argue against the claim that it is from 'cover' to 'suffer' (Wang 1980: 430).

exchange of positions for the theme and locative gives rise to a change in their logical and semantic relations. The inherent semantic structure of the physical relationship is P (TH, LOC), whereas the inherent semantic structure of a mental relationship is P (LOC, TH). It is well known that word order changes are often related to both functional factors and the empathy focus of the speaker (Tai 1976; Huang 1978; Tang 1986; Kuno 1987). In this light, I would like to suggest that the change involved in the development from a physical domain to a mental domain is more likely to have a discourse explanation than one couched in terms of metaphor.

The discourse principles operative in Chinese have been widely discussed from various perspectives (Tsao 1979; Li & Thompson 1981; Tang 1986). Tang, based on Kuno (1987), suggests four discourse principles for expressing the viewpoint or the focus of empathy of the speaker: a) the speaker's empathy hierarchy in surface structure is Subject >> Object >> ... -> Patient;¹⁵ b) conflicting empathy foci are prohibited, i.e., it is not possible to have conflicting or contradictory empathy foci within the same sentence; c) the speech-act participant empathy hierarchy is speaker -> hearer -> third person; d) a topic or previously mentioned discourse-anaphoric NP is prior on the empathy hierarchy to a non-topic or discourse-nonanaphoric NP which is mentioned for the first time. These four functional principles can be seen as manifestations of a single principle that says, in essence, that 'close' is prior to 'distant', on the empathy hierarchy. 'Close' refers to subject, speaker, and hearer, who enjoy priority as the foci of the speaker's empathy; 'distant' refers to indirect object, patient, and third person, who are less important than those who are 'close' in terms of

15 '>>' means 'prior to or simultaneous with', '->' means 'prior to'.

speaker empathy. The difference between active and passive sentences in Chinese is chiefly a matter of a change in the focus of information and in the order of empathy foci. As seen in (3.11), a single event 'the husband Zhangsan has beaten his wife Lisi' can be described in five different ways.

- (3.11) a. 張三打了李四。

Zhangsan da le Lisi.

Zhangsan beat ASP Lisi

'Zhangsan has beaten Lisi.'

- b. 張三打了他的太太。

Zhangsan da le ta-de tai-tai.

Zhangsan beat ASP his wife

'Zhangsan has beaten his wife.'

- c. 李四的丈夫打了她。

Lisi de zhang-fu da le ta.

Lisi of husband beat ASP she

'Lisi's husband has beaten her.'

- d. 李四被張三打了。

Lisi bei Zhangsan da le.

Lisi PASS Zhangsan beat ASP

'Lisi was eaten by Zhangsan.'

- e. 李四被她的丈夫打了。

Lisi bei ta-de zhang-fu da le.

Lisi PASS her husband beat ASP

'Lisi was beaten by her husband.'

Although these five sentences have the same cognitive content, they differ in terms of the empathy focus of the speaker. In (3.11a), directly addressing the two people involved in the event as 'Zhangsan' and 'Lisi', the

speaker simply narrates the event from the standpoint of an onlooker. In (3.11b), 'Zhangsan' is still the subject, but the object 'Lisi' is replaced by 'his wife'. 'Zhangsan' has become the empathy focus of the speaker. In (3.11c), 'Lisi's husband' replaces 'Zhangsan' as the subject, indicating that the speaker takes a stand for 'Lisi' in his narration. (3.11d) is a passive sentence derived from the active sentence (3.11a). Purposely using 'Lisi' as the subject or topic of the sentence, the speaker regards 'Lisi' as an empathy focus. In using 'her husband' instead of 'Zhangsan' as the object, (3.11e) goes much farther than the other sentences in revealing the speaker's deep empathy for 'Lisi'.

It should be pointed out that the difference between (3.11a) and (3.11d) is simply the difference between active and passive sentences, with the speaker's narrative stance being more practical and neutral in (3.11a) but more empathetic to 'Lisi' in (3.11d). Whether the agent or patient is chosen as subject can be decided by the empathy focus of the speaker.

Although the semantic case-role of the subject or topic of the sentence may be shifted in conjunction with the shift of empathy focus of the speaker, this chain shift might follow certain direction. Many linguists have studied the relations between semantic case-roles and the functional hierarchy from a synchronic perspective. One of the assumption of this sort of study is the 'Actor-Undergoer Hierarchy' proposed by Foley & Van Valin (1984), which combines an accessibility to actor hierarchy and a hierarchy of preferences for undergoer into the single cline as shown in (3.12) (the arrows indicate the increasing markedness of the choice).¹⁶

16 Foley & Van Valin (1984) characterize the *actor* as the argument of a predicate which expresses the participant which performs, effects, instigates or controls the situation denoted by the predicate, and the *undergoer* as the argument which

(3.12) AG ... EFF ... LOC ... TH ... PA

Actor ----->

<----- Undergoer

And the other hierarchy of access to subject/topic, or topic hierarchy of the major semantic case-role, proposed by Givón (1984), is seen in (3.13).¹⁷

(3.13) AG > DAT/BEN > PA > LOC > INSTR/ASSOC > MANN

Both (3.12) and (3.13) are synchronic hierarchies based on an analysis of logical and semantic relations. As for the diachronic hierarchy of the semantic chain shift, so far nobody has discussed it in detail. Motivated by the Chinese data discussed here, the diachronic chain shift of *bei* might be given as (3.14) if we take (2.2a), the earliest example we have found, as a prototype.¹⁸

(3.14) AG---SUBJ => TH---SUBJ => LOC---SUBJ

(e.g. 2.2a)

(e.g. 2.2c-d)

(e.g. 2.3)

Given the diachronic hierarchy in (3.14), we are able to show how *bei* changed from a physical verb into a mental verb. Taking (2.2a) as a prototype, we find that the prototypical actor is an agent, occurring in the pattern: Agentive---Verb (AG, LOC). When the empathy focus of the speaker shifts to the theme, the theme becomes the subject. According to the previously

expresses the participant which does not perform or control any situation but rather is affected by it in some way. And moreover, the actor hierarchy works from left to right, the undergoer hierarchy from right to left, with agent being the primary choice for actor, patient the primary choice for undergoer, and all others falling somewhere in between.

17 DAT = dative; BEN = benefactive; INSTR = instrumental; ASSOC = associative; MANN = manner.

18 The direction for the change from AG-SUBJ to TH-SUBJ is from actor to undergoer, i.e., a change of actor hierarchy. And the direction for the change from TH-SUBJ to LOC-SUBJ is from undergoer to actor, i.e., a change of undergoer hierarchy.

mentioned discourse principle (b) (i.e. the ban on conflicting empathy foci), the agent, which is the most qualified candidate, must be deleted.¹⁹ The original verb consequently changes into a non-agentive verb. At the same time the word order change of the semantic case-roles results in a new logical structure with new semantic relations. The semantics of the sentence with a theme as subject reflects a physical relationship, i.e. the pattern: Non-agentive---Verb (TH, LOC).

When the speaker's empathy focus shifts to the locative, the latter becomes the subject of the sentence and the theme becomes the object. As a result, the logical structure of the sentence changes from that of the physical relationship to that of the mental relationship. This change in structure stimulates the semantic change of the verb. Generally speaking, the subject of an action verb is an actor. Now, owing to the powerful influence of topicalization, the locative moves to subject position and the original subject, a non-undergoer, becomes an undergoer, causing the verb to lose its physical property and gain the properties of the new, abstract mental domain. As a result of the emergence of this new domain, some new semantic properties appear, such as the abstract sense associated with the theme when it becomes stimulus.

It should be noted that the change from a physical verb 'cover₂' to a mental verb 'suffer' can be divided into two stages. The first is refocusing, i.e. the speaker's empathy focus shifts from the theme to the locative, thus completing the change from a physical verb to a mental verb. The semantic

19 Another reason for agent deletion is that the agent is highest on the topic hierarchy and is thus the expected subject in any case, except when the speaker shifts his empathy focus to the other case-role, making it the subject or topic. In other words, the agent can be present when another case-role acts as subject (except in passive sentences).

property at this time is neutral (cf. (2.2c-d) and (2.3a)). But the physical relationship between the two participants becomes the mental relationship. The second stage is one during which the neutral semantic property is replaced by pejorative and adversative semantic properties (cf. (2.3b, c, and d)). From the viewpoint of Cognitive Grammar (Langacker 1987, 1991), this change might be relevant to the speaker's psychological image of the action conveyed by the verb. It has been observed that Indo-European words for mental events are very frequently derived from words referring to physical actions (Sweetser 1984, 1988). 'Cover' refers to an action which seems to be uncontrollable, irresistible and which involves motion towards its undergoer, who is placed in a position in which he receives the action passively. What is expressed by the action does not reflect the undergoer's will. Rather, the undergoer is under its influence. This easily gives rise to an image of the undergoer as unfortunate and powerless. Although sometimes some actions are good or favorable to the undergoer (c.f (2.2d) and (2.3a)), they are still beyond his control. Such is the case, in fact, with bounties bestowed by an emperor or God. In China's ancient society, such bounties are thought to be irresistible, so the undergoer is always construed as being in a passive position. On the whole, because the psychological image of the action conveyed by verb 'cover' is something that the undergoer does not want or enjoy, it gradually gained a pejorative property and became restricted to use in contexts in which the undergoer is understood as being adversely affected. When the subject of 'cover' is non-human and the undergoer is human, this psychological image leads the speaker to shifting his empathy focus to the undergoer and to stressing the experiencer of the adverse circumstances.

It should also be noted that the semantic changes stimulated by this psychological image, for example, the semantic change from the physical

domain to the mental domain, are explained not by an approach based on metaphor but by an approach based on the speaker's shift of empathy focus. The major semantic changes caused by the shift of discourse chain are shown in (3.15):

(3.15)

| shift stages | speaker focus | subject | verb | object |
|--------------|---------------|----------------------|------------------------|------------|
| proto-type | AG | +actor -undergoer | +agentive +physical | +undergoer |
| 1 | TH | -actor -undergoer | -agentive +physical | +undergoer |
| 2 | LOC | -actor +undergoer | -physical +mental | -undergoer |

In its prototype form, *bei* is the agentive physical verb 'cover1' (cf. (2.2a-b)). In shift stage 1, *bei* is the non-agentive physical verb 'cover2' (cf. (2.2c-d)). In shift stage 2, it is a mental verb (cf. (2.3)).

3.3 The Shift from a Mental Verb to a Passive Marker

Having completed its change from a physical verb into a mental verb, *bei* begins its second major change, i.e. the change from a mental verb to a passive marker.

Since this change has no morphological reflex, it is commonly thought that determining the date of origin of the passive marker is rather difficult. Indeed, certain early sentences are applicable to more than one analysis. Consider, for instance, (3.16), an example that Chinese historical linguists (Li & Thompson 1974; Tai 1976; Huang 1978; Bennett 1981; Peyraube 1989)

have been unable to agree about:

(3.16) 國一日被攻，……

guo yi ri bei gong, ... (=2.4a)

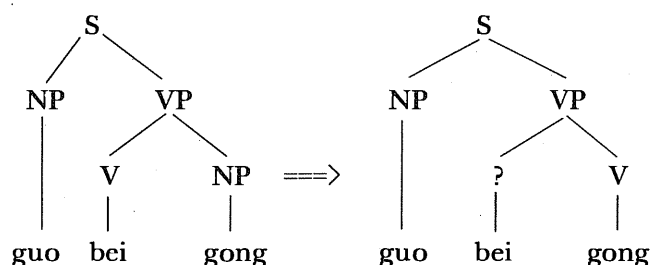
country one day PASS attack

‘If the country is attacked some day,...’

(Zhan-Guo-Ce, about 200 B.C.)

The fact that so many Old Chinese words can function as either nouns or verbs makes it difficult to determine the part of speech of the element after *bei*. Similarly, the status of *bei* itself is unclear. The kind of syntactic reanalysis that would result in a passive interpretation of (3.16) is shown in (3.17):

(3.17)



Some Chinese linguists hold that whether *bei* in (3.16) is a verb or a passive marker depends on whether the element following *bei* is analyzed as a verb or NP. But since there is not any obvious morphological marker for differentiating verbs from nouns in Chinese, this is an unreliable criterion.

It seems to me that *bei* in (3.16) might be a passive marker on the grounds that the semantic properties of this structure are different from those of mental verbs. Based on what we have already established concerning the semantic properties of mental verbs, if a sentence expresses an event in the mental domain with the mental verb ‘suffer’, the subject usually is a locative with the semantic feature of human or animate, and the object is a

stimulus which comes into contact with the mind of the experiencer. The relation involved would be that of locative-theme. According to the semantic feature of human or animate, I think that based on the difference in language performance, locative might be subgrouped into two types: one is the locative with [+human] feature, and the other is the locative with [-human] feature. As seen in (3.10) discussed before, (3.8e) can be deduced from (3.8d), represented below for convenience:

| | | | |
|--------|-----------------------------|----|-----------------------------|
| (3.18) | Source Domain (= (3.8d)) | => | Target Domain (= (3.8e)) |
| | (Physical Domain) | | (Mental Domain) |
| | 澤被申生 | | 申生被澤 |
| | ze bei shen-sheng | | shen-sheng bei ze |
| | TH LOC | | LOC TH |
| | bounty cover person name | | person name undergo bounty |

But, by the same means of deduction, the result under the target domain given in (3.19) is not allowed:

| | | | |
|--------|----------------------------|----|-----------------------------|
| (3.19) | Source Domain (= (3.4c)) | => | *Target Domain |
| | (Physical Domain) | | (Mental Domain) |
| | 皋蘭被徑 | | 徑被皋蘭 |
| | Gao-lan bei jing | | *jing bei Gao-lan |
| | TH LOC | | LOC TH |
| | flower name cover path | | path undergo flower name |

As seen in the above, (3.18) and (3.19) are identical in the point that both undergo the change from physical domain (TH---LOC) to mental domain (LOC---TH), but different from each other in the fact that the former is grammatical while the latter is not. That is because the locative is human in (3.18) but non-human in (3.19). Thus it can be seen that only the locative with [+human] feature can be used as subject in mental domain.

Going over all the examples in (2.3), we will find that all of the subjects of the mental verb 'suffer' are the locative with [+human] feature. However, 'country' in (3.16) is an element with [-human] feature. If *bei* in (3.16) is a mental verb, its subject should be human or animate. So, (3.16) is not a sentence with a mental verb. Maybe, here we can try another alternative way of analysis on case (3.16). That is to say we may consider *bei* in (3.16) a physical verb. If so, the subject in (3.16) must be a theme and its verb must be non-agentive because 'country' is not the actor of an event. But this is problematic because one of the semantic features of themes is non-affected, and 'country' is clearly being affected in this sentence. Moreover, if the subject is a theme, the object must be a locative. But no such interpretation is available in this case. Thus, the only possibility is that the subject in (3.16) is the patient, which is semantically affected and either human or non-human. A sentence with patient as subject can only be a passive sentence or a stative sentence. But since the verb *gong* 'attack' in (3.16) is not stative, the only viable analysis of (3.16) is the passive one, with *bei* being interpreted as a grammatical marker of the passive structure.

Let us consider what semantic characteristics the passive structure formed with *bei* has and how this structure differs from the mental verb structure. First of all, the subject of the passive sentence must be an undergoer, which can be non-human and whose case-role is that of patient. The subject of a mental verb, on the other hand, is a locative with [+human] feature.

Second, the passive sentence with patient as its subject expresses an action in the physical domain with a physical verb, but the sentence with the locative as its subject expresses an event in the mental domain with a mental verb.

Third, the passive sentences formed by *bei* did not have an agent until about 440 A.D. In other words, before 440 A.D., such passive sentences only had one participant. The mental verb, however, can have two participants.

The main semantic properties of the physical, mental, and passive domains are summarized in the following table:²⁰

(3.20) Comparison of Main Semantic Properties

| domains examples properties | physical domain | | | | mental domain | passive domain |
|-----------------------------------|-----------------|---|---|---|---------------|----------------|
| | (2.2) | | | | (2.3) | (2.4) |
| | a | b | c | d | all | all |
| undergoer | - | - | - | - | + | + |
| agentive | + | + | - | - | - | - |
| two-participant | + | + | + | + | + | - |

It should be noted that although the passive sentence expresses an action in the physical domain with a physical verb, the physical verb involved is not *bei*. Language development usually does not move backwards. In passive sentences, *bei* is a passive marker; the element following *bei* is the physical verb. What has caused the change of *bei* from 'suffer' to a passive marker may be related to the change in the semantic property of the subject of the source domain.

While the passive domain with a passive marker is a target domain, the mental domain with the verb 'suffer' is a source domain. Although both

20 '+' in 'two-participant' line in (3.20) indicates two or more than two participants and '-' represents a single participant.

source domain and target domain have undergoer as their subject, in the former case the subject is human while in the latter it is either human or non-human. Probably because of the influence of personification, non-human NPs began to appear in the subject position, which was formerly accessible only to human NPs. A series of chain reactions ensued. Originally, the relationship between the locative and theme in the source domain was the mental relationship. But once the subject was interpreted as non-human, its semantic role changed from locative with [+human] feature to patient. Although both patient and locative are undergoers, the presence of the patient role entails the pattern Predicate [PA, (AG)]. The presence of a locative, on the other hand, entails the pattern Predicate [LOC, TH].

In the source domain, *bei* is an element with considerable freedom. As a mental verb (let us call it 'suffer1' here), it describes a mental relationship between locative and theme. But in the target domain, this relationship disappears. The locative becomes the patient, and the other participant (i.e. the theme) is deleted, and *bei* loses its function as a mental verb. Within the physical domain with a patient as the subject and a main verb that is a physical verb, *bei* cannot change back to a physical verb. As a result, it becomes a passive marker, uniting with the physical verb to express the passive voice. *Bei* at this time might be like 'be V-en' in English (let us call it 'suffer2' here). It has become a bound morpheme with very abstract and schematic characteristics. Givon (1979) has characterized grammaticalization as a movement from loose parataxis to tight syntax. This is what has happened to *bei* in Chinese. The development of *bei* from a verb meaning 'suffer' to a passive marker is summarized in (3.21):

| | | | | | | | | | | | | | | | |
|--------|---|--|---------------------------|--|--|---------|--|-------|---|--|--------------|--|--|---------|--|
| (3.21) | Source Domain | | Target Domain | | | | | | | | | | | | |
| | suffer1 (undergoer, (LOC)) | | suffer2 (undergoer, (PA)) | | | | | | | | | | | | |
| | <table> <tr><td> </td><td>+experiencer</td><td> </td></tr> <tr><td> </td><td>+mental</td><td> </td></tr> </table> | | +experiencer | | | +mental | | ====> | <table> <tr><td> </td><td>-experiencer</td><td> </td></tr> <tr><td> </td><td>-mental</td><td> </td></tr> </table> | | -experiencer | | | -mental | |
| | +experiencer | | | | | | | | | | | | | | |
| | +mental | | | | | | | | | | | | | | |
| | -experiencer | | | | | | | | | | | | | | |
| | -mental | | | | | | | | | | | | | | |

It should be pointed out that although 'suffer2' is already a passive marker which has lost almost all of the lexical meanings possessed by 'suffer1' and which possesses only the schematic meaning now, it retains the adversative property of 'suffer1', which it has transferred to the whole passive structure, such that the structure itself is associated with an adversative meaning for the subject. Moreover, this adversative meaning is found not only in the passive formed with *bei* but also in the passive structures formed with later emerging passive markers like *gei* and *rang* (Wang 1980; Li 1980).

4. Further Discussion

In this section, I highlight some of the salient results of this study of the passive structure in Chinese and I show how they bear on various theoretical issues of general interest.

One commonly accepted account of the process of semantic change holds metaphor to be the driving force. But, as shown in section 3.2, metaphor does not provide an explanation for the grammaticalization of *bei* in Chinese, at least not for the early stages of this process. A problematic example for an approach based on metaphor is (3.10) which is again reproduced here as (4.1):

| | | |
|-------|-----------------------------|---------------------------|
| (4.1) | Source Domain: | Target Domain: |
| | 澤被申生 | 申生被澤 |
| | ze bei Shen-sheng | Shen-sheng bei ze |
| | TH LOC | LOC TH |
| | bounty cover2 Shen-sheng | Shen-sheng undergo bounty |
| | 'The bounties covered | 'Shen-sheng underwent |
| | sheng-sheng.' | bounties.' |

The theme and locative in both source and target domains have exactly the same meaning, but the change in word order turns 'cover' into 'undergo'. This example provides the motivation for our discourse chain shift hypothesis. The grammaticalization of *bei* can be divided into four stages:

| | | | | | | | |
|-------|----------|-------|--------------|-------|-----------------|-------|---------|
| (4.2) | cover1 | ====> | cover2 | ====> | undergo/suffer1 | ====> | suffer2 |
| | | | | | | | |
| | gentive | | non-agentive | | mental | | passive |
| | physical | | physical | | verb | | marker |
| | verb | | verb | | | | |

It is the shift of the speaker's empathy focus that caused the semantic change of *bei*. This was governed by the following hierarchy:

| | | | | | | | |
|-------|----------|-----|----------|-----|-----------------|-----|----------|
| (4.3) | AG--SUBJ | ==> | TH--SUBJ | ==> | LOC--SUBJ | ==> | PA--SUBJ |
| | cover1 | | cover2 | | undergo/suffer1 | | suffer2 |

The other issue touched on is the directionality of grammaticalization. It is difficult to pin down that the notion of increasing abstractness. There seems to be a natural directionality in many instances of grammaticalization from more richly specified to more schematic meanings. This type of development might be thought of as semantic loss or bleaching in some sense, since the semantic richness of the original lexical item is greatly reduced. However, by virtue of signalling new types of meaning in different domains, there

must be a semantic gain as well. It is possible that the emptying out of semantic content, with fossilized elements that become reanalyzed as part of a stem, occurs at the very end of the grammaticalization process. The case of *bei* discussed here has shown that its grammaticalization involves both of semantic bleaching and semantic gaining. When *bei* changed from the verb 'cover' to the verb 'suffer', it lost the semantic properties of a physical verb but gained at the same time the semantic properties of a mental verb. It should be noted that the gaining hypothesis maintained by the scholars who oppose the bleaching hypothesis is concerned only with abstract gaining. As for the claim that grammatical words are meaningful, the only concern is with schematic meaning, structural meaning, etc., because abstractness itself is considered to be a kind of meaning. Dressed in this way, the gaining hypothesis sounds fairly original. However it is not really much different from the bleaching hypothesis. It differs, if at all, by virtue of the perspective of those who entertain it. However, this paper provides evidence for the gaining hypothesis. When *bei* changed from 'cover₂' to 'suffer₁', it lost its original neutral semantic property and then gained, to a certain degree, the relatively particular semantic property of adversity. Moreover, when *bei* changed completely into a grammatical marker, not only did it not lose its semantic property of adversity but it also transferred this property to the passive structure as a whole and later diffused it to all of the different types of passive structures, suggesting quite clearly that a grammatical word can be meaningful.

5. Concluding Remarks

By way of summary, I have studied the problem of how the physical verb

bei in Old Chinese became grammaticalized into a passive marker in Modern Chinese. Further, I have characterized the semantic steps taken by *bei* in its grammaticalization, and have evaluated different ways of accounting for the change from one step to the next, with special attention being paid to the role of metaphor. I have offered a discourse explanation for the development of *bei* into a mental verb first, and later into a passive marker, and have considered the relevance of this development to various theoretical issues, notably the problem of whether grammaticalization involves semantic bleaching or gaining. Space limitations preclude a discussion of numerous other problems, such as the nature of the mapping between syntax and semantics, the relation between lexical and structural meaning, etc.. These problems must be left for future research.

(Accepted for publication 19 November 1992)

Acknowledgments

I wish to give special thanks to Suzanne Kemmer for her important advice and criticism concerning this research. I am also very grateful to Matthew Chen, James Huang, Edward Klima, Claudia Brugman, Bingfu Lu, members of the audience at MALC (XXV) in Kansas as well as at IsCLL (II) in Taipei, and an anonymous reviewer for their valuable comments on earlier versions of this paper. Needless to say, none of the above-mentioned persons should be held responsible for any remaining errors; these are exclusively my own.

BIBLIOGRAPHY

- Bennett, Paul A. (1981) *The Evolution of Passive and Disposal Sentences*.
Journal of Chinese Linguistics, 9.
- Bybee, Joan & William Pagliuca (1985) *Cross-linguistic Comparison and Development of Grammatical Meaning*. in Jacek Fisiak (ed.), *Historical Semantics and Historical Word Formation*. Berlin: Mouton Publishers.
- Chafe, Wallace (1970) *Meaning and the Structure of Language*. Univ. of Chicago Press.
- Chao, Yuen-ren (1968) *A Grammar of Spoken Chinese*. Berkeley and Los Angeles: Univ. of California Press.
- Chu, Chauncey C. (1987) *Historical Syntax Theory and Application to Chinese*. The Crane Publishing Co.
- Dowty, David (1979) *Word Meaning and Montague Grammar*. Dordrecht: Reidel.
- Fillmore, Charles (1968) *The Case for Case*. E. Bach & R. Harms, eds., *Universals in Linguistic Theory*. New York: Holt, Rinehart & Winston.
- Foley, William A. & Robert D. Van Valin Jr (1984) *Functional Syntax and Universal Grammar*. Cambridge Univ. Press.
- Givon, Talmy (1979) *On Understanding Grammar*. New York: Academic Press.
- (1984) *Syntax: A Functional-Typological Introduction*. John Benjamins Publishing Company. Amsterdam/Philadelphia.
- Haenisch, E. (1933) *Grammatische Bemerkungen zur Chinesischen Literatur-sprache*. C. zum Ausdruck des Passivs, Asia Major, IX.
- Hashimoto, A. (1971) *Descriptive Adverbials and Passive Construction*. Unicorn, 7.

- Hashimoto, M. (1969) *Observations on the Passive Construction*. Unicorn, 5.
- Heine, Bernd & Friederike Hunnemeyer (1988) *From Cognition to Grammar: Evidence from African Languages*. ms.
- Heine, Bernd & Mechthild Reh (1985) *Grammaticalization and Reanalysis in African Languages*. Hamburg: Helmut Buske.
- Hopper, Paul & Sandra A. Thompson (1980) *Transitivity in Grammar and Discourse*. Language, 56.
- Huang, C.-T. J. (1982) *Logical Relations in Chinese and the Theory of Grammar*. Ph.D. dissertation, MIT.
- Huang, Shuanfan (1978) *Historical Change of Prepositions and Emergence of SOV Order*. Journal of Chinese Linguistics, 6.
- Jackendoff, Ray (1976) *Toward an Explanatory Semantic Representation*. Linguistics Inquiry, 7.
- Karlgren, B. (1957) *Grammata Serica Recensa*. Stockholm.
- Kemmer, Suzanne E. (1988) *The Middle Voice: A Typological and Diachronic Study*. Stanford Univ. Ph.D. dissertation.
- Klima, Edward S. (1965) *Studies in Diachronic Syntax*. Harvard Univ. Ph.D. dissertation.
- Kuno, Susumu (1987) *Functional Syntax*. Chicago: The Univ. of Chicago Press.
- Lakoff, George & Mark Johnson (1980) *Metaphors we Live by*. Univ. of Chicago Press.
- Langacker, Ronald W. (1987) *Foundations of Cognitive Grammar*. Vol.1. Stanford: Stanford Univ. Press.
- (1991) *Foundations of Cognitive Grammar*. Vol.2. Stanford: Stanford Univ. Press.

- Li, Linding (1980) *Bei-passive Sentence*. Zhong-Guo-Yu-Wen, No.6. Peking.
- Lehmann, Christian (1985) *Grammaticalization: Synchronic Variation and Diachronic Change*. *Lingua e stile* 20.
- Li, Charles N. & Thompson, Sandra A. (1974) *Historical Change of Word Order: A Case Study of Chinese and its Implications*. In John Anderson and Charles Jones eds., *Historical Linguistics*, 1. Amsterdam: North-Holland.
- (1981) *Mandarin Chinese: A Functional Reference Grammar*. Berkeley and Los Angeles: Univ. of California Press.
- Ly, Shuxiang (1942) *Zhong-guo Wen-fa Yao-lue (Outline of Chinese Grammar)*. Peking.
- Meillet, Antoine (1912) *L'Evolution des Formes Grammaticales*. *Scientia (Rivista di Scienza)*, XII: XXVI, 6. Reprinted (1965) in *Linguistique Historique et Linguistique Generale*. Paris: Librairie Honore Champion.
- Peyraube, Alain (1989) *History of the Passive Constructions in Chinese until the Century*. *JCL*, 17.
- Sun, Chaofen & Talmy Givon (1985) *On the So-called SOV Word Order in Mandarin Chinese: A Quantified Text Study and Its Implications*. *Language*, 61.
- Sweetser, Eve (1984) *Semantic Structure and Semantic Change: A Cognitive Linguistic Study of Modality, Perception, Speech Acts, and Logical Relations*. Univ. of California at Berkeley. Ph.D. disseration.
- (1988) *Grammaticalization and Semantic Bleaching*. *BLS*, 14.
- Tai, James (1976) *On the Change from SVO to SOV in Chinese*. Papers from the Parasession on Diachronic Syntax, Chicago: Chicago Linguistics Society.

- Tang, Jueming (1987) *On Passive Structures from Han Dynasty to Wei Dynasty*.
Zhong-Guo-Yu-Wen, No.3. Peking.
- Tang, Tingchi (1979) *Studies in Chinese Syntax*. Student Book Co., Taipei.
- (1986) *Chinese Grammar and Functional Explanation*. Chinese World,
No.39-41.
- Teng, Shouhsin (1975) *A Semantic Study of Transitivity Relations in Chinese*.
Univ. of California Press.
- Traugott, Elizabeth & Ekkehard Konig (1988) *The Semantics of Grammaticali-
zation Revisited*. Prepared for the Symposium on Grammaticalization.
- Traugott, Elizabeth (1982) *From Propositional to Textual and Expressive
Meanings: Some Semantic-pragmatic Aspects of Grammaticalization*. In
Perspectives on historical linguistics, eds. W.P. Lehmann & Y. Malkiel.
Amsterdam: John Benjamins.
- (1989) *On the Rise of Epistemic Meanings in English: An Example of
Subjectification in Semantic Change*. Language, 65.
- Tsao, Fengfu (1970) *A Functional Study of Topic in Chinese: The First Step
towards Discourse Analysis*. Student Book Co., Taipei.
- Wang, Li (1980) *Han-Yu-Shi-Gao (Grammatical Theory in Chinese)*. Peking.
- (1984 (1944)) *Zhong-Guo-Yu-Fa-Li-Lun (Grammatical Theory in
Chinese)*. Jinan.
- (1985 (1943)) *Zhong-Guo-Xian-Dai-Yu-Fa (Modern Chinese Grammar)*.
Jinan.
- Wang, Huan (1983) *The Passive Sentences of English and Chinese*. Zhong-Guo-
Yu-Wen, No.4. Peking.

On the History of Chinese Locative Prepositions*

Alain Peyraube

CRLAO, CNRS, Paris, France

This paper attempts to show that, contrary to what Dobson (1964) or Huang S.-f. (1978) suppose, *zai* is not yet a locative preposition in Early Archaic Chinese, but still a verb. The locative preposition in EAC is *yu* and it is postverbal. The situation is the same in Late Archaic Chinese and during the Former Han.

Under the Late Han, one important change occurs: Verb + *yu* + Locative NP > *yu* + Locative NP + V, probably by analogy with other PP which are already preverbal.

The locative phrases involving *zai* and *zhuo* develop considerably during the Six Dynasties. *Zai* (above all preverbal, expressing either the general location or the resultative location) and *zhuo* (always postverbal and expressing the resultative location) are verbs and then used in serial verbs constructions. This spreading of *zai* and *zhuo* is independent of the moving of *yu*-PP in preverbal position.

Beginning in the early Tang period, *zhuo* disappears progressively and is replaced by *zai*: *zhuo* > *zai*. This lexical unification is then the prelude to the grammaticalization of *zai* [+ V] into *zai* [+ Prep.], which can be dated around the 8th century.

0. Introduction

In Contemporary Chinese, the locative prepositional phrases (PP) are

* I am indebted to He Leshi, Alain Lucas, Liu Jian and Wei Peichuan for their valuable suggestions and comments on a preliminary version of this paper.

mostly preverbal (e.g.: *ta cong Faguo lai* [he - from - France - come] 'He is coming from France'; *ta zai zher chifan* [he - at - here - eat] 'He eats here'; *ta dao Meiguo qu* [he - to - US - go] 'He is going to the US'). However, some of them, with *zai* 'at' or *dao* 'to', can either precede or follow the verb. The use of the postverbal location is more restricted than the preverbal one: the verbs generally have to be verbs of displacement, or verbs of posture, or verbs of appearing, or verbs of placement (see Li & Thompson, 1981, pp. 398 *sq.*).

It has been suggested that there is a semantic principle which may account for the placement of the locative PP in *zai* under different conditions. Tai (1975) formulates this principle as follows: "While the function of a Chinese preverbal place adverbial is to denote the location of an action or a state of affairs, that of a postverbal one is to denote the location of a participant of an action as a result of the action". Thus, any verb can take a preverbal locative phrase but only those whose meaning allows them to indicate the place where the actor or direct object is displaced can take a postverbal locative phrase.

This semantic principle accounts for the difference between 1 and 2:

1. 他 在 桌子 上 跳
he - at - table - on - jump
He jumps (up and down) on the table.
2. 他 跳 在 桌子 上
he - jump - at - table - on
He jumps onto the table (from somewhere else).¹

The equivalent of the Contemporary Chinese locative PP is, in Ancient

1 For more examples of this kind and some cases for which Tai's principle cannot account for, see Peyraube (1977).

Chinese, the locative PP in *yu* 于 (於) which is almost always postverbal, as in:

3. 王 子狐 爲 質 于 鄭 (左傳：陰·三)

Wang Zihu - become - hostage - at - Zheng

Wang Zihu became a hostage at (the state of) Zheng.

What has been the historical evolution from Archaic Chinese to Contemporary Chinese? Li & Thompson (1976) claim that "it was not until the fifteenth or sixteenth century that the new prepositions with preverbal PP became prevalent". As for the emergence of the modern prepositions, they were derived from verbs through serial verb constructions (Li & Thompson, 1974).

Tai (1976) has a different analysis. He hypothesizes the following developmental stages: a) V (+ NP) + Prep. *yu* + NP > Prep. *yu* + NP + V (+ NP); b) Prep. *yu* + NP + V (+ NP) > V1 *zai* + NP + V2 (+ NP).

Thus, for Tai, the reordering took place before the reanalysis: we have a reanalysis of a preposition *yu* becoming a verb *zai* after the PP has been shifted to the preverbal position. Tai adds: "As to the replacement of the preposition *yu* by the verb *zai* in cases where word order has not changed (i.e. when *zai* is now postverbal), we can assume that the reanalysis took place to be consistent with reanalysis in preverbal position".²

Huang (1978), based on Dobson (1964), notices that there was already a preposition *zai* in Early Archaic Chinese and that this preposition occurred in either preverbal or postverbal position. In Late Archaic Chinese, the use of *zai* as a preposition was discontinued in favour of *yu*. By Late Han Chinese, *zai* was again restored as a preposition: "In Han usage, this use of *zai* as a

2 Tai does not say anything about the grammaticalization of the verb *zai* into a preposition.

preposition is clearly a resuscitation, rather than an innovation". Thus we have the following changes, which are single lexical replacements: "zai [+ Prep]" in EAC > "yu [+ Prep]" in LAC > "zai [+ Prep]" in Late Han Chinese.

After a close and systematic examination of the locative PP in all the important texts from the oracle bone inscriptions to the Song dynasty, I would like to show that none of these former analyses is entirely correct though some of their findings are valid.

1. Early Archaic Chinese (11th-6th B.C.)

In Early Archaic Chinese, as in the oracle bone inscriptions period, the common preposition to express location is *yu* 'at, to, from' and the PP formed with *yu* is postverbal.³ E.g.:

4. 求 你 于 天 邑 商 (書經：多士)
seek - you - at - Heaven - city - Shang
Seek you in the Heavenly City, Shang.
5. 王 大 會 于 宗周 (金文：士盂)
king - greatly - convene assembly - at - Zongzhou
The King convened a great assembly at Zongzhou.

3 As Djamouri (1987, pp. 225 *sq.*) points out, it is doubtful, contrary to what is assumed in Serruys (1981), that *yu* was still a verb in the oracle bone inscriptions. It was also probably not a coordinative conjunction linking verbs or even nouns, as it is hypothesized in Chen (1956). For some instances of pre-verbal *yu* in EAC - which were rare -, see Wei (forthcoming). See also Shen Pei (1990) who distinguishes the prepositions of time, which are often preverbal in the late period of the oracle bone inscriptions, and the prepositions of place which are always postverbal, unless they are marked.

According to Dobson (1962), Huang (1978), Li (1980), EAC has another locative preposition: *zai* 在 (or *cai* 才).⁴ Some of the examples cited are:

6. 王 在 新 邑 烝 (書：洛誥)

king - (be) at - new - city - perform - Winter Sacrifice

The King performed the Winter Sacrifice in the new city.

7. 永 不 忘 在 王 家 (書：酒誥)

always - negation - forget - (be) at - royal - house

(You shall) never be forgotten in the Royal House.

There is also one single example of *zaiyu* 在於 which seems to be a locative preposition:

8. 天 罰 不 及 庶 民 罔 有

Heaven - punishment - negation - extreme - people - negation - have -

今 政 在 于 天 下 (書：呂刑)

present - government - (be) at - heaven - under

(If) the punishment of Heaven were not so extreme, the people would have no good government all under Heaven.⁵

However, in the *Shu jing*, only five *zai*, out of 130, may be interpreted as a locative preposition, as in 6-8. All the other *zai* are verbs meaning 'to reside in', 'to be located at'. Moreover, these presumed prepositional *zai* could be interpreted as verbs as well, if we consider the sentences 6-8 as serial verb constructions V1 + V2, where *zai* is the V1.⁶

The situation is about the same in the oracle bone inscriptions, in the

4 In oracle bones and bronze inscriptions, we have *cai* instead of *zai*. The distinction made by Chen (1956) between a verb *zai* "to be at" and a preposition *cai* "at" seems not to be motivated.

5 The English translations of 7-8 are borrowed from Legge pp. 405, 513.

6 Such an interpretation would be quite unnatural only for 7.

bronze inscriptions and in the *Shi jing*, where there are only five *zai* which can be interpreted as prepositions, out of 156, as in:

9. 或 息 偃 在 狀 (詩經：49/205)

some - rest - loll - (be) at - couche

Some rest and loll upon their couches.

10. 駿 奔 走 在 廟 (詩：74/266)

hurrily - run - (go) to - temple

Grandly they hurried about in the temple.

11. 在 泮 飲 酒…… 在 泮 獻

(be) at - college - drink - wine - ... (be) at - college - present -

觥…… 在 泮 獻 囚…… (詩：79/299)

left ear - ... (be) at - college - present - prisoner

And in the college he is drinking...

Will here present their left ears [of their foes]...

Will here present their prisoners.⁷

In these examples, *zai* might also be a verb instead of being a preposition.

We have indeed some cases where two *zai* are following each other. We might suppose in these cases that the first *zai* is a V and the second one a preposition. E.g.:

12. 魚 在 在 澡…… 王 在 在 鎬…… (詩：55/221)

fish - be - at - pondwell - ... king - be - at - Hao

However, it would be better to interpret these sentences as follows: "The fish are (there), (they) are in the pondwell... The King is (here), (he) is at Hao".

7 The English translations of 9-11 are borrowed from Legge, pp. 361, 569 and 617-8.

Thus we can conclude that *zai* was not a locative preposition in EAC, but only a verb. The presumed examples of prepositional *zai* - which are indeed very rare and scattered - can be interpreted as V as well. The locative preposition in EAC was *yu*. And it was postverbal, either for the location of the action itself or for the location of a participant affected by the action.

2. Late Archaic Chinese (5th-3rd B.C.)

Almost everybody would agree that there is only *yu* as locative preposition in Late Archaic Chinese, even Dobson (1962) or Huang (1978) who think that the locative preposition *zai* disappeared in LA period and re-emerged only during the Han, Examples of *yu* are:

13. 學 于 中 國 (孟子：滕公·上)

learn - at - central - state

(He) learned (it) in the Central States.

14. (= 3) 王 子狐 爲 質 于 鄭 (左傳：陰·三)

Wang Zihu became a hostage at (the state of) Zheng.

In fact, those (like Dobson or Huang) who consider that *zai* was already a locative preposition in EAC should also admit that this *zai* might not have disappeared during LAC, as there are cases of *zai* which are not different from those which are cited for the EAC period and which were interpreted as prepositions, as in:

15. 在 邦 無 怨…… 在 家 無

(be) at - principality - negation - complain - ... at - family - negation -

怨… (論語：顏淵)

complain

Nobody will complain (of you) in the principality... Nobody will complain (of you) in the family.

However, as I admit that *zai* was not yet a locative preposition in EAC, I necessarily will also admit that *zai* was not a locative preposition in LAC.⁸ None of the 57 cases of *zai* in the *Mengzi* is a preposition; and the situation is the same for the 46 *zai* in the *Lun yu*, and for the *zai* in *Han Feizi*. All of them are verbs. He Leshi (personal communication) still considers that 37 *zai* in the *Zuo zhuan* should better be interpreted as prepositions than as verbs,⁹ but most of these cases are non-locative *zai*. We have only three or four possible *zai* locative prepositions for 1833 locative prepositions *yu*. Thus, it would be preferable to admit that they might be exceptions (or from interpolated passages), that *zai* was not yet a locative preposition in LAC and that *yu* was the only locative preposition.

Everybody would also agree that, unlike some other prepositions like *yi* 以, this *yu* had a rigid postverbal position. There are also, of course, some cases of preverbal *yu*, but they are very rare. Some of these examples are:

16. 宋…… 于 周 爲 客 (左傳：僖・二十四)

Song - ... at - Zhou - be - host

Song... was a host at Zhou.

8 For some arguments to treat *zai* as a verb and not as a preposition, see Wei (1993).

9 The figures given in He (1985) are slightly different from the ones given by the same author today. According to her, out of these 37 *zai*, 20 are preverbal and only 17 postverbal. Example of preverbal *zai* is:

在 齊 聞 之 (左傳：昭・十)

(be) at - Qi - hear - it

(He) heard of it when (he was) in Qi.

As we can see, *zai*, here, could also be interpreted as a verb.

17. 子 于 鄭 國 棟 也 (左傳：襄·三十一)

Master - at - Zheng - kingdom - beam - final particle

The Master is a beam to the Kingdom of Zheng.

Sun (1987) counts 41 postverbal *yu* and none preverbal in the 'yin gong' chapter of the *Zuo zhuan*; 39 postverbal *yu* and only one preverbal in the 'lianghui shang' chapter of the *Mengzi*.¹⁰ He Leshi (personal communication) has only found five cases of preverbal *yu*, out of 1833 locative *yu*. Thus, *yu* was obviously not a possible preverbal preposition in LAC. It was postverbal and, as in EAC, it was used in this postverbal position, either for the location of the action (see examples 13 and 14) or for the location of a participant of the action, as in:

18. 移 其 民 于 河 東 (孟子：梁惠王·上)

transfer - their - people - to - river - east

(They) transferred their people on the eastern side of the river.

3. Pre-Medieval or Han Chinese (2nd B.C. - 3rd A.D.)

For the Pre-Medieval or Han Chinese, it seems desirable to distinguish two periods: Early Han period (206 B.C. - 25 A.D.) and Late Han period (25-225 A.D.).

3.1. Early Han

The situation of the locative prepositions during the Early Han period is not much different than the one prevailing during the Late Archaic period.

10 As for the preposition *yi*, he found that preverbal *yi* are more numerous than postverbal *yi*. His findings might contradict those who think that the PP were only postverbal in Classical Chinese. Cf. also Sun (1991).

The common locative preposition is still *yu*, and it is still almost always postverbal. In the 8th and 9th volumes of the *Shi ji* (Zhonghua shuju edition), there are 448 locative *yu*: 439 are postverbal and only 9 are preverbal.¹¹ Some examples of *yu* (preverbal in 19 and 21, postverbal in 20) are:

19. 呂后 側 耳 于 東 箱 聽
Lü - Empress - incline towards - ear - at - east - chamber - listen

(史記：p. 2677)

Empress Lü inclined (her) ear towards the eastern chamber and listened.

20. 種 瓜 于 長安 城 東 (史記：p. 2017)
plant - melon - at - Chang'an - city - east

(He) planted melons on the eastern side of the Chang'an city.

21. 君 于 越 爲 貴 公子 (史記：p. 2444)
you - at - Zhao - be - noble - prince

You are a noble prince in the Kingdom of Zhao.

The examples of preverbal *yu* are indeed too rare and scattered to allow us to assume that the moving of the locative preposition *yu* from a postverbal position to a preverbal position already began during the Former Han. These preverbal *yu*-PP were probably marked, i.e. they expressed a kind of emphasis.

The occurrences of the preposition *zai* are also very rare in the *Shi ji*. I checked all the 875 *zai* in the *Shi ji* and found that they are almost all verbal. I found only 39 which might accomodate any possible prepositional interpretation, half of which being preverbal and the other half being

11 These figures have been provided to me by He Leshi. According to He (1984), there are 105 preverbal *yu* for 405 postverbal *yu* in the volume 8 of the *Shi ji*, but the non-locative *yu* were also counted. See also He (1985).

postverbal.¹² Some examples of possible preposition *zai* are:

22. 左 外 不 戰 (史: p. 1328)

(be) at - outside - negation - fight

(He) did not fight outside.

23. 降 者 言 張 勝 亡 在
capitulate - the one who - say - Zhang Sheng - take refuge - (be) in -
匈奴 (史: p. 2639)

Xiongnu

The capitulator said (that) Zhang Sheng took refuge in (the land) of the Xiongnu.

24. 是 時 桓 楚 亡 在 澤 中
that - time - Huan Chu - take refuge - (be) at - marsh - in
(史: p. 297)

At that time Huan Chu was took refuge in the marsh.¹³

Almost all these *zai* could be interpreted as verbs as well, even when they are postverbal and directly attached to a verb, as in 23 or 24.¹⁴ Zhu Minche (1958) might be right when he supposes that the structure V + *zai* + NP was a serial verb construction V1 + V2 where V is V1 and *zai* is V2.¹⁵

Thus, it would be preferable to consider that *zai* was still a verb and had not yet become a locative preposition during the Former Han.

12 He Leshi (personal communication) found 44 locative prepositional *zai* in the *Shi ji*: 29 postverbal and 15 preverbal.

13 There are fifteen similar cases of *wang* + *zai* in the *Shi ji*.

14 These *zai*, by the way, at times, alternate with *ru* 入 "euter". Most of the postverbal *zai* are attached to a precedent verb. There are only two cases of V1 + NP1 + *zai* + NP2 where an object is found between the verb and *zai*.

15 For Yu (1987), the first appearance of the "V + *zai* + Locative noun" structure is found in *Lun Heng*.

3.2. Late Han

The situation probably changed during the Late Han, as far as the locative preposition *yu* is concerned. The common locative preposition is still *yu*, but we have, from then on, many occurrences of preverbal *yu*, which was not the case in Archaic Chinese or under the Early Han. In the Late Han Buddhist translations, there are as many preverbal locative *yu* (as in 25) than postverbal ones (as in 26):

25. 于 空 中 作 音 樂 (T. 224, p. 477)

at - air - in - make - music

In the air (they) made music.

26. 人 有 過 于 大 王 所 (T. 224, p. 471)

man - have - transgression - at - great - king - place

(If) a man committed a transgression at the Great King's dwelling place.

The postverbal *yu* is still used for the location of the action or for the location of a participant of the action, while the preverbal *yu* - which is a new construction - is only used for the location of the action. As for the locative preposition *zai*, very rare occurrences of *zai* can be found, in contradiction to what is said by Dobson (1964) or Huang (1978) who assert that the preposition *zai* resuscitated during the Late Han and began then to replace *yu*.

I did not find one single example of a locative preposition *zai*, either preverbal or postverbal in eight Buddhist translations from the Late Han.¹⁶

16 I checked the eight following texts, out of the 29 texts that Zurcher (1977) identifies as unquestionably from the Late Han period (the translations were done at Luoyang between 150 and 220): *Chang ahan shi baofa jing* (Taisho 13, vol.1, 233-241); *Ren benyusheng jing* (T.14, 1, 241-246); *Yiqie liu she shouyin jing* (T.31, 1, 813-4); *Si di jing* (T.32, 1, 814-6); *Ben xiang yi zhi jing* (T.36, 1, 819-

Some cases of possible locative prepositional *zai* found in Zürcher (1977) are:

27. 皆 閉 在 牢獄 (T. 224, p. 471)
all - lock - (be) at - jail
(They) are all locked in jail.
28. 不 復 還 在 世 間 (T. 14, p. 244)
negation - again - return - at - world - in
(He will) not return to the world any more.

Moreover, the ex. 27 could still be analyzed as a serial verb construction V1 + V2 where V2 is the locative verb *zai*. *Zai* then could not be a preposition.

Thus, under the Late Han, only one obvious important change occurred: the moving of postverbal locative prepositional *yu* to a preverbal position. Such a change probably occurred by analogy with a situation where other PP were already preverbal since Archaic Chinese: the PP involving the prepositions *zi* 自, *yi* 以, *wei* 爲, etc...

As shown by Wei (1993), this moving of *yu* in preverbal position is probably not linked to the constraints dealing with the number of PP allowed behind the verb. I do not think neither that one could suppose that the form "*yu* + Locative NP + V" developed during the period by analogy with a similar form which could already have existed in the oracle bone inscriptions and which could then have disappeared during a very long period of historical time. First of all, the *yu*-PP were mostly postverbal in the oracle bones incipations, unless they expressed time and not place (see Shen Pei, 1990). Secondly, the principle of analogy can difficultly be evoked when it is a matter of linking two forms which are separated by more than

820); *Shifa feifa jing* (T.48, 1, 837-9); *Lou fenbu jing* (T.57, 1, 851-3); *Pu fayi jing* (T.98, 1, 922-4).

1500 years.

Another change might have also occurred during the Han: the spread of a serial verb construction involving the locative verb *zai*, either in preverbal position (V1 *zai* + NP1 + V2 + NP2) or preferably in postverbal position (V1 (+ NP1) + V2 *zai* + NP2). This structure already existed since Early Archaic Chinese, as we have seen, but it was rare. However, this spread, which has been independant of the moving of the preposition *yu* and which might have been a very good illustration of what is called "strengthening of informativeness" by Traugott & König (1991),¹⁷ would probably be better dated from the Early Medieval period, as there were in the Han period too few examples of real serial verb construction involving the locative verb *zai* (in V1 or in V2 position) to allow us to admit that the construction was already widespread.

4. Early Medieval Period (3rd-6th A.D.)

As Chang Li-li (1987) points out, in the *San guo zhi* (ca. 4th century A.D.), most locative PP are still postverbal PP in *yu*, as in:

29. 太祖 崩 于 洛陽 (p. 294)

Taizu - pass away - at - Luoyang

Taizu passed away in Luoyang.

30. 各 令 部人 于 戰 處 及 水 次
respectively - order - follower - at - battle - field - and - river - bank -

鉤 求 屍喪 (p. 134)

look for - corpse

17 For another case of "strengthening of informativeness" in Chinese, see Peyraube (1988b).

They respectively ordered their followers to look for the dead bodies in the battle field and along the river bank.

There are also locative phrases involving *zai*, either preverbal, as in 31 or postverbal, as in 32, but, as it was the case for the Han period, *zai* is probably still a verb and not a preposition, for the occurrences are still rare:

31. 陳 登... 在 廣陵 有 威 名 (p. 299)

Chen Deng - ... (be) at - Guangling - have - prestigious - reputation

Chen Deng... was widely respected in Guangling.

32. 淵 自 督 糧 在 后 (p. 271)

Yuan - personally - take charge of - provision - (be) at - rear

Yuan personally took charge of the provisions in the rear.

The situation, for the first quarter of the *San guo zhi*, as reported by Chang (1987) is as follows:

V (+ NP) + *yu* + NP: 286 occurrences

yu + NP + V (+ NP): 20 occurrences

V (+ NP) + *zai* + NP: 7 occurrences

zai + NP + V (+ NP): 4 occurrences

It might seem strange that there are so few preverbal *yu*, comparing to the Late Han period where the preverbal *yu* were as many as the postverbal ones. This situation could probably be explained by the fact that the *San guo zhi* is essentially written in Classical Chinese which has retained a syntax somewhat frozen in the Warring States period (5th - 3rd c. B.C.). On the contrary, the numerous instances of preverbal *yu* which are found in the Late Han Buddhist texts reflect the vernacular Chinese of that time.

In other texts from Early Medieval Chinese, which are much more vernacular than the *San guo zhi*, we find a situation which is similar to the Late Han period. Thus, in *Shi shuo xin yu* (5th century A.D.), of the 170 *yu*

introducing a locative NP, one can count 65 preverbal *yu* for 105 postverbal *yu*. However, most of the postverbal *yu* do not express the general location of the action, but rather express a resultative location.¹⁸ A similar proportion of preverbal and postverbal *yu* can be found in *Bai yu jing* (5th century A.D.). Some examples of preverbal and postverbal *yu* in the *Shi shuo xin yu* are:

33. 于 本 母 前 宴飲 (世：方正)
 at - Ben - mother - in front of - feast
 (They) feast in front of Ben's mother.
34. 載 王 于 車 而 殺 之 (世：仇隙)
 carry - king - at - carriage - and - kill - him
 (He) carried the king in the carriage and killed him.

One can also find in *Shi shuo xin yu* many more locative sentences with *zai* than in *San guo zhi* or during the Han: in all of the 104 locative *zai*, 91 are preverbal and 13 postverbal.¹⁹ Some examples are:

35. 母 王 夫人 在 壁 后 聽 之 (世：文學)
 mother - Wang - lady - (be) at - wall - behind - listen - them
 (His) mother Lady Wang was behind the wall listening to them.
36. 在 船 中 彈 琴 (世：言語)
 (be) at - boat - in - play - lute
 (He) was in the boat playing a lute.

18 Slightly different figures are given in Zhan (1973). She counts 165 locative PP in *yu* out of 275 *yu*, 107 of them being used for the general location. 77 are equivalent to Contemporary Chinese *zai* (44 preverbal and 33 postverbal) and 30 are equivalent to *cong* 'from', thus expressing the source.

19 Different figures are given in Zhan (1973): 124 locative PP in *zai*, 103 preverbal and 21 postverbal, 12 of which are also indicating the general location. Liu (1986) also counts 124 locative PP in *zai*, 112 of which are preverbal.

37. 簡文 在 暗 室 中 坐 (世：言語)
Jianwen - (be) at - dark - room - in - sit
(Emperor) Jianwen was (once) sitting in a dark room (when)...
38. 吳 道助 附子 兄弟 居 在 丹陽 (世：德行)
Wu Daozhu - Fuzi - brothers - live - (be) at - Danyang
Wu Daozhu and Fuzi, the two brothers, lived in Danyang.
39. 沒 在 水 下 (世：汰侈)
sink - (be) at - water - under
Sink under the water.

All the preverbal *zai* indicate general location and half of the postverbal *zai* also indicate a general location whereas the other half indicate a resultative location.

Are these *zai* still verbs or have they become prepositions? I think that it should be better to consider them still as verbs used in serial verb expressions where *zai* is V1 or V2 depending on whether it is preverbal or postverbal. It is difficult to propose really convincing arguments for either the verbal or the prepositional solution. It may seem risky to consider *zai* as a verb while it is directly attached to a preceding verb as in 38 or 39 (V + *zai* + Locative noun). But such examples are afterall very rare and many postverbal *zai* are also found in the form "V + NP + *zai* + Locative NP", which leads one to suppose that *zai* is still a verb (This is the argument that Yu (1987) gives).

A much better reason, in my opinion, for arguing in favour of *zai* as a verb rather than as a preposition is the existence at the same time of a concurrent locative structure using *zhuo* 著 in the place of *zai*: "V (+ NP) + *zhuo* + Locative NP". This form, which did not exist under the Han, is very

common in Early Medieval:²⁰ one can find 7 examples in *Shi shuo xin yu*, 8 examples in *Bai yu jing* (for 8 cases of "V + *zai* + Locative noun" and 7 cases of "*zai* + Locative noun + V") and, according to Wei (1993), there are many more of locative *zhuo* than of locative *zai* in Buddhist texts of the period. This *zhuo* is always postverbal. Some examples are:

40. 其 身 坐 著 殿 上 (T.3 · 6 下 · 六度集經)
his - body - seat - at - palace - on
His body is seated in the palace.
41. 長文 尙 小， 載 著 車 中 ……文若 亦
Changwen - still - young - carry - at - carriage - in - ... Wenruo - also -
小， 坐 著 膝 前 (世：德行)
young - sit - at - lap - on
Changwen was still young and was carried in the carriage ...Wenruo was also small and was seated on the lap.
42. 索 美 酒， 得， 便 自 起，
ask for - fine - wine - obtain - then - himself - rise -
鴻 著 梁 柱 間 地 (世：規箴)
pour - at - pillar - beam - between - ground
(He) asks for fine wine and obtained it. Then he rose and pour (the wine) on the ground between the pillars.
43. 負 米 一 斗， 送 著 寺 中
carry on the back - rice - one - bushel - deliver - at - temple - in
(T.3 · 23 下 · 六度集經)
(He) carried one bushel of rice on his back and delivered it to the temple.

20 It could even be, as Yu (1987) supposes, that "V + *zai* + Locative noun" became common after the appearance of "V + *zhuo* + LN", in other words, this last form might appear before the first one.

44. 可 擲 門 外 (世：方正)

can - throw - at - door - out

(It) can be thrown out of the door.

45. 口 中 含 嚼， 吐 著 掌 中 (百喻經·上)

mouth - inside - hold - chew - spit - at - palm - in

(He) chewed it inside the mouth and then spit it out into his palms.

Wei (1993) notes that verbs preceding *zhuo*, in whatever form ("V + NP + *zhuo* + Locative noun" or "V + *zhuo* + Locative noun") are all transitive verbs whereas those which are used in locative constructions with *zai* are intransitive. This dividing up does not seem to be appropriate. There are effectively transitive verbs used with *zai*, particularly all the "V + NP + *zai* + Locative noun" forms, as there are also intransitive verbs with *zhuo* (cf. examples 40 or 41 where the verb is *zuo* 'to sit').

Mei (1988) distinguishes two types of verbs which could precede this *zhuo*: static verbs (cf. 40 and 41), in which case *zhuo* is the equivalent of *zai* in Contemporary Chinese, and dynamic verbs, in which case *zhuo* is the equivalent of *dao*.

In fact, one can estimate that one is dealing with a resultative location, which explains why locative sentences with *zhuo* are always postverbal. *Zhuo* is essentially the equivalent of *dao* and the preceding verb is almost always a verb of destination (cf. Wei (1993) for a list of these verbs).

It is unlikely that this *zhuo* is already a locative preposition, as Mei (1988) supposes. It still retains its original verbal meaning: "to attach to" or rather "to dispose" (cf. Wei (1993)).

Thus, in Early Medieval, one has a transitory situation where the location is still expressed by *yu*, but also by *zai* and *zhuo* which structures develop considerably in this period. The semantic principle of Tai (1976)

begins to operate effectively, even though it is not yet as strict as in Contemporary Chinese. With *yu*, if the general location is still expressed either by preverbal *yu*, or by postverbal *yu*, the resultative location naturally and always uses postverbal *yu*.

But the most interesting for this period is the competition between *zai* and *zhuo*. *Zai*, above all preverbal, expresses the general location, although in certain cases, when it is postverbal, it can also express the resultative location. *Zhuo*, always postverbal, expresses exclusively the resultative location.

This competition between *zai* and *zhuo* is a good illustration of the third heuristic principle (specialization) provided by Hopper (1991) who formulates it as follows: "Within a functional domain, at one stage a variety of forms with different semantic nuances may be possible; as grammaticization takes place, this variety of formal choice narrows and the smaller number of forms selected assume more general grammatical meanings".

It is therefore this coexistence of *zai* and *zhuo* which makes us suppose that the grammaticalization of *zai* has not yet occurred.

5. Late Medieval Period (7th-13th A.D.)

Coming to the Late Medieval period, *zhuo* will soon disappear progressively and *zai* will replace *zhuo* and assert itself, both in preverbal position to express the general location and in postverbal position for the resultative location. Thus, in the first volume of *Dunhuang bianwen ji* (Wang Chongming edition, 1958, Renmin chubanshe) of the 9th and 10th centuries A.D., there are 107 postverbal locatives *zai* (and 40 preverbal *zai*) for only 8 *zhuo* in the

two volumes.²¹ In *Zu Tang ji* (952), locative sentences are all introduced by *zai* (47 preverbal and 25 postverbal) and not by *zhuo*. Some examples are:

46. 弟子 只在 西 邊 村 居 住 (敦煌變文 p. 168)
disciple - at - west - side - village - in - live

I (your disciple) live on the western side of the village.

47. 把 舜子 頭髮 懸 在 中廷 樹 地
object marker - Shunzi - hair - hang - at - courtyard - tree - ground
(敦 p. 131)

(She) hung the hair of Shunzi on the tree in the courtyard.

48. 今 夜 在 此 宿, 還 得 摩?
this - night - at - here - spend - could be - possible - final particle
(祖堂集 2.005.9)

Could (I) spend the night here?

49. 千 丈 之 線 寄 在 碧 潭
thousand - *zhang* - determinative particle - thread - store - at - green -
pond
(祖堂集 2.088.4)

Threads of thousand *zhang* are stored in the green pond.

The process of lexical unification (*zhuo*, *zai* > *zai*) being achieved, one can legitimately suppose that the grammaticalization of the locative verb *zai* to locative preposition *zai* has been in effect. This process has obviously taken a long time to realize and *zai* remained as a verb for still several more centuries. Thus in the following example, *zai* is probably a verb because it is coordinated to another verb:

21. *Zhuo* was also used as durative suffix in the 'bianwen'. See Mei (1988).

50. 君子 是 何 處 之 人？ 姓名 是
you - be - what - place - determinative particle - people - name - be -
甚？ 在 此 而 坐 (敦 p. 160)
what - be at - here - and - sit

Where are you from? What is your name? (Please come) here and sit.

This evolution of things is also in accordance with Hopper's (1991) grammaticalization's second heuristic principle (Divergence) which represents an universal diachronic tendency and offers a discovery procedure by which changes can be described: "When a lexical form undergoes grammaticization to a clitic or affix, the original lexical form may remain as an autonomous element and undergo the same changes as ordinary lexical items".

Similarly, these new PP in *zai* still coexist with the PP in *yu* which still remain, in this period, the most commonly used: 204 locative *yu* (112 postverbal and 92 preverbal) in the first volume of *Dunhuang bianwen ji* and 229 locative *yu* (106 postverbal and 123 preverbal) in *Zu Tang ji*. Some examples are:

51. 舜子 便 于 泥 罇 中 置 銀錢 (敦 p. 132)
Shunzi - then - at - clay - pot - in - put - money
Shunzi then put money in the clay pot.
52. 忽 見 一 人 臣 于 荒 郊 (敦 p. 293)
suddenly - see - one - person - lie - at - desert - countryside
Suddenly (he) saw one person lying in the deserted countryside.
53. 民 多 于 是 處 祈 求 雨澤
people - most - at - this - place - pray - ask for - rain

(祖堂集 2.008.06)

The people then mostly come to this place to pray for rain.

54. 須 與 山 獸 口 銜 餅食 放 于
short while - mountain - beast - mouth - hold - cake - deposit - at -
座 側 (祖堂集 5.013.14)
seat - side

After a short while, the mountain beast hold a cake in its mouth and put it on the side of the seat.

This is also in accordance with Hopper's (1991) first heuristic principle called "Layering": "Within a broad functional domain, new layers are continually emerging. As this happens, the old layers are not necessarily discarded, but may remain to coexist with and interact with the new layers".

We have to wait till the premodern period, or even the modern period for *yu* to be almost definitely abandoned in favour of *zai*. Thus in *Jin Ping Mei cihua* (end of 16th century) , we have 1378 locative *zai* (of which 750 are preverbal and 628 postverbal) for only 58 locative *yu* (14 preverbal and 44 postverbal).

Conclusion

A few conclusive remarks can be developed from this historical study:

1. Contrary to what Dobson (1964) or Huang (1978) suppose, *zai* is not yet a locative preposition in EAC, but still a verb. The locative preposition in EAC is *yu* and it is postverbal, either for the general location or for the resultative location. In LAC and during the Former Han, the situation is the same.

2. Under the Late Han, one obvious important change occurs which is the moving of postverbal locative preposition *yu* to a preverbal position: V + *yu* + Locative NP > *yu* + Locative NP + V. Such a change probably occurred by analogy with other PP (in *wei*, *zi* or *yi*) which have already been

preverbal since many centuries.

3. The locative phrases involving *zai* and *zhuo* develop considerably during the Wei Jin Nan-Bei Chao period and the semantic principle provided by Tai (1975) begins to operate. *Zai*, above all preverbal (*zai* + NP1 + V (+ NP2)), expresses the general location, but it can also express the resultative location in some cases, when it is preverbal. *Zhuo*, always postverbal (V (+ NP) + *zhuo* + LNP), expresses exclusively the resultative location. The coexistence and competition of *zai* and *zhuo*, which is a good illustration of Hopper's third heuristic principle of grammaticalization makes us suppose that *zai* and *zhuo* are still verbs. The spreading of such serial verbs constructions involving *zai* or *zhuo* was independant of the evolution of *yu* and especially of its moving to the preverbal position. As the other serial verb expressions which have developed during the same period or earlier under the Han (cf. Peyraube, 1988a, pp. 144 *sq.*), this spreading is the result of a need of what Traugott calls "strengthening of informativeness".

4. During the Late Medieval period, *zhuo* disappears progressively and *zai* asserts itself in the postverbal position to express the resultative location. This is a simple lexical replacement *zhuo* > *zai*. This lexical unification was the prelude to the grammaticalization of *zai* [+ V] to *zai* [+ Prep], which one can date, for the beginning of the process, from around the 8th century.

Incidentally, one can also note that this grammaticalization occurs more or less in the same period where one can see the happening of the other grammaticalizations concerning 1) the disposal construction; 2) the comparative construction; 3) the dative construction; 4) the construction with a perfective aspectual particle. This coincidence in time is probably not merely an accident (see A. Peyraube, 1988b).

(Accepted for publication 13 August 1992)

BIBLIOGRAPHICAL REFERENCES

- Chang L.-l. (1987), "A Study of the Language of San-Guo Jr", MA thesis, Fujen Catholic University, Taipei.
- Chen M.-j. 陳夢家 (1956), 《殷墟卜辭綜述》，北京：科學出版社。
- Djamouri R. (1987), "Etude des formes syntaxiques dans les ecrits oraculaires grave sur os et carapaces de tortue", Paris: These de l'Ecole des Hautes Etudes en Sciences Sociales.
- Dobson W.A.C.H. (1962), *Early Archaic Chinese*. Toronto: University of Toronto Press.
- Dobson W.A.C.H. (1964), *Late Han Chinese*. Toronto: University of Toronto Press.
- He L.s. 何樂士 (1984), 〈史記語法特點研究〉，程湘清主編，《兩漢語法研究》，山東教育出版社。
- He L.s. 何樂士 (1985), 〈‘左傳’，‘史記’介賓語位置的比較〉，《語言研究》1。
- Hopper P.J. (1991), "On Some Principles of Grammaticization", E.C. Traugott & B. Heine eds., *Approaches to Grammaticalization*. John Benjamins B.V.
- Huang S.-f. (1978), "Historical change of prepositions and Emergence of SOV order", *Journal of Chinese Linguistics* 6.
- Li C.N. & Thompson S.A. (1974), "An Explanation of WO Change SVO --> SOV", *Foundations of Language* 12-2.
- Li C.N. & Thompson S.A. (1976), "Development of the Causative in Mandarin Chinese: Interaction of Diachronic Processes in Syntax", Masayoshi Shibatami ed., *Syntax and Semantics, The Grammar of*

- Causative Constructions* 6. New York: Academic Press.
- Li C.N. & Thompson S.A. (1981), *Mandarin Chinese, A Functional Reference Grammar*. Berkeley & Los Angeles: University of California Press.
- Li Y.-c. (1980), "The Historical Development of the Co-verb and the Co-verbial Phrase in Chinese", *Journal of Chinese Linguistics* 8.
- Liu S.-z. 柳士鎮 (1986), 〈世說新語句法特點初探〉, 《語言研究集刊》, 江蘇教育出版社。
- Mei T.-l. 梅祖麟 (1988), 〈漢語方言裡虛詞‘著’字三種用法的來源〉, 《中國語言學報》3。
- Peyraube A. (1977), "Adverbiaux et complements de lieu en Chinois", *Cahiers de Linguistique Asie Orientale* 1.
- Peyraube A. (1988a) *Syntaxe diachronique du chinois, Evolution des constructions datives du 14e siecle av. J.-C. au 18e siecle*. Paris: College de France.
- Peyraube A. (1988b), "Syntactic change in Chinese: on Grammaticalization", *Bulletin of the Institute of History and Philology* 59.3.
- Serruys P.L.M. (1981), "Towards a Grammar of the Language of the Shang bone inscriptions", 《中央研究院國際漢學會議論文集・語言文學組》。
- Shen P. 沈培 (1990), 〈殷墟甲骨卜辭介詞結構語言序研究〉, 《綴玉集・北京大學中文系研究生論文選編》, 北京大學出版社。
- Sun C.-f. (1987), "The Syntactic Behaviours of the Classical Chinese Prepositions", 20th Sino Tibetan Conference. University of California, Berkeley.
- Sun C.-f. (1991), "The Adpositions *yi* and Word Order in Classical Chinese", *Journal of Chinese Linguistics* 19-2.
- Tai, J.H.-Y. (1975), "On the two functions of place adverbials in Mandarin Chinese", *Journal of Chinese Linguistics* 3-2.

- Tai, J.H.-Y. (1976), "On the Change from SVO to SOV in Chinese", S.B. Steever, C.A. Walker & S.S. Mufwere eds., *Papers from the parasession on diachronic syntax*. Chicago Linguistic Society.
- Traugott E.C. & König E. (1991), "The Semantics-Pragmatics of Grammaticalization Revisited", E.C. Traugott & B. Heine eds., *Approaches to Grammaticalization*. John Benjamins B.V.
- Wei P.-c. 魏培泉 (1993), 〈古漢語介詞‘於’的演變略史〉, 《中央研究院歷史語言研究所集刊》62.4。
- Yu G.z. 俞光中 (1987), 〈‘V在NL’的分析及其來源獻疑〉, 《語文研究》3。
- Zhan X.-h 詹秀惠 (1973), 《世說新語語法研究》, 台北: 學生書局。
- Zhu M.-c 祝敏澈 (1958), 〈先秦兩漢時期的動詞補語〉, 《語言學論叢》2。
- Zurcher E. (1977), "Late Han Vernacular Elements in the Earliest Buddhist Translations", *Journal of the Chinese Language Teachers Association* 12.3.

On the Mechanisms and Constraints in Syntactic Change: Evidence from Chinese Dialects

Feng-fu Tsao

National Tsing Hua University

Frank Parker (1976) has proposed a basic paradigm for syntactic change as follows: (a) change can come about when a speaker forms hypothesis in constructing a grammar; (b) since more than one hypothesis can be formed to account for a single piece of data, 'mis-assignment of constituent structure' (MCS) can take place; and (c) a deviant hypothesis may be formed by a speaker and a corresponding rule retained in his grammar if (1) it doesn't violate a linguistic universal, and (2) it doesn't change meaning.

Parker's paradigm was based on his analysis of the phenomenon that many Indo-European verbs inflected in the middle voice have taken on passive meaning. In this paper various attested changes from archaic Chinese into ancient Chinese and from ancient Chinese into Mandarin and Southern Min dialects are carefully examined in the light of Parker's paradigm.

Parker's chief mechanism, namely, 'mis-assignment of constituent structure' is found to be too restrictive and should be expanded to include 're-alignment of thematic roles' in some cases. It is proposed that the general form of the mechanism be called 'mis-analysis of structure'. The two constraints, which Parker posited without much explanation, are also examined and discussed in all these cases of syntactic change and their implications for linguistic theory in general and theory of linguistic change in particular are finally drawn.

1. Parker's Theory of Syntactic Change

Frank Parker (1976:453) has proposed a basic paradigm for syntactic change as follows: (a) change can come about when a speaker forms hypothesis in constructing a grammar; (b) since more than one hypothesis can be formed to account for a single piece of data, 'mis-assignment of constituent structure' (MCS) can take place; and (c) a deviant hypothesis may be formed by a speaker and a corresponding rule retained in his grammar if (1) it does not violate a linguistic universal, and (2) it does not change meaning.¹

It is clear from the above statement that the mechanism of change Parker has in mind is MCS. In the same article Parker (op.cit.:450) further explains how MCS may come about:

one speaker may assign a structural description (SD) to an utterance that is in some way different from the SD assigned by another speaker. If a speaker internalized a rule based on a deviant SD, and the rule spreads, then the language will begin to show signs of change.

MCS, naturally, cannot be a totally unconstrained notion, for any linguistic theory of change will have to subject to such more general constraints as the following: (1) the new rule must be learnable and (2) the change will not disrupt communication between speakers of the same language. This explains clearly why Parker has to add the two constraints in the above quotation.

Now Parker's theory is by no means the most up to date neither is it

1 Although Parker uses the term "linguistic change", we know that his discussion is exclusively about syntactic change. We will, therefore, call it a theory for syntactic change.

the most comprehensive. This is quite evident when we compare his theory with that of Lightfoot's. Lightfoot (1979:149-50) proposes an "impoverished" theory of change, which can be summarized by the following four statements: (a) communication must be preserved between generations; (b) grammar practices therapy rather than prophylaxis; (c) less highly valued grammars are liable to reanalysis; and (d) certain therapeutic changes are more likely than others.

While it is quite obvious that Lightfoot's formulation is more general and more up to date in terms of its correspondence to a newer grammatical model, I still prefer Parker's theory to that of Lightfoot's. My preference is based on the following two reasons. First, all of the cases that we will discuss are isolated changes scattering over different Chinese dialects and different periods of time. So it is difficult to see from these isolated cases how each change was related to the overall communication picture of the language at the time when the change occurred. Second, while it is difficult enough to compare two grammatical descriptions of a live language where we have speakers' intuition to fall back on, it is even more so to speak of evaluating a grammar of an ancient language. To put it in slightly different terms, by choosing Parker's model over that of Lightfoot's, we make it clear that our concern will be strictly local, i.e. we will not be involved with how a change interacts with other changes occurring at about the same time. Neither will we be concerned with speculation as to what motivates a change in the first place.

With the theory now understood in its proper perspective, we will proceed with our main pursuit. Parker's paradigm was based on his analysis of the phenomenon that many Indo-European verbs inflected in the middle voice have taken on passive meaning. In what follows, we will re-examine

previous studies of syntactic changes from archaic Chinese into ancient Chinese and from ancient Chinese into Mandarin and Taiwanese dialects by myself as well as by other researchers in the light of Parker's theory. We will suggest, after a careful examination of all the data, how his mechanism can be refined to deal with cases of change not involving MCS and how his constraints can be more precisely formulated.

2. Mechanisms and Constraints in Change: Some Chinese Cases

In this section we will examine a number of syntactic changes that have been claimed to have taken place by a number of researchers, myself included, in the light of Parker's paradigm. We will begin with four cases where the mechanism of constituent reanalysis (Parker's MCS) seems to be involved.

2.1. Cases Involving Constituent Reanalysis

2.1.1. The origin of the *bei* passive construction

Various researchers (Wang, 1980; Bennett, 1981; Ohta, 1986; Chu, 1987; Peyraube, 1989 and Wei, 1991) seem to agree pretty well on the developmental sequence of the *bei* passive. First, *bei* was used as a transitive verb meaning, roughly, 'receive' and taking a noun as its object. Then during the latter half of the Warring States Period (403-221 B.C.), *bei* was reanalyzed as a passive verb marker, probably on analogy with *jian* passive marker, which, according to Chu (1987:113), appeared as early as around 300 B.C.² This

2 The term "passive verb marker" is coined by the writer. Chu (1987) calls it "passive voice marker", Ohta (1986) regards it as an auxiliary verb and Bennett does not give it any name.

hypothesis is further confirmed by the following sentence found in *shi-ji* (Historical Records), where *bei* and *jian* work parallelly as passive verb markers.

- (1) xin er jian yi, zhong er bei bang
faithful but JIAN suspect loyal but BEI slander
neng wu yuan hu?³
can no complaint PART

‘Can anyone go without complaint if he is suspected and slandered when actually he is faithful and loyal?’

The final stage of development was reached when an agent phrase was added between *bei* and the verb. This change was found in Eastern Han and came to be fully accepted by the time of *Shishuo Xin Yu* written around the fifth century A.D. (Wang, 1980:427), as exemplified by the following sentence.

- (2) Liangzi bei Su Jun hai⁴
Liangzi BEI Su Jun harm
‘Liangzi was harmed by Su Jun.’

3 The following is a list of abbreviations used in the English gloss:

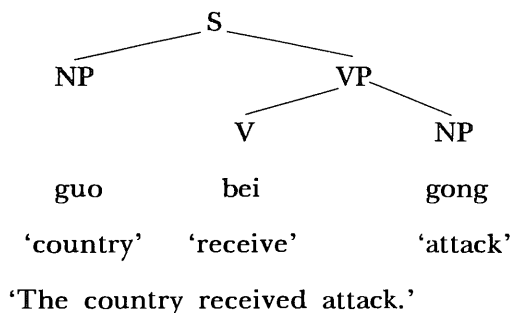
| | |
|--------------------|-----------|
| CL: classifier | S: source |
| ASP: aspect marker | G: goal |
| PART: particle | A: agent |
| P: patient | |

When no appropriate gloss can be given as is the case of some function words, the Chinese word in capitalization is given in the gloss.

4 Most grammarians take the *bei* as occurring in (2) simply as an agent marker equivalent to English *by*, but Tsao (1990), examining it from both synchronic and diachronic perspectives, has argued that in modern Mandarin there are two *bei*'s serving the functions of an agent marker and a passive verb marker respectively, but when they both occur in the same sentence, the passive verb marker *bei* is deleted due to the principle of hapology.

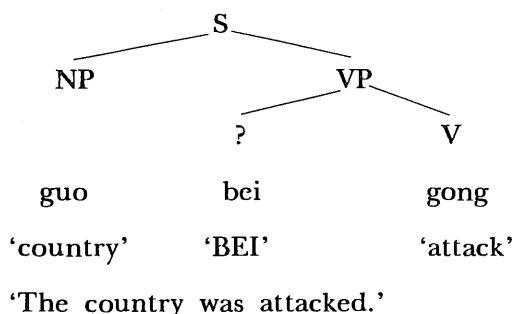
Both Ohta and Bennett have proposed that the process of change that occurred first at the stage of development, i.e. from *bei* as a main verb to *bei* as a passive verb marker, can be seen as from (3a) to (3b).

(3) a.



==>

b.



Now this step was, of course, never actually attested, but we feel confident that something like that could have actually happened. Our confidence stems from the following observations. First, because of lack of morphological marking, there was, and still is, no distinction between a verb and its de-verbalized nominal such as *gong* 'attack'.⁵ This certainly facilitates constituent reanalysis (or in Parker's term MCS) to take place. Second, since as we said earlier that *jian* passive verb marker began to emerge slightly

5 Example (3) is taken from Bennett's article. It is interesting to note that there is no morphological distinction between the verb form and the noun form of 'attack' in English. But as anyone having some knowledge of English and Chinese can readily tell you, this kind of derivational process, which is technically known as conversion, is a rule in Chinese but an exception in English.

earlier than *bei* in the similar function, it serves as a good analogy for the latter. Thirdly, such a structure is certainly learnable since we have a parallel *jian* passive.

Fourthly, the constituents undergoing reanalysis (or MCS), are adjacent, i.e. *bei* actually precedes *gong* 'attack' immediately, the latter being originally the object of the former.⁶ The insertion of the agent phrase between the two, as we have pointed out, has to wait a few more centuries.

Fifthly and finally, the reanalysis will not lead to any substantial change of meaning. This can be demonstrated by a similar example in modern Mandarin. Thus in both Li et al. (1984) and Tsao (1990), it is pointed out that *shou* and *ai*, both meaning roughly 'receive', when followed by a verb can have a passive reading as in (4).

- (4) *ta dao chu shou huanying*
 he everywhere SHOU welcome
 'He is popular everywhere.'

Now in (4) as well as in many similar sentences *huanying* 'welcome' is ambivalent between a verb and an abstract noun, very much like *gong* 'attack' in (3) is. This is quite clear when we compare (5) and (6).

- (5) *zuotian wo tai mang, suoyi mei neng lai huanying ni*
 yesterday I too busy so not able come welcome you
 'Yesterday I was too busy, so I was not able to welcome you.'
- (6) *xiexie dajia reqing-de huanying*
 thank everybody warm welcome
 'Thank you all for your warm welcome.'

The point we are making is simply that both analyses, i.e. to analyze

6 Although Parker (1976) did not make it a constraint, he actually mentioned immediate adjacency as a condition in his paper.

huanying 'welcome' as a noun or as a verb in (4) will not lead to different understanding of the situation. This then supports Bennett and Ohta's proposal that *gong* 'attack' can have received two similar analyses at that time without hurting communication.

2.1.2. The rise of the *ba* disposal sentence

A number of researchers (Ge, 1958; Wang, 1980:ch.47; Zhu, 1957; So, 1976; Cheung, 1977; Bennett, 1981) have all studied the development of the *ba* construction. There seems to be a consensus that the emergence occurred in the Tang dynasty. Furthermore, there is a fair amount of agreement as to its chronology. The construction as it evolved in Tang dynasty was based on the 'grammaticalization of two verbs *ba* 'take, hold, use' and *jiang* 'take charge of, deliver'. These two verbs as indicated in the English gloss, originally had similar but distinct meanings. In Tang dynasty, however, they merged in meaning and could be roughly glossed as 'take' (So:92), as exemplified in (7) and (8).

- (7) *ba* *jing* *kan*

TAKE mirror look

'(He) took the mirror and looked (at himself).'

- (8) *qing* *jiang* *yu* *ban* *qiao* *hua* *pian*

lightly TAKE jade stick knock flower piece

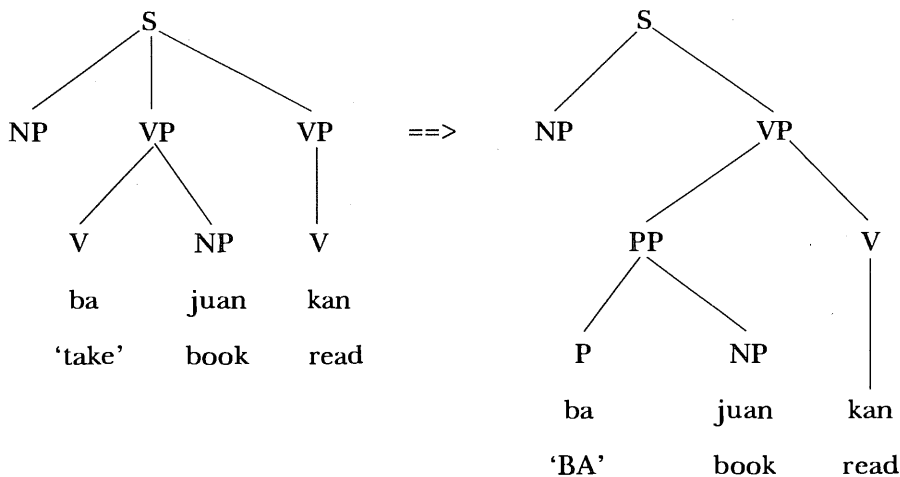
'(He) lightly struck the petals with a piece of jade.'

From (7) and (8) it is quite clear that both *ba* and *jiang* at this stage still retained their literal meaning of 'taking'. In other words, both sentences should be analyzed as serial-verb constructions in the form of S-V-NP-V-(NP). This formulation immediately reminds us of Li and Thompson's (1974) well-known claim that archaic serial verb sentences of the

form S-V-NP-V-(NP) have developed into Modern Chinese sentences of the form S-P-NP-V-(NP) through the "weakening" of the first verb into a case-marker or preposition. This claim, taken as a sweeping generalization about the rise of prepositions in modern Mandarin, has been proved to be wrong by Huang (1978) and Bennett (1978) (see Chu, 1987 and Wei, 1993, for a thorough review of the issues involved). However, as argued by Bennett (1981), this could very well be the context through which the *ba* construction arose.⁷

Specifically, Bennett (1981:67) argues that the *ba* construction in (9b) was derived from a structure like (9a).⁸

(9) a.



As Bennett himself (1981:60) suggests, the proposed reanalysis, if examined in the light of Parker's theory, looks highly plausible. Firstly, the two constituents undergoing reanalysis are immediately adjacent. Secondly, Bennett points out that in terms of meaning, there will be many situations

⁷ For a similar view see Peyraube, 1988.

⁸ Bennett also pointed out that the correctness of his proposal does not rely on the specific structures that he has posited in (9a) and (9b).

in Twi, an African language and possibly in English, where sentences such as 'John took the book and read' mean the same as 'John read the book.' A parallel change from a full verb to a preposition in a similar context actually took place in Twi.

Thirdly, as Tsao (1989, 1990), Mo (1984) and LaPolla (ms.) have all pointed out, in a serial verb construction or more generally in a topic chain, the information focus normally falls on the last comment (here the last VP), and in a simplex sentence it falls on the last lexical constituent. Given this principle, it is clear that the sentence has not changed its pattern of information distribution even though the first VP is now reduced in its status to a PP and what is originally a topic chain of two comments is now reduced to one. Actually, with regard to the second and the third points, Bennett himself has more or less the same ideas, though he did not quite put them as explicitly. Thus he comments (1981:66)

As for the development of 'take' into an object-marker, there will be many situations where a language's equivalents of 'John took the book and gave (it) to Bill' and 'John gave the book to Bill' will both be appropriate means of describing what took place. If the giving is felt to be semantically more important than the taking, then 'took' may well lose its status as a full verb (which makes it syntactically on a par with 'gave') and developed into what verbs so often developed into, an adposition.

Fourthly, as Huang (1978) and Wei (1993) have clearly shown there were prepositions that clearly occurred in the preverbal position at the time of archaic Chinese, as can be seen in the following examples:

- (10) Wu zi Wei fan Lu (Lun Yu)
Wu from Wei return Lu
'Wu returned to Lu from Wei.'
- (11) yu Wu dui zhen (Hou Han Shu)
with Wu face battle
'faced off with Wu.'

So it is perfectly clear that by Tang dynasty when the proposed reanalysis occurred both the serial verb construction and a simplex sentence containing a preverbal prepositional phrase were sentence patterns available to the speakers.

Incidentally, there is an additional requirement in this case. The second verb will have to be syntactically with a null object which is semantically construed as coreferential with the object in the first VP. This pattern is allowed only in languages like Chinese and Twi, but not allowed in languages such as English. So if we make it a requirement that both analyses, i.e. the old and the new, must be what are allowed in the particular language then we can successfully account for the fact that both Twi and Chinese gave rise to such a new construction while languages such as English have never had a change like that.

2.1.3. The rise of subject-predicate compounds

In Tsao (1982, 1990), it is claimed the subject-predicate verbal compounds such as *yan-hong* 'literally, eye-red; jealous'; *shen-qing-ru-yan* 'literally, body-light-as-swallow; agilely' and *kou-shi-xin-fei* 'literally, mouth-yes-heart-no; insincere', and hundreds of others had its origin in the so-called "double-nominative" construction. The actual process of re-analysis can be demonstrated as follows:

(12) wo duzi teng

I stomach ache

'I had a stomach-ache.'

(13) a. wo duzi teng ==> b. wo duzi teng

Topic Subject V

Topic & Subject V

The following arguments have been put forth to support the claim that the kind of verbal compound in question was originally derived from the productive double nominative constructions through reanalysis in the manner described in (13). First, the process is not yet complete. As a result, there are quite a few expressions (which I call 'semi-compounds') which are caught mid-stream, so to speak, in that they exhibit both the characteristics of a productive double nominative construction and a frozen subject-predicate compound. This can be seen by the fact that adverbs such as *you* 'again' and *ye* 'also' can be placed both before and after the second nominative while a productive double nominative construction only allows the latter position (i.e. after the second nominative) and a sentence with a frozen subject-predicate compound allows only the former position (i.e. before the second nominative). Compare (14) with (15) and (16).

(14) a. ta duzi you e le (semi-frozen compound)

he stomach again hungry PART

'His stomach is hungry again.'

b. ta you duzi e le

he again stomach hungry PART

'Same as (a).'

(15) a. zhe-ke shu yezi you hong le

this-CL tree leaf again red PART

'This tree, (its) leaves are red again.'

*b. zhe-ke shu you yezi hong le

this-CL tree again leaf red PART

(productive double nominative
construction)

(16) a. ta you yan-hong le

he again eye-red PART

'He is again jealous.'

*b. ta yan you hong le

he eye again red PART

(sentence with a frozen compound)

Second, the two constituents undergoing reanalysis are adjacent and both patterns, i.e. topic + subject + V and topic/subject + V have been argued to exist in the language at the time the change occurred.

Thirdly, as far as meaning is concerned, the truth-functional part of the meaning can be said to remain intact. The only change is in the distribution of old and new information, i.e. in the productive double nominative construction, the second nominative is in the theme part while in a sentence with a subject-predicate compound, the same nominative, being part of the verb phrase, is now in the rheme part, though the information focus, which in this case falls on the final verb, has remained unchanged.

Finally, this process is in general agreement with the frequently observed tendency of compounding in the evolution of Chinese (Wang, 1980; Karlgren, 1971; Tsao, 1978).

2.1.4. The rise of Taiwanese resultative verb-suffix *liao*

It is well-known that Mandarin aspect marker *-le* and sentence-final particle *le* were both derived from a full verb *liao* 'finish, complete'. The

development has been chronicled by a number of grammarians (Wang, 1980; Ohta, 1986; Mei, 1981 and Yang, 1990). *Liao* in Taiwanese, on the other hand, has never developed into either an aspect marker or a sentence-final particle. The closest it has come to is a verbal-complement *liao*, expressing the phasal meaning of completion. As Yang (1990), who has carefully studied its development in Taiwanese, has correctly pointed out, it is not an aspect marker yet. She has based her analysis on the following two observations. First, it has retained its full tone in this use. Second, it may be replaced by another resultative complement *ho*, as exemplified in the following sentences.

- (17) A-bin saN soe *liao* a
A-bin clothes wash finish PART
'A-bin has finished washing the clothes.'

- (18) A-bin saN soe *ho* a
A-bin clothes wash finish PART
'A-bin has finished washing the clothes.'⁹

However, it is the further development of this verbal complement into a verbal-suffix, equivalent in some contexts to Mandarin *-de* that is our concern here. This correspondence is exemplified in (19) and (20).

- (19) saN A-bin soe-liao chin chhengkhi
colthes A-bin wash-LIAO really clean
'Speaking of the clothes, A-bin has really washed them clean.'

9 As Yang (1990) has correctly pointed out, although syntactically, *liao* and *ho* can replace each other, there is, however, a subtle distinction in meaning between them, so that a better translation for (17) may be 'A-bin has finished washing *all* the clothes' and for (18) 'A-bin has successfully completed the job of washing the clothes.'

- (20) yi-fu A-min xi-de zhen ganjing
 clothes A-min wash-DE really clean
 'Same as (19).'

Yang (1990) has convincingly argued that this use of *liao* has its origin from the verbal complement *liao* and this change occurred under two conditions. First, the object has to be topicalized as shown by the grammaticality contrast between (21) (a), (b), (c) and (21) (d).

- (21) a. saN A-bin soe-liao chin chhengkhi
 clothes A-bin wash-LIAO really clean
 'Speaking of the clothes, A-bin has really washed them clean.'
- b. A-bin saN soe-liao chin chhengkhi
 A-bin clothes wash-LIAO really clean
 'Roughly, same as (a).'
- c. A-bin soe-saN soe-liao chin chhengkhi
 A-bin wash-clothes wash-LIAO really clean
 'Roughly, same as (a).'
- d.* A-bin soe-liao saN chin chhengkhi
 A-bin wash-LIAO clothes really clean

Secondly, the final clause has to be a descriptive phrase capable of describing the fronted object, as can be seen by comparing (21a) with (22), which is ungrammatical.

- (22) * saN A-bin soe-liao khoaN ten-iaN
 clothes A-bin wash-LIAO watch movie

Yang, however, did not spell out the exact mechanism involved in this change. If we invoke Parker's theory in connection with the two conditions just mentioned, then we can see clearly that this use of *liao* developed from a topic chain construction of two clauses with the fronted object as the

common topic and with *liao*, the resultative complement, occurring at the end of the first clause, followed by the covert topic, *saN* 'clothes' symbolized by *ei*, here. Later on reanalysis took place, collapsing two clauses into one, as shown in (23b).

- (23) a. *saNi* A-bin soe-liao, *ei* chin chhengkhi
 clothes A-bin wash-finish really clean
 'Speaking of the clothes, A-bin has washed them (and) they are clean.'
- b. *saNi* A-bin soe-liao chin chhengkhi
 clothes A-bin wash-LIAO really clean
 'The clothes, A-bin has washed them real clean.'

The proposed process of reanalysis is supported by the following observations. First, it is only after the object has been topicalized that the two VP's are indeed adjacent to each other. This explains very well why object topicalization is one of the conditions for this process to take place. Second, although Yang did not mention when this change took place, we could infer that it probably happened in the Ching dynasty because *liao* as a resultative complement was attested as late as Ming dynasty (Yang, 1990). If this is correct, then by the time this change occurred, there were probably other descriptive-resultative verbal suffixes such as *tio*, *ka* in the language to serve as a model for the new analysis.

Third, as far as meaning is concerned, we can readily see that the truth-functional part has been preserved because no lexical item has been changed or deleted and word order has been preserved. However, there is a slight change in the distribution of old-new information in the sentence. The change is similar to what happened in the development of the *ba* disposal sentence in that a topic chain of two comments was collapsed into one by

turning the first into a subordinate one, thus preserving the main focus of the chain.

2.2. Cases Involving Thematic Role Realignment

So far we have presented four cases from various Chinese dialects which by and large affirmed Parker's theory that syntactic changes occurred through the mechanism of constituent reanalysis (his MCS), though in the process of discussion we have proposed some refinements of the constraints he proposed. In what follows, we will turn our attention to syntactic changes that do not fit into his paradigm. We will then propose a new mechanism to be called 'thematic role realignment,' which can account for these observed changes. We will also go into the constraints that accompany this mechanism.

2.2.1. The origin of Mandarin *gei* and Taiwanese *hou* as agent marker

Cheng (1974:319-20) observes that in a number of Chinese dialects the agent-marker is homophonous with the verb 'give'. For example, this applies to *gei* in Mandarin, and also to *hou* in Taiwanese, *pun* in Hakka, and *bei* in Yue.¹⁰ He further suggests (321-2) that the use of dative or agent case-marker homophonous with the verb 'give' should be interpreted as a reflection of semantic relations between different manifestations.

Cheng's suggestion, vague as it is, pointed out a different direction in which the development of *gei* in Mandarin and *hou* in Taiwanese from a full verb should be pursued. Tsao (1988) in his study of sentences with ditransitive verbs in Mandarin and Taiwanese in which *gei* and *hou* serve as the *goal* marker in the respective languages has found out a context in which through thematic role realignment, the agent marker was derived from their earlier

10 For a more comprehensive list see Xu (1992); Zhang (1989).

use as a goal marker. The context is a special type of ditransitive verbs called 'take' verbs. With this type of verbs, the direction of transaction is inward in that the subject represents goal and the object source, as shown in (24a) and (25a).

- (24) a. *ta ying-le wo wu-kuai qian*
 he win-ASP me five-dollar money
 G S
 'He won from me five dollars.'

- (25) a. *keng-chhat hoat goa lak-pah khou*
 policeman fine me six-hundred dollar
 G S
 'The policeman fined me six hundred dollars.'

But (24a) as well as (25a) is ambiguous. The goal-phrase, being subject, can also receive the agent readings while the source-phrase, being object, can also be interpreted as *patient*. This is demonstrated in (24b) and (25b).

- (24) b. *ta ying-le wo wu-kuai qian*
 he win-ASP me five-dollar money
 G/A S/P
 (25) b. *keng-chhat hoat goa lak-pah khou*
 policeman fine me six-hundred dollar
 G/A S/P

This ambiguity which is in most cases inconsequential in actual communication, turns out to be of some consequence when what is originally object is promoted to become subject as shown in (24c) and (25c).

- (24) c. *wo gei ta ying-le wu-kuai qian*
 I GEI him win-ASP five-dollar money
 P/S A/G
 'I was won five dollars by him.'

- (25) c. *goa hou keng-chhat hoat lak-pah khou*
I HOU policeman fine six-hundred dollar
P/S A/G

'I was fined six hundred dollars by the policeman.'

Since the subject is now patient and the agent-phrase has appeared in an oblique position, the sentence takes on the passive reading. This then is the restrictive context in which *gei* and *hou* as agent marker in a passive sentence are derived.¹¹

At this juncture, a legitimate question may be raised as to what evidence we have in positing that the passive use of *gei*, or *hou* was actually derived from the inward use of a ditransitive verb. Hard evidence is difficult to come by at this point due at least in part to the fact that most linguists have not channelled their thought along this line yet. However, an interesting cross-dialectal observation in favor of this position may be mentioned. Tsao and Cheng (1992) have studied a number of dialects and found an interesting generalization. They discovered that all the words that have been convincingly argued to be the source of the present agent-marker in the passive, namely *qi* for Mandarin (Zhang, 1989), Chaozhou (Jiang, 1989), Fuzhou (Liang, 1990) and *yu* for Taiwanese (Tsao and Cheng, 1992) and *fen* for Hakka (Lo, 1960) can not only be used as a outward *give* verb, but also as a goal marker. So unless we posit a thread of development like what we have been doing, i.e., from a *give* verb to become a goal marker and eventually to become an agent marker in the passive through thematic role realignment in a sentence involving an inward ditransitive verb, it is

11 For a discussion of the plausibility of this derivation from the perspective of semantics and historical phonology see Zhang (1989); Tsao and Cheng (1992).

very difficult, if not impossible to account for this uniformity.

2.2.2. The origin of Taiwanese *ka* a patient marker

Much along the same line of reasoning and also in the same context, Tsao and Lü (1990) argued that Taiwanese *ka* as a patient marker equivalent to *ba* in a disposal sentence in Mandarin was originally derived from its use as a source marker. A plausible channel of change is demonstrated in (26).

- (26) a. *kengchhat* hoat goa lak-pah khou
policeman fine me six-hundred dollar
G/A S/P
'The policeman fined me six-hundred dollars.'
- b. *kengchhat ka* goa hoat lak-pah khou
policeman KA me fine six-hundred dollar
G/A S/P
'The policeman had me fined for six hundred dollars.'

That *ka*'s acquisition of the function of patient-marking indeed took place in the very same context as *hou*'s acquisition of the function of agent-marking can be clearly seen from sentences like (26c) where both *ka* and *hou* appear in the very same sentence and where the subject/topic is coreferential with the S/P phrase.

- (26) c. *goa hou kengchhat ka goa* hoat lak-pah khou
I HOU policeman KA me fine 600 dollar
'Speaking of me, I was fined 600 dollars by the policeman.'

Strictly speaking, Taiwanese equivalent to *ba* is *chiong* (Mandarin *jiang*), which, as we mentioned earlier, was competing with *ba* in Tang dynasty but is preserved nowadays only in some southern dialects like Cantonese and Taiwanese. Taiwanese *chiong*, however, is used in a very formal context and

in most cases it is used in conjunction with a *ka*-phrase where the two phrases are coreferential, as shown in (27).

- (27) *chiong diam-mngi ka ii koaiN-khi-lai*
 CHIONG store-door KA it close-PART
 ‘Close the door of the store.’

Because of the limit of space, I will not repeat the arguments that I have given in the two earlier papers (Tsao, 1988; Tsao and Lü, 1990). Rather, it will be more profitable at this point to pursue the question: Given that we have this additional mechanism for syntactic change, will the constraints that we have posited in connection with constituent reanalysis still hold?

One important question stands out immediately. That is whether our assignment of both goal and agent roles and source and patient roles to one and the same phrase is against a very important universal principle in the GB theory, namely, the θ -criterion, which states:

Every NP must be taken as the argument of some predicate;
furthermore, it must be so taken at most once. (Van Riemsdijk
& Williams, 1986:243).

According to this statement of θ -criterion, an argument can at most be given only one thematic role. So the fact that *kengchhat* ‘policeman’ in (26a) is assigned two roles at the same time, i.e. goal and agent, constitutes a flagrant violation of the universal principle. However, Jackendoff (1987) has given evidence in English to show that the θ -criterion as stated should be relaxed and some of the evidence he gave is closely related to our topic.

Thus Jackendoff (1987:395) shows that in (28) *Bill* is ambivalent between an agent and a goal reading.

(28) *Bill* took a pretzel from the monkey's hand

A/G

In the same paper, he also argues that theme should be defined as 'thing in motion or being located', while *patient* should be regarded as 'object affected'. In addition, he points out that a rough-and-ready test for the patient role, so defined, is the ability of a NP to appear in the frame (29).

(29) What happened

What Y did to NP was ...

Given this definition of the role of 'patient' and given the Taiwanese sentence (26a) repeated in the following:

(26) a. *keng-chhat* hoat *goa* lak-pah khou
policeman fine me 600 dollar
G/A S/P

Jackendoff would not object to our assigning both thematic roles of source and patient to *goa* 'me' in (26a). That it is a source NP is justified on the ground that *hoat* 'fine' is an inward transactional ditransitive verb which takes a source NP (here *goa* 'me') and a theme NP (here *lak-pah khou* '600 dollars') as its objects and in that order in Taiwanese (see Tsao, 1988 for a detailed analysis of all the ditransitive verbs in Taiwanese). But *goa* 'me' is at the same time a patient NP because it is the "object affected" and it can appear in the frame sentences such as (30a) and (30b).

(30) a. li hoatseng siami taichi?
you happen to what thing
'What happened to you?'

kengchhat hoat goa lak-pah khou

policeman fine me 600 dollars

'The policeman fined me 600 dollars.'

b. kengchhat tui li anchoaN?¹²

policeman treat you how

'What did the policeman do to you?'

kengchhat hoat goa lak-pak khou

policeman fine me 600 dollars

'The policeman fined me 600 dollars.'

To take care of cases with double thematic roles, Jackendoff (1987:396) proposes a double-tier analysis, i.e. in addition to the thematic tier, he adds a second tier called 'action tier'.¹³ The former deals with motion and location and the latter takes care of agent-patient relations, so that a sentence such as (26a) will have a thematic role structure as (31).

(31) *kengchhat* hoat goa lak-pah khou

G S (thematic tier)

A P (action tier)

This is certainly no place to go into a serious discussion of Jackendoff's proposal. Suffice it to point out his observation of ambiguity in English in

12 For some unknown reason, the corresponding frame sentences in Taiwanese do not sound natural at all. We have to recast them in a question-and-answer form. But in such a re-phrasing, the spirit of the original test remains intact.

13 His proposal actually contains three tiers, i.e. in addition to thematic tier and action tier, he has a third tier called "temporal tier". As the third tier has very little to do with our discussion here, we will disregard it in our discussion.

similar cases and the need to relax the θ -criterion to deal with all the cases on a universal basis.

Another thing we have to address ourselves to is whether both changes involve a change of meaning. When we say that a sentence like (26a) is ambiguous in that the subject *kengchhat* 'policeman' can be either goal or agent and the object *goa* 'me' can be either source or patient, we imply that there is a change of meaning involved, however slightly. However, in actual communication this may boil down to a difference in the speaker's point of view in giving the description. If the speaker, up and above the truth-functional meaning, stresses the volitionality of the subject, he must have included the action tier in his meaning; if, on the other hand, he is simply giving an objective description of an event, he might have chosen to neglect the action tier. So again what is important to point out is that the truth-functional part of the meaning is preserved.

The third thing to be noticed is that, unlike the case of constituent reanalysis where the two constituents undergoing reanalysis will have to be adjacent, there is no strict adjacency requirement in the case of thematic role realignment. The only requirement is that the two thematic roles will have to be contained in the same predicate.

3. Summary and Implications

To sum up, evidence from our studies of syntactic changes in various Chinese dialects suggests that Parker's theory should be refined in the following ways.

First, while most syntactic changes are by means of constituent reanalysis, changes can also occur through thematic role realignment as in

the cases of Mandarin *gei*'s and Taiwanese *hou*'s acquisition of the function of agent marking via its function as a goal marker and Taiwanese *ka*'s derivation from a source marker to a patient marker.

Second, as far as meaning-preserving constraint is concerned, what cannot be changed is truth-functional meaning. Such types of non-truth-functional meaning as turning a part of coordinated structure into a subordinated structure (much as the difference in English between *but* and *although*), shifting point of view, or changing mode of expression from syntax to morphology through compounding are subject to change as long as the overall information distribution, especially where the main focus is, is not altered.

Third, in the case of constituent reanalysis the two constituents undergoing change must be adjacent to each other, while the requirement is not so strict in the case of thematic role realignment. Furthermore, we have also some evidence to suggest that both structures, i.e. structure before change and structure after change, should be what is generatable by the grammar of the particular language involved.

Finally, we have found what we have suspected from the beginning that even though in theory it is correct to say that any change should not violate a universal principle, in practice, it is often very difficult at this stage of linguistic research to determine what is a true universal principle. A case in point is the θ -criterion in the GB theory. We have presented evidence to show that the principle as stated stands in need of some modification. Nevertheless Parker's theory, as amended here, also suggests that a constituent component and a thematic structure component are two essential components in the organization of any grammar. Finally as far as the study of meaning is concerned, our study seems to add some justification to the

Feng-fu Tsao

frequently assumed distinction between truth-functional meaning and non-truth-functional meaning.¹⁴

(Accepted for publication 18 February 1993)

14 For a more thorough discussion of this distinction between truth-functional meaning and non-truth-functional meaning in a different context see Partee (1971).

BIBLIOGRAPHY

- Bennett, Paul. 1978. *Word Order in Chinese*. University of London Ph.D. Thesis.
- , 1981. "The Evolution of Passive and Disposal Sentences," *JCL* 9:61-89.
- Cao, Guan-shun. (曹廣順) 1987. "On the Origin and Development of *Le*," *Yuwen Yanjiu* 1987.2:10-15.
- Cheng, Robert. (鄭良偉) 1974. "Causative Constructions in Taiwanese," *JCL* 2:279-324.
- Chu, Chauncey C. (屈承熹) 1987. *Historical Syntax Theory and Application to Chinese*. Taipei: The Crane Publishing Co.
- Ge, Yi. (戈弋) 1958. "The Origin of the *Ba* Sentence," *Zhongguo Yuwen* 69: 117-8. (in Chinese).
- Givon, Talmy. 1971. "Historical Syntax and Synchronic Morphology: An Archaeologist's Field Trip," *CLS* 7.
- , 1975. "Serial Verbs and Syntactic Changes: Niger-Congo," in Li, N. ed. *Word Order and Word Order Change*.
- Huang, Shuan-fan. (黃宣範) 1978. "Historical Change of Prepositions and Emergence of SOV Order," *JCL* 6:212-242.
- Jackendoff, Ray. 1987. "The Status of Thematic Relations in Linguistic Theory," *Linguistic Inquiry* 18.3:369-412.
- Jiang, Lan-sheng. (江藍生) 1989. "A Preliminary Study of the Source of the Passive Relational Word *qi* (乞)," *Zhong-Guo Yu Wen* 370-377.
- Karlgren, Bernhard. 1971. *Sound and Symbol in Chinese*. Rev. ed. Hong Kong: HKU Press.

- LaPolla, Randy J. MS. "Semantic and Pragmatic Principles in the Organization of Chinese Discourse," University of California at Berkeley.
- Li, C.N., ed. 1975. *Word Order and Word Order Change*. Austin and London: Univ. of Texas Press.
- , ed. 1977. *Mechanisms of Syntactic Change*. Austin and London: Univ. of Texas Press.
- Li, C.N., and S.A. Thompson. 1974. "Coverbs in Mandarin Chinese: Verb or Prepositions?" *JCL* 2:397-413.
- Liang, Yu-zhang. (梁玉璋) 1990. "On the Etymon *Gei* in Fuzhou Dialect," *Zhong-Guo Yu Wen* 280-283.
- Lightfoot, David. 1977. "Syntactic Change and the Autonomy Thesis," *Journal of Linguistics* 13.2.
- , 1979a. *Principles of Diachronic Syntax*. London and New York: Cambridge University Press.
- , 1979b. "Review Article on Mechanism of Syntactic Change," *Language* 55:381-395.
- Liu, Xun-ning. (劉勳寧) 1985. "The Origin of Sentence-final *Le* in Modern Chinese," *Fangyan* 1985.2:128-133 (in Chinese).
- Mei, Tsu-lin. (梅祖麟) 1981. "The Origin of the Perfective Aspect Maker *-Le* and Sentence-final *Le*," *Yuyan Yanjiu* 1981.1:65-77 (in Chinese).
- Mo, Jian-cing. (莫建清) 1984. "A Look at English Reading Comprehension from the Perspective of Discourse Functional," in Huang, T-L et al. eds. *Papers from the First Conference on English Teaching and Learning in the ROC*. 373-380 (in Chinese). Taipei: The Crane Publishing Co.
- Ohta, Tatsuo. 1986. *A Historical Grammar of Modern Chinese*. (Zhongguo Lishi Wenfa) Chinese translation by Jiang, shao-yu (蔣紹愚) and Xu, Chang-hua (徐昌華). Peiking: Peiking University Press.

- Parker, Frank. 1976. "Language Change and the Passive Voice," *Language* 52: 449-460.
- Partee, Barbara Hall. 1971. "On the Requirement that Transformations Preserve Meaning," in Fillmore, C.J. and D.T. Langendoen eds. *Studies in Linguistic Semantics*. 1-22. New York: Holt, Rinehart and Winston.
- Peyraube, Alain. (貝羅貝) 1988. "Syntactic Change in Chinese: On Grammaticalization," *BIHP* 59.3:617-652.
- , 1989. "History of the Passive Constructions in Chinese until the 10th Century," *Journal of Chinese Linguistics* 17.2:335-372.
- Riemsdijk, H. van and Edwin Williams. 1986. *Introduction to the Theory of Grammar*. MIT Press.
- So, Chung. 1976. "The Ba-construction and Verb-final Drift in Chinese," *Computational Analyses of Asian and African Languages* 3:87-95.
- Tsao, Feng-fu. (曹逢甫) 1978. "Anglicization of Chinese Morphology and Syntax in the Past Two Hundred Years," in *Studies in English Literature and Linguistics* 1978:44-54. Taipei: Department of English, National Taiwan Normal University.
- , 1982. "The Double Nominative Construction in Mandarin Chinese," *Tsing-Hua Journal of Chinese Studies* 14.1/2:275-297.
- , 1988. "The Functions of Mandarin *Gei* and Taiwanese *Hou* in the Double Object and Passive Constructions," in Huang, S.F. and Robert L. Cheng eds. *The Structure of Taiwanese: A Modern Synthesis*. 165-208. Taipei: The Crane Publishing Co.
- , 1990. *Sentence and Clause Structure in Chinese: A Functional Perspective*. Taipei: Student Book Co.
- Tsao, Feng-fu. (曹逢甫) and C.C. Lü. (呂菁菁) 1990. "Ka as a Source Marker and a Patient Marker in Taiwanese," Paper presented at 1st

- IsCLL. Taipei: Institute of History and Philology, Academia Sinica.
- Tsao, Feng-fu. (曹逢甫) and Ying Cheng. (鄭榮) 1992. "The Origin of 'Gei' in Mandarin and 'Kap' and 'Hou' in Taiwanese," *Proceedings of the 2nd International Conference in Phonology*. Kaoshiung, Taiwan. Zhongshan University (in Chinese).
- Wang, Li. (王力) 1980. *Hanyu Shigao*. (History of the Chinese Language). Rev. ed., 3 vols. Peking: Zhonghua.
- Wei, Pei-chuan. (魏培泉) 1991. "The Development of the Passive Constructions and Its Mechanisms of Change," *Proceedings of IsCLL II*. 427-442.
- , 1993 "A Brief History of the Development of Preposition *Yu* in Archaic Chinese," *BIHP* 62.4:717-786.
- Xu, Dan. (徐丹) 1992. "The Grammatical Marker *Gei* in the Peiking Dialect," *Fangyan* 1992.1:54-60.
- Yang, Shiu-fang. (楊秀芳) 1990. "A Comparison of Perfective *Liao* in Mandarin and Southern Min from the Perspective of Historical Syntax," Paper presented at 1990 Meeting of Chinese Language Teachers Association, Nashville, Tennessee.
- Yuan, Jia-hua. (袁家驊) 1960. *An Outline of Chinese Dialects*. Peking: Wen-zi Gai-ge Chubanshe.
- Zhang, Hui-ying. (張惠英) 1989. "On *Gei* (給) and *Qi* (乞)," *Zhongguo Yuwen* 1989.5:378-382.
- Zhao, Jing-ming. (趙金銘) 1979. "*Le* and *Zhe* in Dunhuang Bianwen," *Zhongguo Yuwen* 1979.1:65-69.
- Zhu, Minche. (祝敏徹) 1957. "On the Early Stages of the Ba-construction," *Yuyanxue-Luncong* 1:17-33.

從漢語方言的證據 看句法演變的機制與限制

曹 逢 甫

國立清華大學

派克（1976）提出了句法演變的典型模式如下：（一）改變發生在說話者爲了建造語法而擬定假設時；（二）因爲根據同一語料可能擬構一個以上的假設，“誤析組成分結構”可能發生；（三）這樣一種偏失的假設和根據它所設定的規律可能會保留在語法中如果，（1）它不違反任何普遍語法原則，以及（2）不改變語意。

派克的理論是根據他對很多印歐語中態動詞後來演變成被動態的現象所做的分析。本文擬在漫長的漢語史中，從上古漢語到中古漢語，再從中古到現代的北方官話和台灣話，選取一些有史證的語法變化用派克的典型模式來存細檢視他們的演變過程。

我們發現派克的主要機制：“誤析組成分結構”，雖然在很多情形都能合理地說明語法演變，但還是有一些情形無法提供解釋。爲了解釋後者的情形，作者於是提出另一個機制：“論旨角色重組”。派克所提的兩種限制，也在討論每個個案時存細檢視，並提出較精細的說明。最後本研究討論了我們的發現對語法演變理論以及語法理論的啓示。

Synaesthetic Words in the Southern Min Dialect: Their Semantic Structure and Change*

Chinfa Lien

National Tsing Hua University

The paper studies the structure of meanings of sensory words denoting vision, hearing, smell, taste and touch as well as dimension words in the Southern Min dialect. We will examine synaesthesia exhibited in these words with respect to the constraints of metaphorical extension. Specifically, an implicational hierarchy is proposed to capture the unidirectionality of semantic shift from concrete to abstract field. All in all, an all-pervasive theme in the paper is this: the universally semantic law advanced in Williams (1976) with neurophysiological correlates is further attested and critically examined on the strength of Southern Min data.

1. Introduction

The paper studies the structure of meanings of sensory words (i.e.,

* This paper is partially supported by NSC 79-0301-H007-18. I am grateful to Chung-yu Chen, Robert L. Cheng, Mei-chun Liu and Feng-fu Tsao for very useful comments. An earlier version was also presented at William S-Y Wang's seminar on Topics in Linguistics during my sojourn in UC Berkeley. I benefited greatly from the stimulating discussion in the class. I am indebted to William S-Y Wang, Zhongwei Shen, Hsu Wen and Patrick Chew for constructive remarks. Thanks are also due to Shuanfan Huang for insightful comments which have led to a substantial improvement of this paper.

words denoting vision, hearing, smell, taste and touch) and dimension words in the Southern Min (henceforth SM) dialect. It will examine the phenomena of synaesthesia---the transfer of meaning from one semantic domain to another---exhibited in these words. We will show that there are constraints on their metaphorical extension. An implicational hierarchy will be proposed to capture the unidirectionality of semantic shift which, put in a nutshell, proceeds from concrete to abstract entities. For example, there will be a transfer of meaning between physical senses and mental states or activities, perception and intellection, physical and emotional feeling, physical and temperamental states, spatial and temporal dimensions, etc. Granting there is a cultural salience which varies from language to language, as exemplified in the metaphor of color terms, unidirectional metaphorical connections seem to form a universal basis which can be best explained in terms of biologically determined traits.

On the assumption that language is an interrelated system which consists of form rather than substance alone (Saussure 1959) one of our main concerns is to look into interrelationships of the synaesthetic terms and their values which are derived from structural interplay. Since a linguistic sign is made up of form and meaning, we will pay close attention to the interaction between form (the signifier) and meaning (the signified) in semantic change. Due to their arbitrary relation there is no inherent and constant relation between any signifier and the signified it is associated with. Over and above artificial kinds there are natural kinds which fall into categories in our conceptualization of the world. Meanings of words are organized in networks and their configuration changes through time and across dialects. The structural properties of lexical meanings are manifested in the interaction between a lexical element and its semantic opposite. In

lexical polarization a dominating element may exert a phonological or morphological influence on its antonym. Put differently, the claim of structural relatedness will predict that a pair of polar terms in a semantic field will show a synchronous metaphorical extension in semantic reshuffling. As in sound change the association between form and meaning may be thrown into a series of ordered chain shifts. In the light of historical documents and dialectal materials one can reconstruct a chronological profile to capture these chain reactions. From this we can see how a polysemous word is formed and how those senses are coexisting and competing with each other and resolve themselves in the conflict. A clear picture of what constitutes the core of the native layer of the lexico-semantic system will emerge when the intricate semantic relations are mapped out and these semantically-based networks will help build an organic fabric out of a tapestry of previously disconnected lexical elements.

The above theoretical focal points form the basis of our endeavor which will furnish a fairly detailed account of the structure and change of synaesthetic words in the SM dialect. To do full justice to the topic in question our discussion will be enlivened by diagrams showing sets of interrelated words in various semantic domains. This paper will be of relevance to the issue of linguistic relativism, the relation between culture and society, theories of language change, language contact, the biological foundation of language, universals of language, and typological and genetic aspects of linguistic classification.

In sum, the main purpose of this paper is to study the structure and change of synaesthetic words in the SM dialect. Synaesthesia refers to the transfer of words from a sensory domain to another. In humans' neurophysiological system there are five salient senses: touch, taste, smell, hearing, and

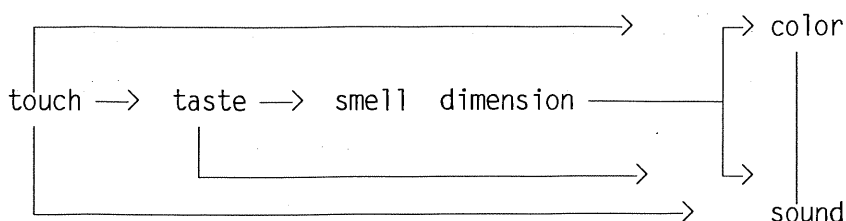
sight. In this study synaesthetic words mean words denoting these five senses: i.e., tactile, gustatory, olfactory, acoustic, visual senses.¹ The structure of this paper is organized as follows: Between Introduction and Closing Words, there are four sections: (2) Implicational Scales of Synaesthesia in English and SM, (3) Chho.-iu 粗幼 and toa-soe 大細 --- a Case Study of Synaesthetic Adjectives, and (4) Verbs and Synaesthesia.

2. Implicational Scales of Synaesthesia in English and SM

Previous studies show that the shift of semantic area is not random and manifests some kind of implicational hierarchy. That this is not unexpected is due to the biological mechanism of our perceptual system. An important pattern that also emerges from these studies is that there is to some extent a universal tendency in the transfer of sensory domains.

In his study of synaesthetic adjectives based on English, some Indo-European languages and Japanese Williams (1976) turns up the following scheme summing up the generalization that he arrives at about the diachronic transfer of sensory domains.

1 In this study we will not discuss synaesthesia observed in the poetic language which seems to be less subject to the constraint of ordinary language. For the use of synaesthesia in traditional Chinese poetry see Qian (1985: 54-66). I have relied heavily on Douglas (1873), Huang et al (1982) and Taiwan (1981) for data on SM dialects. The phonemic transcription of SM examples is based on church romanization used in Douglas (1873) with some minor modifications: nasalization is indicated by a capital N and tone, arabic numerals, and ts and tsh are uniformly represented as ch and chh. Many demotic words which have no graphic representation are indicated by []. For the examples of synaesthetic words in SM see the appendix.



The above sensory areas are self-explanatory except that visual domain splits into two subareas: dimension and color. From this scheme it is clear that the transfer of sensory areas is unidirectional. Unidirectionality means that there is an implicational scale. In this schedule there is an ordering relationship. The arrows indicate the direction of transfer. We can see that whereas touch and dimension are highest, sound, color and smell are lowest on the scale. In other words, these three lowest senses are secondarily or tertially derived. It also involves the notion of markedness. It is the marked that implies the unmarked. The transfer is transitive. Polysemy will arise through the transfer of sensory domains. Some of the senses that accumulated over time may be still there or fall into disuse. So coexistent senses should be distinguished from obsolete senses. It is needless to say that the uncovering of obsolete senses depends crucially on the etymological study of words.

This implicational scale somewhat reflects the three tendencies discovered in Ullmann (1957: 266ff and 1966: 243): "(1) transfer from the lower to the more differentiated senses were more frequent than those in the opposite direction; (2) touch was in each case the largest single source; and (3) sound was the largest single recipient." Ullmann (1979: 227) sums up the unidirectional implication embraced by (2) and (3) by a terse statement that 'acoustic and visual impressions are more often transcribed in terms of touch and hear than vice versa'.

In the same vein Whorf (1956: 155) has a very insightful remark to the

effect that the metaphorical system in English names nonspatial experiences after spatial ones. He is in favor of a bidirectional relation between the spatial and nonspatial experiences. (See also Traugott 1989)

Transfer among sensory domains is subject to implicational constraint, but transfer to non-sensory domains is different and may undergo metaphorical extension. Such lower senses as smell and sound may also be used to denote abstract entities.

A variety of transfer of sensory domains in English as listed in the left column is predicted by Williams' scheme, but there are also some counter-examples listed in the right column.

| | |
|--------------------|---------------------------------|
| touch —> taste | touch —> dimension: crisp |
| taste —> smell | taste —> touch: eager, tart |
| taste —> sound | touch —> smell: hot, pungent |
| touch —> sound | taste —> color: austere, mellow |
| touch —> color | dimension —> touch: small |
| dimension —> color | dimension —> taste: thin |
| dimension —> sound | sound —> taste: loud |
| color —> sound | sound —> touch: shrill |
| sound —> color | |

Williams claims that his scheme represents diachronic semantic generalization which has a universal validity. It would be interesting to see whether this generalization also applies to the synaesthetic words in SM. Based on my own intuition which is checked against that of the other speakers as well as relevant sources, I have distilled the following patterns of synaesthesia summed up in a table:

1. dimension —> touch

幼 粗 重

1a. touch —> taste

幼 利 燒 冷 涼 燥 定 軟 脆 澀

1aa. taste —> smell 辛

1b. touch —> sound

重 輕 粗 幼 旺

1c. touch —> smell 重

1d. touch —> color 重

2. dimension —> sound

大 細 泛

3. dimension —> taste

厚 薄 脆

3a. taste —> sound tiN []

3b. taste —> color chiaN 淡

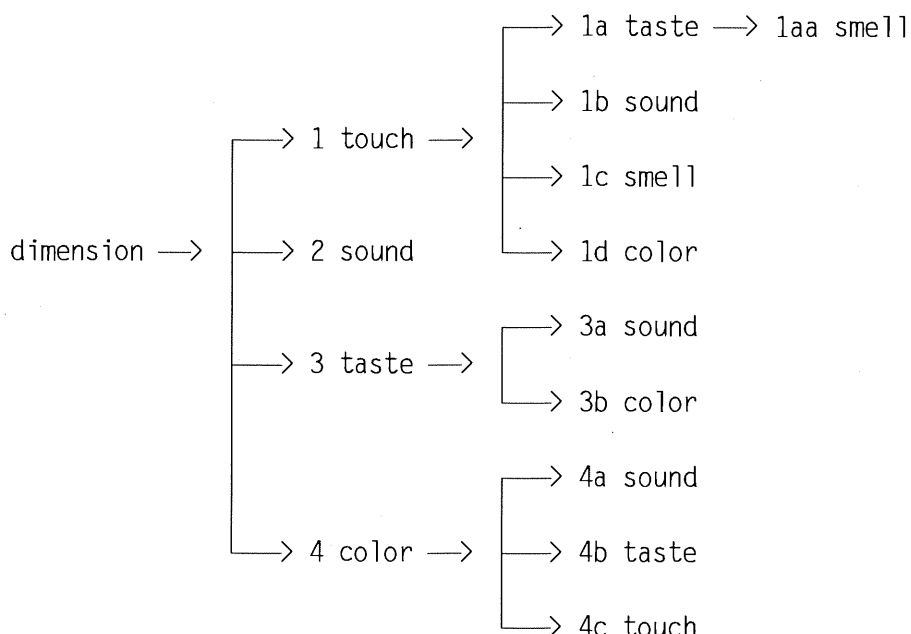
4. dimension —> color

深 淺 大

4a. color —> sound 明 濁 清

4b. color —> taste 青 清

4c. color —> touch ? 光



Unlike Williams' scheme where touch and dimension are mutually independent they are related in our scheme; dimension can be transferred to touch, but not vice versa. My scheme can explain exceptions in Williams' examples, such as dimension —> touch and dimension —> taste.² Derrig (1978) also tentatively proposes that dimension is a primary sensory area from which there is a transfer to sight and sound. However, dimension in Williams' and our scheme actually means 'visual' dimension which includes sight by definition.

We can see that next to dimension touch represents a very important sensory area from which more transfer occurs. Since taste is a specific kind of touch sensations, it is only natural that touch can be transferred to taste.

2 The scheme that I propose contains two cases of bidirectional implication such as touch > color and color > touch, taste > color and color > taste. But this does not undermine the general principle of unidirectional implication proposed here since they represent minor cases and are statistically insignificant.

It is often observed that there is a close relation between taste and smell. In English, for example, the two sensory domains are denoted by the primary and derived sense of a single lexical item 'sweet'. The olfactory sensation is often expressed by the more general terms 'smell good, appetizing, delicious, etc.' other than 'sweet'. However, *tiN la* 'sweet, fresh' and *phang la* 芳 'aromatic, smell good' in SM are two lexicalized adjectives for taste and smell respectively, although the noun *bi 3b* 味 refers to both taste and smell. 味 meaning smell can not transfer to other sensory domains, but they can undergo metaphorical extension to non-sensory domains.

In our scheme the hyponyms imply their superordinate. For example, the transfer of taste to smell implies the transfer of touch to taste which in turns implies the transfer of dimension. But this implicational hierarchy does not entail that a lexical item lower in hierarchy which undergoes the transfer of a sensory area will necessarily go through the gamut of all the transfers higher in hierarchy. A lexical item like *hiam la* 辛 experiences just a shift of taste to smell, whereas a polysemous word like *iu 3a* 幼 goes through two sensory transfers (i.e., dimension to touch and touch to taste) as well as transfer to other non-sensory areas (touch to quality).

From the semantic shift in SM one can still detect the unmistakable signs of implicational relationship, but the scheme in S I, if valid, does not seem to reflect the three tendencies Ullmann proposes for the following reasons. (1) The transfer does not necessarily proceed from lower to more differentiated senses, since in SM dimension, which is visual, does not denote a less differentiated sense in our scheme. (2) Dimension, but not touch, is the largest single source in SM. (3) The recipient in SM is not so obvious. Sound is not the largest single recipient. It can be color or even smell.

Both Williams and Ullmann claim that the pattern of semantic transfer

they each propose has a universal validity. However, the semantic shift in SM does not faithfully reflect such tendencies, even though a unidirectional scale of semantic shift is there. Since synaesthesia involves sensory perceptions which are biologically determined traits of humans, the semantic shift of sensory domains should evince some types of universality. But it is an open question how much the universal tendencies are detectable in each and every language. As far as synaesthesia is concerned, there seems to be a trade-off between language universal tendencies and language-specific linguistic constraints in determining patterns of semantic change. A question arises as to the weight of purely linguistic factors in the determination of the routes of semantic shift of synaesthetic words. The question cannot be resolved without a more in-depth and comprehensive study. My small-scale survey makes no pretense to offering a final solution.

3. Chho.-iu 粗幼 and toa-soe 大細 ---

A Case Study of Synaesthetic Adjectives

In terms of historical origin 幼 and 細 started off as a pair of synonymous words. (Wang 1983: 198-204). Broadly speaking, 幼 develops in SM an opposition in texture (TOUCH) denoted by 粗幼, whereas 細 develops in Peking Mandarin (henceforth PM) an opposition in dimension as well as texture denoted by 粗細. In PM 幼 takes on the sense of young but fails to develop or may have outgrown the senses of TOUCH, TASTE and QUALITY; on the other hand, 細 develops the sense of dimensions, but not texture. Compare the following pairs of antonym in SM and PM:

| Southern Min | Peking Mandarin |
|--------------|-----------------|
| 粗 <—> 幼 | 粗 <—> 細 |
| 老 <—> 幼 | 老 <—> 幼 |
| kua/ 老 <—> 幼 | 老 <—> 嫩 |
| 大 <—> 細 | 大 <—> 小 |

we can see that there is an asymmetric distribution of polar terms in the antonyms. The unmarked polar terms or the terms denoting the value above the norm such as 粗, 老 and 大 are somewhat more stable cross-dialectally. On the other hand, the marked terms are subject to dialectal variation.

Because of the nature of orderly heterogeneity in a linguistic community a language is more truthfully depicted as being made up of a multi-layered system which comes about through contact-induced change. (Weinreich, Labov, and Herzog 1968 and Wang 1979) Like many southern Chinese dialects SM is immensely rich in chronological strata. In dealing with the linguistic system of SM it is important to tell the native layer from alien layers. As in phonemic contrast where the value of a sound may vary with languages a lexical item will change its value across dialects. For example, 細 occurs in SM and PM, but its value is not the same in these two dialects. It is opposed to 大 in SM and yet it is in contrast with 粗 in PM. When we say that 大 and 細 as an antonymic pair in SM correspond to 大 and 小 in PM, it does not mean that 小 is absent in SM. In fact, it can be found in the alien or implanted layer but not in the native layer. Put in somewhat different terms the distinction between native and alien layers is practically coterminous with the distinction between colloquial and literary layers. For example, the lexical item 大 has two pronunciations: tai 3b (alien and literary) and toa 3b (native and colloquial). tai 3b 大 is opposed to sio 2a 小 or siau 2a 小 in the literary and alien layer, whereas toa 3b 大 and soe 3a 細 form a

pair of idiomatic antonym meaning ‘old and young’ in the colloquial and native layer.³

If 幼 in PM has shifted to more abstract non-sensory domains, its congener, viz., iu 3a 幼, in SM still retains a set of concrete senses covering a wide range of sensory areas such as DIMENSION, TOUCH, TASTE and SOUND as well as non-sensory areas like AGE and QUALITY. As shown below, each sense of the word 幼 is matched by its antonym.

DIMENSION

幼 ‘fine’ hun 2a chin 1a iu 3a 粉真幼 ‘the powder is very fine’

粗 ‘big’ chho. 1a pun 2a 粗本 ‘big capital’⁴

TOUCH

幼 ‘fine, delicate’ phe 1b iu 3a 皮幼 ‘the skin is delicate’

粗 ‘coarse’ chho. 1a po. 3a 粗布 ‘coarse cloth’

TASTE

幼 ‘tender’ tek 4a-sun 2a chin 1a iu 3a 竹筍真幼 ‘bamboo shoots are pretty tender’

koa ‘tough’ khun 1b-chhai 3a chin 1a koa 1a 芹菜真 [] ‘the celery is pretty tough’

SOUND

幼 ‘soft’ iu 3a siaN 1a 幼聲 ‘soft/gentle voice’

粗 ‘husky’ chho. 1a siaN 1a 粗聲 ‘husky voice’

3 The distinction between colloquial and literary layers is based on the notion of chronological strata, and the extraction of chronological strata is made possible by a consistent diachronic analysis of the linguistic system in question. It is therefore not the same as the distinction between speech and writing. See also Norman (1988: 41) which proposes a new unambiguous distinction between popular and literary usage.

4 When denoting DIMENSION 粗 is limited to its metaphorical sense.

QUALITY

幼 'fine/exquisite' iu 3a toh 4a 幼桌 'fine feast'

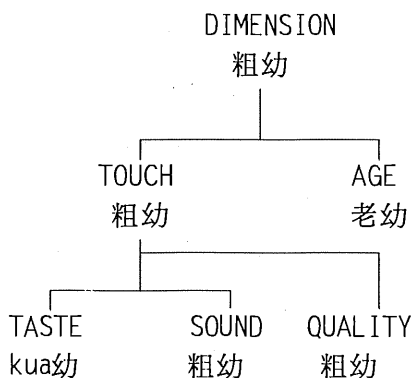
粗 'crude' chho. 1a toh 4a 粗桌 'crude feast'

AGE

幼 'young' pe 3b-lau 3b-kiaN 2a-iu 3a 父老团幼 'aged father and young kids'⁵

老 'old' lau 3b lang 1b 老農 'the old'

The following figure recapitulates the semantic extension of the word 幼 and its antonymic counterparts:



Both 幼 and 粗 range over DIMENSION, TOUCH, SOUND and QUALITY. They undergo a synchronous extension from DIMENSION to TOUCH, SOUND and QUALITY.⁶ However, 粗 fails to shift to TASTE and

5 幼 taken in this sense is a bound morpheme that belongs to the literary layer.

6 Xu (1987) coins the term tong-bu yin-shen 同步引申 'synchronous extension'. It means that given a set of words in a semantic domain, if one of them shifts to another domain, then it is quite likely that a word in the same domain will also undergo similar extension. Both antonyms and synonyms are words that are related in a variety of ways in a semantic domain. To my knowledge, Sperber (1922) first proposed this idea, which was later taken up by Ullmann (1966: 240-241), Williams (1976: 462) and Lehrer (1978: 96). Malkiel (1951 and 1979) also

AGE.

In the light of prototype semantics (Fillmore 1975, 1978, 1982 and Lakoff 1987ab, and Coleman and Kay 1981) the meaning of a word cannot be adequately represented by a checklist of semantic features. Since there are central and peripheral senses associated with a word, not all the senses need be satisfied before it can be identified.

This prototypical effect is also detectable in the semantic extension of 幼. The polysemous word 幼 extends over six semantic areas: DIMENSION, TOUCH, TASTE, SOUND, QUALITY, and AGE. Among these five sensory areas three areas stand out as the core meanings---TOUCH, TASTE, SOUND and QUALITY in contrast to two peripheral areas---DIMENSION and AGE. Perhaps the most central sense is TOUCH from which radiates the more central senses---TASTE, SOUND and QUALITY. The other peripheral ones seem to be rather weak and liable to attrition.

It is interesting to examine the geographical distribution of the three polar terms with reduced extent: 細, 幼 and 小:⁷

| | |
|--|----------------------------------|
| thin <—> thick fine <—> coarse | small <—> big |
| 細 <—> 粗 Mandarin, Wu Xiang, Gan | 小 <—> 大 Mandarin, Wu, Wan |
| 細, 幼 <—> 粗 Min (Chaozhou, Fuzhou) | 細, 小 <—> 大 Xiang, Gan |
| 幼 <—> 粗 Kejia, Min(Xiamen) Yue (Guangzhou) | 細 <—> 大 Min, Yue and Kejia |

discusses various kinds of interaction between polar terms which are indirectly linked to the idea of synchronous extension.

7 The following examples are taken from Beijing (1964: 346, 349 and 350).

On the left column Kejia (Meixian), Yue (Guangzhou) and Min (Xiamen) use 幼 rather than 細 as an antonym for the universal 粗. In contrast, Mandarin, Wu, Xiang and Gan take 細 as the antonym for 粗. Min dialects such as Fuzhou and Chaozhou represent the intermediate case where 幼 and 細 are coexistent forms. Although it is not indicated in the dialectal materials it is quite likely that in this semantic domain 幼 is a colloquial word whereas 細 is a literary word. Since 細 means both 'thin/fine' and 'small' and 'small' is the indigenous sense, the sense of 'thin/fine' must have been taken into Fuzhou and Chaozhou dialects under the influence of Northern Chinese. One can then see that the meaning of a form can be enriched through dialect contact.

On the right column southern dialects like Kejia (Meixian), Yue (Guangzhou, Yangjiang) and Min (Xiamen, Chaozhou and Fuzhou) use 細 rather than 小 as an antonym for the universal 大. On the other hand, Mandarin, Wu and Wan take 小 as an antonym for 大. Xiang (Changsha) and Gan (Nanchang) dialects stand for intermediate cases where 細 and 小 occur side by side. A stratal distinction between 細 and 小 can also be drawn. Fuzhou has another competitive word 嫩 naung. It is crystal-clear that 粗 and 大 as the forms denoting heightened extent are more consistent across dialects than their opposite counterparts.

The synaesthetic extension of 細 is much more restricted than 幼 in SM. As shown below, 細 as an antonym of 大 claims only DIMENSION and SOUND in sensory areas as well as non-sensory areas such as AGE. 大細 in SM is akin to the frozen compound 巨細 'big and small' in meaning.

DIMENSION

大 'big' toa 3b king 1a chhu 3a 大間戙 'big house'

細 'small' soe 3a liap 4b koa 1a-ko 2a 細粒瓜果 'small apple'

SOUND

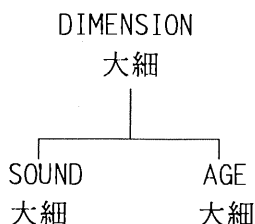
大 'loud' toa 3b siaN 1a 大聲 'loud voice'

細 'low' soe 3a siaN 1a 細聲 'low voice'

AGE

大細 toa 3b-soe 3a 大細 'old and young'

The following figure sums up the semantic extension of the antonymic pair 大細:



In contrast, 細 as an antonym of 粗 in PM ranges over DIMENSION, TOUCH and SOUND.

In sum, 幼 'fine/thin' and 細 'small' both belong to the colloquial stratum in SM. But when 幼 means 'young' and 細 'thin', they shift to the literary stratum. The literary meanings are not indigenous and must have been introduced from outside the Min dialect system. Evidently, a doublet or a pair of strata distinctive but etymologically related forms may only differ strata in meaning, as in the examples just discussed.

Since Min dialects did not have a written history until the Jiajing era of the Ming dynasty (ca. 16th century), the schedule of semantic change as formulated above may remain speculative in nature. But the following corroborative evidence shows that we are on the right track.

According to Wang (1982: 203-204) 幼 and 么 are cognates and 么 is glossed as 小 'small' in Shouwen Jiezi (Xu 1979: 83).

幼 may also be etymologically related to 杪 miao 'the tip of a twig'. The phonetic series of 杪, 宵, 秒, etc. have the sense 'small' in common. (Wang 1983: 198-205) 幼 could very well form a word family with 柔 'soft'. The cognacy is motivated by a correspondence in sound and meaning. 柔 corresponds to *now 'soft, tender, young' in the Proto-Sino-Tibetan language. (Benedict 1972: 63) The nasal element of iuN 幼 in Chaozhou may be a residual form left by the nasal initial.

If the above etymological relationship can be established it may lend support to the semantic domains of 幼 specified in the diagram. But more research is needed to determine whether the proposed schedule of semantic change is valid.

細 is opposed to 大 in some written documents and 粗 in others in the Old Chinese period. (Xu 1986: 3380-81). This semantic variation attests to the coexistence of dialect variation in that period.

4. Verbs and Synaesthesia

We can see from the following chart that an achievement verb in SM is derived from attaching a resultative complement to the activity verb.

| ACTIVITY | ACHIEVEMENT ⁸ | | SEMANTIC DOMAIN |
|--------------------|--------------------------|-------|-----------------|
| khoaN 3a 看 look | khoaN-kiN | see | DIMENSION |
| thiaN 1a 聽 listern | thiaN-kiN | hear | SOUND |
| phiN 3b 鼻 smell | phiN-kiN | smell | SMELL |
| chhi 3a 試 taste | chhi-tioh | taste | TASTE |
| chiah 4b 食 taste | chiah-tioh | taste | TASTE |
| bong 1a [] touch | bong-tioh | touch | TOUCH |

The resultative complement may be an Old Chinese achievement verb denoting vision like kiN 3a 見, a verb like tioh 4b 著 or other complements. A diagnostic test for the activity verb is that it can be followed by a tentative marker like khoaN 3a-bai 3b, as in khoaN khoaN-bai 'Just take a look'. Obviously there is no specific word for 'taste' in SM; chhi 試 means 'try' and chiah 食 'eat'. In English there are separate verbs denoting activity and achievement in the visual and auditory domains (DIMENSION and SOUND), whereas 'smell', 'taste' and 'touch' are ambiguous between action and result.

Unlike synaesthetic adjectives the verbs denoting five senses as given above do not seem to show the effect of synaesthesia in SM although some of them experience a shift from sense perceptions to cognition. It seems to be a universal tendency that feeling is liable to shift to cognition.⁹

However, synaesthesia does occur in some northern Mandarin dialects. As reported in Chen (1988), a local (Longmen) variety of the northern Mandarin dialect at Mancheng in central Hebei next to Baoding the sensory sphere of 'to listen' has been extended to that of 'to smell'. That is, ting 聽 covers both sound and smell. Thus, Ni ting yi ting zhe hua xiang bu? 你聽一聽這花香不? you-listen to-this-flower-fragrant-not? 'Sniff at the flower and see if it smells good'.

8 Unlike activity verbs achievement verbs are telic and punctual and incompatible with the progressive aspect marker teh 4b and the adverbs denoting intention such as thiau 1a-kang 1a 'deliberately'. They can never be used in imperatives. See Vendler (1967: 97-121) for a variety of ingenious diagnostic tests to set achievement off against activity. For follow-up discussions see Tai (1984) and Tang (1988: 194-199).

9 However, the monosyllabic word bi 3b 味 is ambiguous between TASTE and SMELL meaning 'taste, odor, flavor and smell'. But there is a division of labor between chu 1a-bi 3b 滋味 'flavor' and khi 3a-bi 3b 氣味 'smell'.

This reminds us of the polysemous word 聞 which appears to embrace an earlier sense 'hear' and a late sense 'smell'. An interesting question arises as to how the sense of hearing developed into the sense of smell. As shown in the following graph, the meaning of 'hear' which used to be associated with the form 聞 is linked to a new form 聽, whereas the disengaged form 聞 is reassigned to a new meaning 'smell' which was previously denoted by the form 嗅.

嗅 ===== smell < ——— 聞 ===== hear ——— > 聽

How did this come about? There has been much dispute over its etymology. (Zhang 1962 and Yin 1962) However, the above characterization may not represent the whole picture, since 聞 also had the sense of smell in the Old Chinese period. The moot point is whether 聞 has both a primary sense of hearing and a derived sense of smell or it is a general word of sense perceptions with no distinction between hearing and smell. Its modern olfactory sense may be a result of specialization of the earlier general sense. The second hypothesis is quite plausible on the comparative evidence of the Proto-Tibeto-Burman (PTB) languages: (Benedict 1972)

PTB *g-na/r-na 'hear' Written Tibetan nyan 'listern, hear'

PTB *s-nam/m-nam 'smell' Written Tibetan mnam 'smell'

Zhang (1962) suggests that PTB HEAR and SMELL may be related to Old Chinese *m̥wən 聞; Dentalization of *m- into n- may have taken place in PTB. (Wen 1941) The phonetic affinity between HEAR and SMELL in PTB forms may explain the fact that the auditory and olfactory senses were confused in the Old Chinese period. 聽 may be a descendant of the general word 聞 of sense perceptions. The co-presence of auditory and olfactory

senses of 聽 in the Longmen dialect as mentioned above may reflect the stage when a general sensory domain had not split into smaller categories.

If there is barely any semantic shift in the sensory domains for verbs, the change of sensory domains to other semantic fields is richly documented. There is in Indo-European languages some general terms for the expression of sense perceptions. 'Sentire' in Latin is an example. (Buck 1988: 1019 and Cruse 1986: 84-85) Thus,

Lat. sentire 'perceive'

Fr. sentir₁ 'taste, smell, feel' (TASTE, SMELL, TOUCH)

sentir₂ 'smell' (SMELL)

sentir₃ 'understand' (COGNITION)

The first sense of 'sentir' in French is a continuation of Latin general perceptual sense. The second sense is a specialization of the original general sense. The third sense is a metaphoric extension of the first sense exhibiting a shift from the perceptual sphere to the cognitive sphere.

Different parts of speech seem to show an uneven distribution of the extension of semantic domain. Consider the following examples:

Fr. sensible 'sensitive, easily moved; perceptible'
(TOUCH, EMOTION)

Eng. sensible 'intelligent, reasonable' (COGNITION)

In contrast to 'sensible' in English which has taken on a cognitive sense 'sensible' in French denotes the perceptual (and emotive) sense. However, 'sentiment' in French has a cognitive sense apart from its perceptual sense.

(Breal 1964: 33)¹⁰

Likewise, verbs in SM also witnesses a shift of sensations to cognition in semantic domain. In SM there is also a general term for sense perceptions. Like 'sentire' in Latin *chai 1a* 哲 in SM is a general term for sense perceptions. It means 'to feel, sense; know':¹¹

- chai 1a thiaN 3a* 哲疼 'feel pain'
- chai 1a iau 1a* 哲枵 'feel hungry'
- chai 1a joah 4b* 哲熱 'feel hot'
- chai 1a koaN 1b* 哲寒 'feel cold'
- chai 1a lang 1b* 哲儂 'conscious'

It seems quite likely that the cognitive sense of *chai 哲* in SM evolves from its earlier perceptual sense. This hypothesis is supported by the fact that its cognate 知 had perceptual senses in the Old Chinese period:

〈說文〉‘聞，知聲也。’ ‘To hear means to perceive sound.’ (Xu 1979: 250)

-
- 10 It is often the case that when a word of sense perceptions where the perceptual sense and its extended cognitive sense coexists is borrowed into a language the host language only accepts the extended sense while discarding the perceptual sense, as in the French loans in English such as 'gross', 'petty' and 'profound'.
 - 11 〈方言第一〉黨曉哲，知也 (Zhou and Wu 1956: 1) (Wang 1983: 299-300). 〈說文·口部〉“哲，知也”。〈爾雅·釋言〉哲，智也。This means that 哲 and 知 are cognates. 哲 also means 折. 〈說文·手部〉“折，斷也”。折 means 'break'. Thus, another sense of 哲 'intelligent, wise' may be derived from 'break' which in a sense means 'to tell apart, decompose'. In a similar vein, *e 3b* 解 which means 'to carve up', as in *庖丁解牛* 'the cook carves up the cow', develops an epistemic sense 'able, can, may', as in *i 1a e 3b lim 1a* 伊解 [] 'he drinks; he is a great drinker'.

漢范縝〈神滅論〉：‘手等能有痛癢之知。’ (Xu 1986: Vol 4. 2581)

‘limbs have the sensation of pains and itches.’

〈王充論衡・別通篇〉‘... 鼻不知香臭曰癰’ “Yong” means nose is insensitive to fragrance and stench.’

〈論語・述而篇〉三月不知肉味 ‘have not sensed the flavor of meat for three months.’ (Yang 1987: 75)

It is a universal tendency that sensations are liable to shift to cognition. In short, there is a unidirectional implication between perception and cognition. The semantic evolution of *sentir* and *chai* 哲 shows this universal aspect of metaphoric extension, a shift from the concrete to the abstract semantic sphere, as well as the intimate link between perception and cognition.

5. Closing Remarks

To summarize, we have looked into the structure and change of synaesthetic words in SM taking Williams’ finding as a point of departure. Based on the pattern of synaesthesia in SM we propose a modified scheme of implicational hierarchy. We find at least in SM or possibly Chinese dialects at large a tendency that DIMENSION as the primary sensory area is highest in the implicational hierarchy and TOUCH is the second important sensory area from which other sensory areas are derived. Although smell is not able to transfer to other sensory areas, it can nevertheless undergo metaphorical extension to other more abstract domains.

On the strength of the notion that the meaning of polar terms can be best captured in terms of the relationship of opposition we provide a fine-grained case study of synaesthetic adjectives to map out the intricate

semantic interaction among them. We also examine the synaesthesia among verbs paying close attention to the intimate link between SMELL and HEAR. We argue that *chai* 哲 which is related to 知 'know, realize' in other dialects may have had the meaning of 'feel, sense' in an earlier stage. If the claim is valid, then there is a shift from sensation to cognition which is a universal tendency in the change of meaning.

The pursuit of invariance is an important concern in linguistic study. It is no less important to tackle the problems of language universals. As with basic color terms (see Berlin and Kay 1969) synaesthetic words show unmistakable patterns of universal tendency. In surveying language change Wang (1976: 66) makes an observation to the effect that there is a correlation between linguistic categorization and the neurophysiological properties of our visual, tactile, olfactory, gustatory, auditory sensation. The present study as well as previous researches shows that semantic change in synaesthetic words does have a universal validity. However, this study also reveals the Min-unique patterns of semantic change. A more comprehensive examination will help us gain a deeper understanding of the relative weighting of biologically correlated language universal and purely language-specific linguistic mechanism in the determination of the routes of semantic change.

(Accepted for publication 19 November 1992)

APPENDIX

DIMENSION

poh 4b 薄 'thin', kau 3b 厚 'thick', toa 3b 大 'big', soe 3a 細 'small', chhim 1a 深 'deep', chhien 2a 淺 'shallow', kuaiN 1b 懸 'high', ke 3b 下 'low', pui 1b 肥 'fat', san 2a [] 'thin', chat 4b 實 'solid', phaN 3a 泛 'porous', moaN 2a 滿 'full', khang 1a 空 'hollow', tiN 3b 盈 'full', piN 1b 平 'even', piN 2a 扁 'flat', tit 4b 直 'straight', khiu 1b [] 'curled, curly'.

TOUCH

lai 3b 利 'sharp', tun 1a 敦 'dull', chiam 1a 尖 (< 鍼) 'sharp', koaN 1b 寒 'cold', leng 2a 冷 'cold', chhin 3a 清 'cold', joah 4b/loah 4b (col.)/jiet 4b (lit.) 熱 'hot', sio 1a 燒 'hot', teng 3b ? 定 'hard', nng 2a 軟 'soft', tang 3b 重 'heavy', khin 1a 輕 'light', chho. 1a 粗 'rough, coarse', kng 1a 光 'smooth', siap 4a 澀 'rough, as surface; very stiff, as door or drawer'.

SMELL

phang 1a 芳 'fragrant, aromatic, scented', chhau 3a 臭 'stinking', chhau 3a chho 1a 臭臊 'strong unpleasant smell, as of fish', chho. 1a 臊 'gamy, fishy'.

TASTE

kho. 2a 苦 'bitter', hiam 1a ? 辛 'hot', loah 4b 辣 'hot, pungent', tiN 1a ? 珍 'sweet, fresh', kam 1a 甘 'sweet', siap 4a 澀 'puckery, astringent', khiu 3b [] 'tenacious, viscous, as a thick jelly', sng 1a 酸 'sour', lai 3b 利 'acute' (as of pineapple), kiam 1b 鹹 'salty', chiaN 2a ? 孱 'insipid', tam 3b 淡 'tasteless, insipid', kua 1a [] 'tough', jun 3b 韌 'tough', lun/jun 3b 嫩 'soft, delicate, supple', chhe 3a 脆 'soft', so. 1a 酥 'crisp', so 3a 燥 'dry'.

SOUND

ong 3b 旺 'loud', ang 3a 'sound as echoed from a cave', tang 3b 重 'heavy',
khin 1a 輕 'light', soe 3a 細 'small', chho 1a 粗 'coarse', iu 3a 幼 'fine, soft'
(but not tsiN 2a), chiam 1a 尖 (<鍼) 'sharp'.

COLOR

chhiN 1a 青 'blue, green', am 3a 暗 'dark', chhim 1a 深 'deep', chiaN 2a []
'light, pale', tam 3b 淡 'light, pale', chhing 1b 清 'clear', lo 1b [] 'murky'.

REFERENCES

- Beijing daxue zhongguo yuyan wenxue xi yuyanxue jiaoyanshi 1964. (ed.)
Hanyu Fangyin Cihui [A lexicon of the Chinese dialects]. Beijing:
Wenzi Gaige Chubanshe.
- Benedict, Paul, K. 1972. Sino-Tibetan: a conspectus. Cambridge: Cambridge
University Press.
- Berlin, Brent, and Paul Kay. 1969. Basic color terms. Berkeley and Los
Angles: University of California Press.
- Breal, Michel. 1964. Semantics: studies in the science of meaning. trans. by
Henry Cust. New York: Dover Publications, Inc.
- Buck, Carl Darling. 1988. A dictionary of selected synonyms in the principal
Indo-European languages. Chicago and London: The University of
Chicago Press.
- Chen, Shujing. 1988. Hebei Mancheng fangyan de texing [Characteristic of
the Mancheng dialect, Hebei province]. Fangyan 2.103-112.
- Coleman, L and P. Kay. 1981. Prototype semantics: the English verb 'lie'.
Language 57.26-44.
- Cruse, D. A. 1986. Lexical semantics. Cambridge: Cambridge University Press.
- Derrig, Sandra. 1978. Metaphor in the color lexicon. Papers from the
parasession on the lexicon. ed. by Donka Farkas, Wesley M. Jacobsen
and Karol W. Todrys. 85-96. Chicago: Chicago Linguistic Society.
- Douglas, Rev. Carstairs. 1873. Dictionary of the vernacular or spoken
Language of Amoy. London: Trubner and Co.
- Fillmore, Charles J. 1975. An alternative to checklist theories of Meaning.
Proceedings of the First Annual Meeting of the Berkeley Linguistics
Society. 123-131. Berkeley: Berkeley Linguistics Society.

- , 1978. On the organization of semantic information in the lexicon. Papers from the Parasession on the lexicon. ed. by D. Farkas et al. 148-173. Chicago: Chicago Linguistics Society.
- , 1982. Frame semantics. Linguistics in the Morning Calm. ed. by the Linguistics Society of Korea. 111-138. Seoul: Hanshin.
- Huang, Diancheng et al. 1982. (ed.) Putonghua Minnan fanyan cidian [Putonghua-Southern Min dialect dictionary]. Hong Kong: Joint Publishing Co.
- Lakoff, George. 1987a. Women, fire, and dangerous things. Chicago: The University of Chicago Press.
- , 1987b. Cognitive models and prototype theory. Concepts and Conceptual development: Ecological and Intellectual Factors in Categorization. ed. by Ulric Neisser. 63-100. Cambridge University Press.
- Lehrer, A. J. 1978. Structures of the lexicon and transfer of meaning. *Lingua* 45.95-123.
- Malkiel, Yakov. 1951. Lexical polarization in Romance. *Language* 27.485-518.
- , 1979. Semantic universals, lexical polarization, Taboo: The Romance domain of 'left' and 'right' revisited. Current issues in linguistic theory. Vol. 11. Part II. Festschrift for Oswald Szemerényi on the Occasion of his 65th Birthday. ed. by Bela Brogyanyi. 507-527. Amsterdam: John Benjamins Publishing Company.
- Norman, Jerry, 1988. Chinese language. Cambridge: Cambridge University Press.
- Qian, Zhongshu. 1985. Qi zhui ji [A collection of seven essays]. Shanghai Guji Chubanshe.
- Saussure, Ferdinand de. 1959. Course in general linguistics. ed. by Charles

- Bally and Albert Sechehays in collaboration with Albert Riedlinger.
trans. by Wade Baskin. New York: Philosophical Library.
- Sperber, Hans. 1922. Ein Gesets der Bedeutungsentwicklung. Zeitschrift fur
Deutsches Altertum 59.49-82.
- Tai, James H-Y. 1984. Verbs and times in Chinese: Vendler's four categories.
Papers from the parasession on lexical semantics. ed. by D. Testen et
al. 289-186. Chicago: Chicago Linguistic Society.
- Taiwan Sootokufu. 1981. Tai Nichi dai jiten [A comprehensive dictionary of
Taiwanese-Japanese Dictionary] Taipei: Zhongwen Tushu Gufen
Gongsi. 2 volumes.
- Tang, Tingchi. 1988. Yingyu renzhi yufa: jiegou, yiyi yu gongyong (1) [A
cognitive grammar of English: form, meaning and function (1)].
Taipei: Student Book Co., Ltd.
- Traugott, Elizabeth Closs. 1989. On the rise of epistemic meanings in English:
an example of subjectification in semantic change. Language 65.31-55.
- Ullmann, S. 1957. Principles of semantics, 2nd ed. Glasgow: Jakson and
Oxford: Blackwell.
- , 1966. Semantic Universals. Universals of Language. ed. by Joseph H.
Greenberg. 217-262. Cambridge, Massachusetts: The M.I.T. Press.
- , 1979. Semantics: An introduction to the science of meaning. New
York: Barnes and Noble.
- Vendler, Z. 1967. Linguistics in philosophy. Ithaca and London: Cornell
University Press.
- Wang, Li. 1982. Tongyuan zidian [An etymological dictionary of Old
Chinese]. Beijing: Shangwu Yinsheguan.
- Wang, Niansun. 1983. Guang Ya shu zheng [A collated edition of Guang
Ya]. Shanghai Guji Chubun She.

- Wang, William S-Y. 1969. Competing sound change as a cause of residue. *Language* 45.9-25.
- , 1976. Language change. Origins and Evolution of language and Speech. *Annals of the New York Academy of Sciences of Language*. ed. by Stevan R. Harnd, Horst D. Steklis and Jane lancater. 280.61-72. The New York Academy of Sciences.
- , 1979. Language change----a lexical perspective. *Annual Review of Anthropology* 8.353-71.
- , 1982. Variation and selection in language change. *Bulletin of the Institute of History and Philology* 53.495-519. Taipei: Academia Sinica.
- , 1991. Language prefabs and habitual thought. *Explorations in language*. ed. by William S-Y. Wang. 397-412. Taipei: Pyramid Press.
- Weinreich, Uriel, William Labov, and Marvin Herzog, 1968. Empirical foundation for a theory of language change. *Directions for Historical Linguistics*. ed. by Winfred P. Lehmann and Yakov Malkiel. 97-195. Austin: University of Texas Press.
- Wen You. 1941. Lun hanzang yuzu zhong $m > n$ zhi yanhua [The $m > n$ development in the Sino-Tibetan philology]. *Bulletin of Chinese Studies* 1.277-289.
- Whorf, Benjamin Lee. 1956. The relation of habitual thought and behavior to language. *Language, thought, and reality: selected writings of Benjamin Lee Whorf*, ed. by John B. Carroll. 134-159. Cambridge, Massachusetts: The M.I.T. Press.
- Williams, J., 1976. Synaesthetic adjectives: a possible law of semantic change. *Language* 52.461-478.
- Xu, Jialu. 1987. Lun tongbu yinshen [On synchronous extension]. *Zhongguo Yuwen* 1.50-57.

- Xu, Shen. 1979. Shuo wen jie zi. Beijing: Zhonghua Shuju.
- Xu. Zhongshu et al. 1986. Hanyu da zidian [Dictionary of the Chinese language]. Wuhan: Hubei Cishu Chubanshe and Sichuan Cishu Chubanshe. 8 Volumes.
- Yang, Bojun. 1987. Lun Yu yi zhu [Annotations and Translations of Lun Yu]. Taichung: Landeng Wenhua Shiye Gongsì.
- Yin, Menglun. 1962. Wen de ciyi wenti [The meaning of 'wen']. Zhongguo Yuwen 11.496-501.
- Zhang, Yongyan. 1962. Zai tan "wen" de ciyi wenti [The meaning of 'wen' revisited]. Zhongguo Yuwen 5.229.
- Zhou, Zumo and Xiaoling Wu. 1956. Fangyan xiaojian ji tongjian [A collated edition of Fang Yan]. Beijing: Kexue Chubanshe.

閩南方言中的聯覺詞： 語意結構和演變

連 金 發

國立清華大學

本文研究閩南方言中表視覺，聽覺，嗅覺，味覺，觸覺等感覺詞和次元詞的語意結構和演變。文章主要考察這些詞的聯覺現象。聯覺作用是指語意由一個意域轉入另一個意域。語意引申的程序有一定的限制。我們以含蘊層次的概念來說明語意演變的單向性。約言之，語意是由具體往抽象的指稱演化的。由於人類具有共通的生理感知特徵，表示感知的聯覺詞所呈現之語意演變的單向性理應是世界語言所共有的。維廉思首先就印歐語論證了這個觀點。我們以閩南方言語料為基礎再加以論證並修正了維說。此外，我們還討論了聯覺形容詞粗幼和大細的語意結構和演變以及動詞的聯覺作用。

異形語的共存與淘汰

—— 台灣話的輕聲與數量語

鄭 良 偉

夏威夷大學

本文從輕聲化等語音簡化現象及數量語的各種簡化現象，比較各種同義異形語詞的共存與淘汰。台灣話的一些語法簡化規律將詞組性語詞改成具詞法性的特列結構單位，產生同義語或類義語。特列結構化的過程很像詞匯化，但各個特列結構單位並不需要列在詞匯裡。詞組性語詞並不因為有特列結構、詞匯單位同義語而被淘汰。從歷史演變的觀點看，輕聲化首先以詞匯擴散開始，然後從個別的詞匯擴充推廣到整個相同語法功能詞類內所有詞匯的語法範疇。

本文符號體例：

- # 變調分界，前面的音節，除非是輕聲，否則不變調。人#矮。NP# VP
= 後面唸輕聲，前面唸本調。走=去 V= V
- 後面不輕聲化。（特別提醒時才用）走-去學校。V- V- LOC

| | 陰平 | 陰上 | 陰去 | 陰入 | 陽平 | 陽去 | 陽入 |
|------|-----|-----|-----|-----|-----|-----|-----|
| | 第一聲 | 第二聲 | 第三聲 | 第四聲 | 第五聲 | 第七聲 | 第八聲 |
| 拼音調號 | a | ā | à | ah | â | ā | ah |
| 單讀調值 | ┐ | ┑ | └ | ┘ | ┐ | ┑ | ┐ |
| 連讀調值 | ┐ | ┑ | └ | ┘┘ | ┐┑ | ┑ | ┐┐ |
| | 清 | 短 | 臭 | 闊識 | 紅 | 重 | 白直 |

注：連讀調值放在直槓之前。

1. 導 言

本文討論不同種類的同義語詞的共存與淘汰現象。

所討論的語料有二：

- 一、描寫台語的數量語句法與詞法現象，特別是語詞簡化所產生的同義詞。
- 二、描寫台語輕聲和其他語音簡化現象的語法與語意特點，特別是語音變化所產生的異形語的新語意或新語法功能。

在理論上本文運用詞匯擴散理論解釋語音簡化規律的開始，以及異形語的共存與淘汰條件、過程、與結果，藉以探討所以有不同的適用範圍的來歷與理由。本文所討論有關異形語或同義語的共存與淘汰的主要原則有二：

- 1 詞匯或詞法裡的兩個新舊異形語若沒有新的功能的劃分，舊異形語很容易被淘汰。
- 2 有句法結構的詞組性語詞因為不構成記憶負擔，較容易與詞法上的或詞匯裡的同義語共存而不被淘汰。

由於語言接觸，台語有多量的文白異讀現象，又因為語音簡化產生許多同詞異形語。研究者可透過內部擬構 (internal reconstruction) 來探討同義語或同詞異形語的共存與淘汰的條件與過程。值得注意的是詞匯擴散現象 (William S-Y Wang 1969)：一個語音或語法規律開始運作並不是同時影響到所有適用該語音或語法範疇的語詞，乃是從高頻度，快速度的個別語詞，逐漸擴散到其他詞匯。產生了新發音以後舊發音也不立刻地或均勻地被淘汰。共存或淘汰決定於多種因素的互動關係 (謝信一 1990，鄭良偉 1990)。我們從台語語料中可以找到一個很重要的原則，那就是舊異形語若沒有新的功能早晚會被淘汰。新功能包括語法結構的分界，語意重點的標誌，歧義的迴避。此外，舊語詞的淘汰也決定於不同語法單位 (詞匯，特別詞法結構，詞組) 的記憶負荷量。在各種語法範疇中唯有代名詞與數量語整批地、均勻地受到輕聲化與語音變調分界省略的影響，在特定的條件下新舊兩個異形語都可出現，但各有特別的語法、語意功能。

從台語各種語音簡化規律來看，我們可以推測每個語音簡化規律對語詞影響

有三種情形：1）新舊（即簡化前和簡化後的）語詞共存，2）舊的已被淘汰，3）雖然合乎簡化條件，實際上卻還沒有簡化，也就是只有舊語詞沒有新語詞。新舊共存的情形，如果有功能的劃分，舊的就能保留下來，否則遲早會被淘汰。以輕聲規律為例，在詞匯單位裡（如：日 = 時 * 日時）舊語詞被淘汰的速度特別快，可能是要減輕記憶的負擔。不在主要語法範疇末尾時不輕聲（如：「送 = 兩本。* 送 = 兩本去學校」）。因而輕聲有標誌語法分界的功能。

以語法語意因素的互動，以及詞匯擴散過程來看輕聲化在同樣的語意與語法條件下有不均勻的現象。這種不均勻現象最先發生於各詞類的常用語，也見於其他語音簡化現象：多音節合音化（如：啥人 [siāⁿ-lāng ㄊㄣˊ ㄌㄨˊ > siāng ㄊㄣˊ ㄌㄨˊ]），零聲母向前同化，（如：漆仔 [chhat-ā > chhallā]，𦵇仔 [kan-ā > kannā]），音節尾鼻輔音向後發音部位同化（如：新婦 [sin-pū > simpū]）都只限於個別的詞匯，或者帶有個別的虛詞（如仔，個，兮）裡。

本文第2節討論輕聲化的兩種規律：一種是只限於語音（包括說和聽）簡化的規律；另一種是配合標誌語意重點的語音規律。前一種只是局部地簡化語音的力量，只牽涉到個別的詞匯，後一種適當地配合語法和語意，用數量語、代名詞這兩種語法範疇全面地簡化語法，涉及十分廣泛。第3節討論其他各種語音簡化，只影響到個別的語詞，沒有標誌語法或語音的功能。

第4節討論數量語的語法與語意現象。語詞省略所引起的異詞同義語跟語音簡化所產生的異形語相互比較，探討不同的淘汰與共存原則。

詞匯擴散理論在語法上的運用，已經有人說明過基本觀念，本文儘量不重複（梅祖麟(1987)觀察語序變化，筆者觀察聲調變化產生的異形語共存與淘汰現象(1991)，以及時態時段語的語法現象(1990)）。惟本文利用數量語裡不同種類的同義語，以便比較淘汰的原則。

2. 輕聲化與新舊異形語

輕音音節使聲調對立消失，也就是中和(neutralize)本來的調，音值偏向中

低，短暫，而微弱。原來不同的詞輕聲化以後互相的調值相同。受到輕聲影響的語詞只限於常用的，又只能在某種語法條件發生，使得語法重新調整，因而產生了2.1節要討論的新功能。

2.1 輕聲出現規律與語意、語法功能

台語輕聲化規律有兩個條件：一）輕聲化的音節只出現在主要語法範疇VP，NP，S等的末尾，二）涉及到數量語或代名詞時，只在沒有語意重點時才能輕聲。因而產生下面的功能：

1) 標誌主要句法單位NP，VP，S的界線

「先生，出來，得」等在句a裡是輕聲，是NP，VP，S的末尾。在句b裡不發音為輕聲，因為不在NP的末尾。

| | | | |
|-----------------------|------------|-----------|-------------|
| 1a 陳 = 先生 | * 陳先生 | NP | 陳先生 |
| b 陳先生娘 | * 陳 = 先生娘 | NP | 陳太太 |
| 2a 走 = 出來 | * 走出來 | VP | 跑出來 |
| b 走出來外口 | * 走 = 出來外口 | VP | 跑到外頭來 |
| 3a 嬲記 = 得，門 kā 鎖 = 咧。 | | S,S | 忘了，竟把門上了鎖了。 |
| b 嬲記得門 kā 鎖 = 咧。 | | [V-Comp]S | 忘記給門上鎖了。 |

2) 標誌語意重點

在動態動詞之後（也就是VP末尾）的代名詞或數量語如沒有說成輕聲，就表示該代名詞或數量語是語意重點。

| | |
|-----------|----------------------------|
| 5a 讀 = 兩本 | （重點在動詞：「是有讀 = 兩本，m̄ 是無讀」 |
| | { 是讀了兩本，不是沒讀。 } |
| b 讀兩本 | （重點在數量語：「是讀兩本，m̄ 是讀一本抑是三本」 |
| | { 是讀兩本，不是讀一本或是三本。 } |

另外，輕聲起因於語音的簡化，首先發生在常用的虛詞。理由是常用的虛詞使用者特別熟悉，容易說快。不常用的語詞就不一定受到影響：可能後來類比同詞類的常用詞變化，也可能永遠不變化。結果輕聲產生了下面三種功能：

3) 分辨不同的內部結構

4a 驚死 { 怕死 } (VO 裡的 O 不能輕聲化)

驚食 { 怕人吃 }，驚掠 { 怕被捉 }，驚槓 { 怕挨打 }，
驚修理 { 怕被修理 }，驚拍 { 怕被打 }，驚罵 { 怕被罵 }，驚某 { 怕太太 }

b 驚 = 死 { 因怕而死 } (VR 裡的 R，有些經常輕聲)

氣 = 死，寒 = 死，熱 = 死，暢 = 死，歡喜 = 死

上面語詞 4a 是一種動賓結構，賓語由動詞承當，可以用為形容詞（如：真驚死 { 很怕死 }）。在台語裡賓語除了數量語或代名詞以外不能輕聲。4b 是動補結構，這種結構不一定有輕聲化，完全決定於哪一個補語，數量可觀。

4) 分辨語詞

有極少數詞匯以輕聲的有無來辨別。

「 = 月」做為某月時經常輕聲。

6a 正 = 月 { 一月 } 正月 { 一月一日 }

「 = 日」昨 = 日，落昨 = 日，大後 = 日。

b 後 = 日 { 後天 } 後日 { 改天 }

需要知道全詞匯才能判斷是不是輕聲的所謂詞匯輕聲，北京話數目可觀（如：彷彿 = 佛，玻璃 = 璃），常用的約有八百多，並且有增加的趨勢。台灣的國語與台語很少有詞匯輕聲。

5) 標誌虛詞所在

台語雖然不是所有的虛詞都輕聲，但是所有輕聲出現的情形都是 NP，VP，S 末尾的虛詞。這些虛詞可能是詞尾，詞組尾，或是句尾。

2.2 輕聲的分佈

輕聲功能相當複雜，如果不追究其來源，很難了解其所以然。比較輕聲的語詞和不輕聲的語詞，不難看出一個很明顯的趨勢——常用的語詞先受影響。下面兩種情形都是如此：

一）各種詞匯組之間：實詞詞匯組不輕聲化；常用的虛詞詞匯組全組輕聲（如：語氣詞，時態語，代名詞，數量語），不常用的有的輕聲有的不輕聲。

二）語意、語法功能相同的虛詞詞匯組的各別虛詞，都是常用的輕聲，不常用的不輕聲。動詞與名詞詞尾大多屬於這類。（請參閱筆者 1989a: 36-47）

下面討論三種語法結構裡輕聲出現的情形：

1）[V-NP]VP: VP 結構內部 NP 的輕聲化

做為動詞賓語的 NP 如果是一般名詞，不能輕聲（句 7）；如果是代名詞，數量語，除非有語意重點，否則就要輕聲（句 8b，d）；如果沒有輕聲化便是語意重點的情形（句 8a，c），不強調與強調之間的對立由輕聲化與保留聲調對立來表示。

7a 老師 # 指導（*＝）學生。（*＝）後面不能輕聲化，不特別表強調

b 老師 # 領（*＝）無夠錢。

8a 老師 # 指導- 我。 - 沒有停頓或輕聲化。表強調在後。（強調代名詞）

b 老師 # 指導＝ 我。＝ 後面唸輕聲，前面唸本調。（一般情形）

c 老師 # 請領- 一份。

d 老師 # 請領＝ 一份。

如上面所說，台語輕聲規律的條件之一，是必須出現在主要語法範疇 NP，VP，或 S 的末尾。如果同一個 NP 之內的代名詞或數量語後面還有名詞時，不能輕聲化（如下例的「阮」與「一份」）。

9a 老師 # 指導（*＝）阮小弟。

b 老師 # 請領（*＝）一份薪水。

上面有關代名詞和數量語的輕聲化規律幾乎沒有例外。另外一種是動詞補

語，[VV]VP 裡的 V 的輕聲化。前者牽涉到整個主要句法單位 NP，後者牽涉到動詞詞尾。前者所有的代名詞嚴格遵守聲調輕聲化規律。後者卻是動詞補語的個別現象。

2) [VV]VP，[V NP V]VP 內部的 V 和 NP V 的輕聲化

10 放 = 出來 講 = 落去

動詞後面若有數量詞及補語，並且都在 VP 末尾，這時可以兩個都輕聲（如句 11a），也可以兩個都不輕聲（如句 11b），也可以只有最後的補語輕聲（11c），但是不能只有中間的數量語輕聲（句 11d），因為輕聲不能出現在 VP 的中間。

11a 送 = 三本來

└ ㄊ ㄊ ㄊ

b 送三本 # 來

└ ㄊ ㄊ ㄊ ㄌ

c 送三本 # = 來

└ ㄊ ㄊ ㄊ ㄌ

d *送 = 三本 # 來

*└ ㄊ ㄊ ㄌ

如果數量詞是疑問詞，就有語意重點，不能輕聲化，並且後面的語音停頓也不能省略（句 12b）。比較上面的句 11 裡的「三本」，後面的語音停頓可以有（c），也可以沒有（a）。句 12a 的“幾本”是不定數量詞，不是疑問詞，相當於英語的‘some’，不是語意重點。

12a 送 = 幾本來 重點在動詞

└ ㄊ ㄊ ㄊ

b 送幾本 # 來？ 重點在數量疑問詞

V+V，V+NP+V 結構中的第二個 V 有下面幾種情形：

時段語：如在賓語之前一律不輕聲，在賓語之後有的輕聲（起來，落去，去，著），有的不輕聲（完，了，煞），有的可以輕聲可以不輕聲（掉）

時態語：一律輕聲（咧，啊，eh）

趨向補語：如在賓語前不輕聲，賓語後一律輕聲（起來，落去，出去，去，來）

結果補語：有的輕聲（開，走），有的不輕聲（飽，清氣），有的可以輕聲可以不輕聲（死，=死）

3）名詞詞尾只有少數輕聲（=先生，=家，=氏，=兮，=也，=字，=月，=時，=日，=裡），絕大部分不輕聲。（如：太太，小姐，主任，局長，仔，姑，伯，叔，姨，禮拜，先生娘，兄，頭）。

（注：年輕一代開始有人說不輕聲的「陳先生」。台灣華語中的「先生」絕大部份人不輕聲。）

台語裡可以輕聲的都是虛詞，而虛詞當中有些必須輕聲（台語裡只出現在句尾的語氣詞與只出現在名詞末尾的虛詞屬於這一類），有些不可以輕聲（如量詞，數詞單獨做數量語時），有些在主要句法單位的末尾就輕聲，不在末尾就不輕聲（如大部分時段語，少部分動詞補語，和所有的趨向動詞）。

3. 重音向後傳調（輕聲調值的向前同化）

與其他語音簡化現象

各類語音簡化規律產生異形詞。常用語詞先受到影響並不限於某一個語法範疇，但在同一個語法範疇內有詞匯擴散現象。除非有特別功能與新異形語劃分範圍，舊異形語遲早會被淘汰。本節先討論輕聲詞向重音音節的調值同化，然後再討論其他語音簡化現象。

a) 重音向後傳調（輕聲調值向前同化）的起因與發音特點

台語之所以有輕聲是因為前面的音節有了重音。輕聲在台語裡有兩種發音：

一、輕、短、而中低：輕聲詞失去聲調的對立，調值中低而音程短，是一種語音上的簡化。

二、輕而長、承接前面重音的高低調值：也就是重音音節的聲調，傳到後面

的輕音節上。當前面是高、中調時，一高一低，不容易發音，如調值隨著前面的調值高低發音，則比較省事。反正輕聲詞已經失去原來的聲調，進一步簡化並不影響辨認。值得注意的是這種調值向前同化的音節都比一般最後不輕聲化的音節長而輕（ㄟ，→），有別於一般的第一聲（ㄈ）或第七聲（ㄊ）。

句尾語氣詞都是輕聲詞，常受到句調的影響拉長音程。這時它的調值可能隨著前面重音的字音調值變化（如：「搬 = 來 ah！」），雖然也有隨前變化的現象，由於情形十分複雜，不在本文討論。其他語詞的輕聲隨前同化如在句尾，也跟句調有密切關係。句調與句尾語氣詞是隨著場合情況，個人身份，地區鄉音的差異而變化，也和個人常用句調起伏高低的習慣有關。

下面是代名詞「人」，在七個聲調後的三種發音：

- 1) 一般輕聲的情形。音質中低，短而輕。
- 2) 調值向前同化的情形。有高而長，中而長，和不變（也就是中低而短）三種情形。
- 3) 有語意重點或是普通名詞「人」的情形。按本調調值ㄌ發音。

| 向後傳調的重音 | | 一聲 | 二聲 | 三聲 | 四聲 |
|----------|--|-----|-----|-----|--------------|
| | | 傷人 | 搶人 | 看人 | 踢人 |
| 1a 一般情形 | | ㄈㄊ | ㄈㄊ | ㄈㄊ | ㄈㄊ |
| b 調值隨前同化 | | ㄈㄊㄟ | ㄈㄊ→ | ㄈㄊ | ㄈㄊ→ |
| c 焦點在代名詞 | | ㄈㄌ | ㄈㄌ | ㄈㄌ | ㄈㄌ |
| 向後傳調的重音 | | 五聲 | | 七聲 | 八聲 |
| | | 扶人 | | 順人 | 逆人 gèk lāng |
| 1a 一般情形 | | ㄌㄊ | | ㄌㄊ | ㄌㄊ |
| b 調值隨前同化 | | ㄌㄊ→ | | ㄌㄊ→ | ㄌㄊ→ / \$ ㄌㄊㄟ |
| c 焦點在代名詞 | | ㄌㄌ | | ㄌㄌ | ㄌㄌ |

第八聲（「）之後大多數方言的隨前同化是中平（卜→，高平的方言很少。）“\$”表有限制。

下面是在同一種聲調（第一聲）之後，各種不同的原調，唸本調以及輕聲化不向前同化和向前同化時的發音。後兩種情形，不管原來的本調如何，輕聲化時都是相同的發音，這是失去詞匯聲調的有力證明。每一聲舉幾個不同詞類的例子。

| 調值隨前同化的輕聲 | 一聲 | 二聲 | 三聲 | 四聲 |
|-----------|------|-----|-------|---------------|
| | \$牽過 | | | |
| | 傷個 | 傷阮 | \$燒死 | \$牽咧啊 |
| | 牽伊 | 牽我 | 牽去 | 牽咧 |
| 2a 焦點在後 | 「「 | 「卜 | | |
| b 焦點在動詞 | 「卜 | 「卜 | 「卜 | 「卜 |
| c 調值隨前同化 | 「卜→ | 「卜→ | 「卜→ | 「卜→ |
| | 五聲 | | 七聲 | 八聲（入聲） 雙音輕聲 |
| | 傷人 | | \$燒掉啊 | \$傷著 |
| | 牽來 | | 燒掉 | \$牽落 \$牽落來 |
| 2a 焦點在後 | 「レ | | | |
| b 焦點在動詞 | 「卜 | | 「卜 | 「卜 」「卜卜 |
| c 調值隨前同化 | 「卜→ | | 「卜→ | \$「卜→ \$「卜→卜→ |

調值向前同化的現象並不出現於所有 VP 詞尾輕聲詞。代名詞單音節的全部詞匯可以輕聲化，時段語部分詞匯輕聲化，但不一定都向前同化，結果補語本來就不全部輕聲化，輕聲化的也不全部向前同化。（數代語輕聲與補語輕聲的不同，請看 2.2 節，例句 8-12）。

一般名詞只有個別的詞尾輕聲化，並且少有隨前同化。如「張 = 先生，張 = 家」的輕聲詞尾並不向前同化。下例的「啊，兮」不輕聲的已被淘汰，調值向前

同化情形也很不均勻。例如「張兮」，有人承調和不承調都說，有人只說承調的，又有人只說不承調的。

| | | | | |
|----------|-------|-------|-----|-------|
| | 輝啊 | 偉啊 | 秀啊 | 福啊 |
| | 張兮 | 董兮 | 蔡兮 | 卓兮 |
| 3a 一般情形 | ┐ ㄘ | ┐ ㄘ | ┐ ㄘ | ┐ ㄘ |
| b 調值隨前同化 | ┐ ㄘ → | ┐ ㄘ → | ┐ ㄘ | ┐ ㄘ → |

| | | | |
|----------|-------|-------|-------|
| | 桃啊 | 壽啊 | 月啊 |
| | 吳兮 | 鄭兮 | 俗兮 |
| 3a 一般情形 | ┐ ㄘ | ┐ ㄘ | ┐ ㄘ |
| b 調值隨前同化 | ┐ ㄘ → | ┐ ㄘ → | ┐ ㄘ → |

chit= e ° ㄟ hit= e ° ㄟ 的來源對筆者是個大謎，有可能來自 chit-ê，hit-ê，但是問題很多。一、ê 不是輕聲，跟一般的輕聲隨前同化，大異其趣。二、chit ㄘ、hit ㄘ 都有過變調，跟一般的語意重點不但本身不變調，還影響後面音節的調值，大為不同。三、chit-ê，hit-ê 跟三個，四個一樣，後面可以再加名詞，如三個人，四個人，「這個人，彼個人」。chit= e °，hit= e ° 以輕聲的形式不能加名詞。因此我們擬構後者來自已經被淘汰的「這一兮，彼一兮」
*chit-ch it= e ° ㄘ ㄟ *hit-chit= e ° ㄘ ㄟ。

| | | | | | |
|----------|--------|-----|-----|----------|-------|
| | 這個 | 彼個 | 四個 | 這一兮 | 彼一兮 |
| 4a 一般情形 | a ㄘ ㄟ | ㄘ ㄟ | ㄘ ㄟ | *c ㄘ ㄟ ㄘ | ㄘ ㄟ ㄘ |
| b 調值隨前同化 | *b ㄘ ㄟ | ㄘ ㄟ | | *d ㄘ ㄟ ㄟ | ㄘ ㄟ ㄟ |
| | | | | e ㄘ ㄟ | ㄘ ㄟ |

b) 重音向後傳調（輕聲調值隨前同化）的擴大過程

輕聲詞調值向前同化的規律運用範圍還在擴大之中。運用範圍限制較少的次

方言（有\$號）都可接受，限制較多的就不接受。有些是因個別詞匯而異，例如「\$牽過，\$牽著」「牽去，牽來」。有些是以語音或詞類做條件：例如入聲字的輕聲調值隨前同化，只限於台灣的少數方言，雙音詞更有限。常用和速度引起個別詞簡化，然後帶動全詞類簡化。

c) 重音向後傳調（輕聲調值隨前同化）的現時功能

輕聲詞通常是沒有語意重點的詞，常受到句調的影響拉長音程。這時它的調值隨著前面的重音調值變化，這種調值向前同化（regressive assimilation）沒有標誌語法作用，只有表示語氣的功能。又因句調和語氣詞的地方差很大，向前同化的現象與規律既跟句調密切配合，也就有標誌地域的功能。有些語詞（如帶詞尾「兮」、「啊」的名詞，「張兮，阿輝兮」、「阿花啊」）在一些地域沒有向前同化的舊語詞幾乎完全消失，只通行同化後的語詞，這些語詞也就沒有表達親密關係，或表露地方鄉音的功能。

5a 牽=我[卜↗] 罵=我[卜→] 損=我[卜]

b 牽=咧 坐=咧 khng\=咧

鍾=兮 牽=兮 鄭=兮 蔡=兮

d) 各別的語音簡化現象

台語有幾個語音簡化規律只影響到個別的詞匯，所產生的異形語沒有新功能。由於舊異形語沒有特別功能，因而被淘汰。分佈情形是常用語詞受到影響，但不限於某一個語法範疇。不常用的語詞雖然有同樣的語音和語法條件也沒有語音簡化。（例如「新舊、新牌、新班」都有“n-p”的語音條件，都是名詞，然而都不像6a的「新婦」那樣有發音部位的同化現象（m-p）。）

1) 音節尾向後子音的發音部位同化 homorganic assimilation

6a 新婦 sin-pū [simpū]

b 身軀 sin-khu [sengkhu]

c 斟酌 chim-chiok [tsintsio] （不普遍，但同一人新舊不兩用）

2) 隨前鼻音化形成長輔音 (限於詞匯內部)

部位同化 濁音化

7a 干單 kan=ta kan-taⁿ > [kanna ㄣ ㄣ]

b 連鞭 liân-piⁿ > [liampiⁿ] > [liammi ㄣ ㄣ]

c 今旦日 > 今仔日 kim-tāⁿ-jit > [kintaⁿ-jit] > [kinna-dzit]

d 明旦載 > 明仔載 bêng-tāⁿ-chài > [bintaⁿ-tsai] > [binna-tsai]

3) 零聲母 (喉塞音) 隨前同化 (限於「仔, 個」; 有人也用於「的」) 快速度言談中「去」也有隨前同化的現象。很可能先變化為零聲母。

8a 粒仔 liáp-ā > [liabba]

b 杉仔 sam-ā > [samma]

c 賊仔 chhát-ā > [chhalla]

d 斫仔 kan-ā > [kanna]

e 竹仔 tek-ā > [tegga]

f 松仔 chheng-ā > [chhengnga]

g 逐個 ták-ê > [tagg-e ㄣ ㄣ]

h 這個 chit-ê > [chille ㄣ ㄣ]

i 彼個 hit-ê > [hille ㄣ ㄣ]

j 六個 lák-ê > [lagge ㄣ ㄣ]

k 入去 jíp=khì > [jibbi]

4) 合音化現象

合音是兩個音節簡化為一個 (有關台語的合音描述, 請看鄭良偉 1985b)

13a 拍ㄇ見 [pah-m-kiⁿ → phang ㄣ kiⁿ ㄣ]

b 昨昏 [cha-hng → chang ㄣ]

這些語音簡化所影響的只有個別的語詞, 合於語音條件而不受影響的佔絕大的比例。

4. 數量語

本節先將數量語按語意分類，然後觀察各種同義語。（因篇幅關係有些省略）

4.1 數量語的定義與種類

廣義的數量語 (QNT) 是可以回答「佢濟？」【多少？】或者「幾+量詞」的語詞。按照這個定義，數量包括數目數量語與數量形容語，估計語與代替語。數量語的結構又有詞匯，詞法，詞組等不同單位。

4.2 數目語的邏輯結構

a) 數目語是用來回答「佢濟-量詞？」或者「幾-量詞？」的語詞除去量詞所剩下來的部分。（如：句1的「十」、「十二萬」）

1 有幾本？有佢濟本？ 【有幾本？有多少本？】

十（本）。十二萬（本）。

數目單位詞 (NU)（十、百、千）與量詞 (M)（枝、本、條...），都出現在基本數詞（d：一、二、三……）之後。

d-M 三枝 幾本

d-NU 三十 兩百 五千 六萬 九億 幾百

但是兩者不同的特點更多，最主要的不同在於同一個數量語裡量詞只能有一個；數目單位可以有兩個或者兩個以上。前後連起來，形成一個數目，修飾量詞。

b) 萬以上數目語的串連---萬、億、兆

QNT : Num + M 數量語：數目語 + 量詞

Num : <Num4 + NU12> <Num4 + NU8> <Num4 + NU4> + <Num4>

數目語：<萬元數+兆> <萬元數+億> <萬元數+萬> + <萬元數>

[tiō , ek , bān]

Num4 代表四位數目 (0000-9999)。漢語數目結構是四位進階，不同於英語的三位進階。中文書面語裡，阿拉伯數字受到英語的影響，每三位用一個逗點分開。但不反映在口語裡。新加坡的華語與福建話有如下的用法：三萬 (30,000) 說成「三十千」。五萬八 (58,000) 說成「五十八千」。可以說是用一個語言的語法與詞匯表達另一個語言的語意結構，是不同語言的語意結構影響語法結構的一個例子。這種語言接觸所產生的同義語（如：「三萬」與「三十千」）的淘汰或共存現象形成一種類型，還需要再觀察。

c) 萬以下數目語的串連---十、百、千

Num4 : <d + NU3> <d + NU2> <d + NU1> <d >

萬元數：<基數+千> <基數+百> <基數+十> <基數>

[chheng, pah, chap]

4.3 基本數詞文白發音的功能劃分

台語的基本數詞大部分可以分文白兩類。「一、二」文白之間有一定的語音對應關係，應該算做異詞同義語或同詞異形語，本文暫不討論。兩類功能劃分如下：

| | | | | | | | | | | |
|-----|------|------|-----------------|----|------|------|-------|-----|-----|------|
| 文言層 | it | jī | sam | sù | ngó' | liòk | chhit | pat | kiū | lêng |
| | 一 | 二 | 三 | 四 | 五 | 六 | 七 | 八 | 九 | 零 |
| 白話層 | chít | nāng | sa ⁿ | sī | gō' | lák | chhit | peh | kāu | |
| | (一) | 兩 | 三 | 四 | 五 | 六 | 七 | 八 | 九 | |

文言層只用於號碼，如：一三 [it sam]，五三八四 [ngó' sam pat sù]。

白話層用於有語法結構的語詞裡，如：十三 [cháp-saⁿ]，五百八十四 [gō'-pah peh-cháp sī]。但是最常用的前兩個數目文白卻有特別的用法分佈。

第一類一 [it]、二 [jī] 是屬於文言的詞匯，出現在十之前或之後。這類發音也用於數序語（如：第二，初一）將在 4.5 節討論。又用於兩個單位語的數詞，

省略第二個的簡化語（如：八百一、五萬二）將在4.7討論。

第二類 *chit*, *nāg* 出現於量詞或數量單位詞之前。（如：兩枝，一禮拜）

台語數字有文言音、白話音兩套發音。語言學者一般認為起源於過去屢次的語言接觸。筆者(1987)曾討論文白之間的分佈。我們認為新舊兩個語言層 (*substrata*) 共存後互動調整，由於詞匯記憶的簡化壓力，劃分使用範圍，省去特定條件中的某一同義語。結果造成現代台語裡兩套數詞文白發音，各有各的功能和使用範圍。

新加坡的福建話號碼的叫法只唸白話音，台灣年青一代也有只唸白話音，而失去文白共用、各有特定使用範圍的趨勢。

日本的幼小兒童常有不會分辨兩套數目的情形。例如「八日」唸成「ハチニチ」而不念「ようか」，要到上學幾年以後才能正確掌握稱數法。

（注：有關詞匯演變的過程和演變因素，日語有很明顯的例子。日語的數詞同義語來自不同語族的漢語數詞。兩個不同的語層根據不同的詞法條件互補共存。本來的“和語”（指日語原來的詞匯）跟漢語移借語同時存在，各有各的使用範圍。無論是數序語或數量語，“和語”數目使用範圍愈來愈小，但是常用的數目如「一，二」還能單獨使用，或是和漢語同用。不常用的只有漢語詞匯。）

兩個不同的詞匯系統在一個語言裡形成兩個語言層，同時使用時，如能劃分功能，兩者都能保留下來。如果功能相同，較少用的語層經不起簡化壓力，遲早會被淘汰。淘汰的過程乃是按照語言擴散理論變化，也就是一個詞一個詞變化。有某語層的淘汰與某個別詞匯的淘汰兩種情形，都跟頻度有關。語意類似的兩個語層的詞匯如要被淘汰，由使用功能較窄，較不常用的一層開始（例如台語的文言層，日語的和語層數目語），但是保守的常用個別詞能和另外一層裡的同義語共存一段時間。語意功能類似的同一個語言層裡，個別詞匯如被淘汰，通常是由最不常用的詞開始，而最常用的詞相當保守，不容易變化，通常能共存或獨用一段時間。

4.4 「幾」和「佻濟[joā-chē]」【多少】之間

就語法而言，「幾」是基本數詞的問詞（如：幾本）。凡是基本數詞可以出現的位置「幾」都可以出現；「佻濟」在語法上是數量語的問詞（如：有佻濟物？），也是數目語的問詞（如：佻濟本），成分上是程度副詞與形容詞的偏正結構，與「佻長、佻貴，佻深」【多長、多貴，多深】同結構，不同於普通話並列結構的「多少」。在語意功能上「佻濟」不能再加數量形容詞，因此與國語的「多少」是對譯語，用法大致相同。兩個同義語之間的選擇從下面四方面觀察不同的功能。可以了解兩者雖然有時意義相同卻能共存的理由。

【註：關於普通話的「幾個，多少」與水優有極深入的研究。本節語料部分來自他的講稿「對疑問數詞的若干疑問」（1991.1 夏威夷大學）。】

a) 量的大小

趙元任(1968: 582)說普通話的「幾」指一到十(d)的問詞，「多少」指更大的數目。台語的「幾」不一定只指一到十，「佻濟」【多少】除了指十以上到九千九百九十九(Num4)或更多的數目(Num)，也指一到十(d)。下面由(4.1)所提的串連結構來看「幾」和「多少」的分佈，可以看出「幾」的基本用法和特別用法。這裡不能不提的是，台語的語意不一定跟普通話一致，台灣的國語也不一定跟以前的或現在的大陸普通話一樣。

一、當做名詞詞組(NP)用

1a *你有幾？

你有幾本？

b 你有佻濟？

你有多少本？

二、當做數量語(QNT)用

2a *你有幾書？

*你有幾書？

b 你有佻濟書？

你有多少書？

三、當 Num + M 中的 Num (量詞之前的數目語) 用

A 當任何數目語 (Num) 用

- | | |
|------------|----------|
| 3a 你有幾本？ | 你有幾本？ |
| b * 你有佢濟本？ | * 你有多少本？ |

B 當做萬以下的數目語 (Num4) 用

- | | |
|-----------|---------|
| 4a 你有幾萬本？ | 你有幾萬本？ |
| b 你有佢濟萬本？ | 你有多少萬本？ |
| 5a * 三萬閣幾 | * 三萬又幾 |
| b 三千閣若濟 | 三千又多少 |
| c 三萬閣佢濟？ | 三萬又多少？ |
| 6a 你有佢濟萬？ | 你有多少萬？ |
| b 你有幾萬？ | 你有幾萬？ |

趙元任先生曾來函 (1966) 指出普通話裡類似 7a 的句子宜改為 7b，因為「十」以上的問詞經常用「多少」。台灣的國語沒有這種功能上的劃分。

7a 每枝三箍的鉛筆，買兩打愛付幾箍？ (how many dollars)

【每枝三元的鉛筆，買了兩打要付幾元？】

b 每枝三箍的鉛筆，買兩打愛付佢濟／幾圓？ (how much)

【每枝三元的鉛筆，買了兩打要付多少？】

四、當做 d+NU 中的 d 用。Num4 內的數目單位語千、百、十前面的基本數詞只可用「幾」，不能用「佢濟」來代替。

- | | |
|--------------|------------|
| 8a 你有幾十本書？ | 你有幾十本書？ |
| b * 你有佢濟十本書？ | * 你有多少十本書？ |
| c 你有十幾？ | 你有十幾？ |
| d * 你有十佢濟？ | * 你有十多少？ |
| 9a 你有幾百？ | 你有幾百？ |
| b * 你有佢濟百？ | * 你有多少百？ |

d 你是一九九幾出國的？

你是一九九幾出國的？

e * 你是一九九佰濟出國的？

* 你是一九九多少出國的？

b) 量的可數不可數

漢語的語法不直接表達像英語的 *how much* 與 *how many* 之間的分別。但是由於漢語的數量問詞裡的量詞充分表達數量的單位觀念，「幾+量詞，佰濟+量詞」期待含有量詞的回答，大約等於 *how many*。沒有量詞的數量問詞「佰濟」【多少】所期待的回答可能有量詞（如：五本）可能沒有量詞（如：很多，更少），不分 *how many* 與 *how much*。就是否要求量詞而言兩個疑問詞不是同義語，下面試將這兩個問詞放在不同的結構裡，觀察其語意。值得注意的是凡是「幾M」可以出現的結構，「佰濟」也可以出現，跟數的大小無關。就大小而言兩詞卻是同義語。請求聽話人選擇

12a * 你 beh 幾？你 beh 幾箍？

* 你要幾？你要幾元？

b 你 beh 佰濟？** 你 beh 佰濟箍？

你要多少？你要多少元？

b 你 beh 佰濟錢？你 beh 幾圓？

你要多少錢？

「幾圓」的「圓」是古時的貨幣單位。現代台語不再是貨幣單位，「幾圓」只有「多少錢」的意思。隨著文化的變遷而詞匯化的「幾圓」的舊語意已被淘汰，人們不再分析該詞含有量詞。

• 條件選擇

13a 愛幾個就有幾個。(however many)

要幾個就有幾個。

b 愛要佰濟就有佰濟。(however much/many) 要多少就有多少。

• 無條件選擇

14a 無論幾本，都買落來。(no matter how many) 無論幾本，都買下來。

b 無論佰濟，都買落來。(no matter how much/many) 無論多少，都買下來。

• 高動詞 (matrix verb) 選擇

15a 我無清楚你 beh 幾本。(how many) 我不明白你要幾本。

b 我無清楚你 beh 佻濟。(how much/many) 我不明白你要多少。

• 不定選擇當做非語意重點不定數量語用。

否定時可用「佻濟」，沒有歧義 (16)。肯定時需要用輕聲辨別語意 (17a, b)。「佻濟」不能輕聲 (17c)，改用可以輕聲的「一寡」【一些】(17d)，兩者因避免歧義而有不同的出現範圍。北京話的「多少」也有類似現象。

16a 伊無想 beh 買幾隻。(not many) * 他不想買幾隻。

b 伊無想 beh 買佻濟。(not much/many) 他不想買多少。

17a 伊有想 beh 買 = 幾隻。(a few) 他想買幾隻。

b 伊有想 beh 買幾隻？(how many?) 他想買幾隻？。

c * 伊有想 beh 買 = 佻濟。(a few/little) * 他想買 = 多少。

d 伊有想 beh 買 = 一寡。(a few/little) 他想買一些。

18a 請替我買幾張郵票。(a few) 請幫我買幾張郵票。

b * 請替我買佻濟(張)郵票。 * 請幫我買多少(張)郵票。

c 請替我買一寡郵票。 請幫我買一些郵票。

c) 當數量與數序的問詞用

「幾」可以用於數量問詞也可以用於序數問詞，「佻濟」只能用於數量。一般序數詞(如：第二，初一)將在 4.5 節討論。

19a 數序語：幾號，幾年生的，第幾，幾月幾日，拜幾。

b 數量語：佻濟個號碼。佻濟日，佻濟年，佻濟月日，佻濟禮拜；
幾日，幾年。

d) 省略第二個單位語時的基本數詞的問詞

台語裡有兩個單位語的數目語(如：五萬兩千)，可以省略第二個單位語

（如：千）。這種簡化語（如：八百一、五萬二。一般情形將在 4.7 討論）裡省去單位語的數目語，雖然語意上經常代表十以上（如：「二」代表「兩千」），這個簡化語的問詞只能用「幾」不能用「佰濟」。這是因為後面有數目量詞千、百、十的省略。

20a 三萬幾？（幾 = 幾千）

三萬幾？

b * 三千佰濟？（佰濟 = 任何千以內的數目。）

* 三千多少？

c 你有三百幾？（幾 = 幾十）

你有三百幾？

d * 你有三百佰濟？

* 你有三百多少？

總觀上面的討論，「幾」與「佰濟」同義語之間的選擇，主要在於語法結構的不同，而不在於語意的不同。「幾」後面一定要有量詞或數目單位語，後者之前（不管有無省略）都要用「幾」而不能用「佰濟」。「幾」表「十」以下的語意來自其出現的詞法結構。至於「幾」字語的數量與數序之別，將在下節討論。

4.5 數序語與數量語

數序與數量是兩個完全不同的概念。這個概念上的不同反映在下面語層或語法上的不同，充分反映過去不同的詞法形式（即詞頭的使用或不使用），不同語層語詞的選擇，不同單位語的選用，不同的輕聲規律：

1）數序語的問詞只能用「幾」，不能用「佰濟」。數量語的問詞兩者都可用，也就是說「佰濟」一定表數量，「幾」則有歧義，可能表數量也可能表序數。（例語請看上節 4.4 的 b 項）

2）以詞頭構成的只可能是數序語，不可能是數量語，自然語言中通稱在前，特稱在後是一個類型（如英語 Dr. Wang, Miss Smith；古漢語：祖甲，祖乙；台語：阿母）；特稱在前，通稱在後又是另外一個類型（如日語：山下博士，英子さん）。

漢語的數序通稱語用詞頭「第、初、禮拜、星期」是 VO 類型語言層次的特點，與 OV 語言類型的日語相反。（日曜日、月曜日、水曜日、金曜日、十一日め）但是漢語通稱在後的例子多於在前的例子（如下面 2 的單位語）。

- 1a 初三，第三日，禮拜三
- b 第三個號碼，第三，第三號

3) 採用不同的單位語：

2a 數序專用的單位語：號，巷，弄，段，月

b 數量專用的單位語：個號碼，條巷子，月日

數量專用的單位語如加詞頭「第」就變成數序語（如：第三個號碼）。

c 兩用的單位語：年，日

4) 只有數序語的詞尾量詞可能輕聲化，但是特稱沒有輕聲的例子。數量語在動詞之後可能全語輕聲。但量詞不能單獨輕聲，因為量詞與數目語在數量語裡同樣重要。兩種輕聲化都起因於語音簡化，開始於常用的語詞，但由於語法的重新調整，異形語的存廢與輕聲的功能都不同。

3a 王 = 兮 第三 = 兮 五 = 月 （只選常用部分輕聲）

b *王兮 *第三兮 ??五月 （不輕聲的已被淘汰）

4a 寫 = 幾字 買 = 兩本 （重點不在數量語時輕聲化）

b 寫幾字？ 買兩本 （重點在數量語時不輕聲化）

5) 以不同語言層次的基本數詞分辨數量與數序

在 4.3 節已經說過：不含數量單位語而且只以基本數詞構成的數詞，只能以文言音發音，表數序（一九九一年，二五三室）。省略量詞的數字如以文言發音一定是數序語（一九九一，二一二，三五三一六八二）。

在同節裡也說過基本數詞的白話層當中，最常用的前兩個數目又分兩層：it，ji 用於表達數序與數量的不同。前者只用於數序，後者只用於數量。「三」以上

的基數就沒有發音上的差別。

| 數序語 | 數量語 | 數序語 | 數量語 |
|------------|-----------|-------------------------|-----------------------|
| 5a 初二 [ji] | 兩日 [nŋg] | c 初三 [sa ⁿ] | 三日 [sa ⁿ] |
| b 第一 [it] | 一日 [chit] | d 第九 [káu] | 九日 [káu] |

在普通話裡的「二」與「兩」裡也可以看到數序與數量反映在不同語言層的遺跡。在閩南話裡也有較特別的現象。如廣西平南話（李玉 1989）有如下的現象：

『基數和序數的不同也可以靠輔音或元音的變化表達…。如：

- 6a： 一 [it 卜] 二 [i 卜] 三 [saⁿ 卜] 四 [si 卜]
 b： 第一 [tsit 卜] 第二 [no 卜] 第三 [sam 卜] 第四 [sy 卜]
 五 [uou 卜] 六 [la? 卜] 七 [ts'it 卜] 八 [pe? 卜]
 第五 [nguou 卜] 第六 [la? 卜] 第七 [ts'ie? 卜] 第八 [pat 卜]
 九 [kao 卜] 十 [sap 卜]
 第九 [kou 卜] 第十 [tsap 卜]

6a 是基數，6b 是序數例如：「三斤」講 [saⁿ 卜斤]，不講 [sam 卜斤]；「二叔」講 [no 卜叔]，不講 [i 卜叔]。平南話的基數用法近於台語的白話音，數序近於台語的文言音，但是「一，二，十」三個數詞剛好相反。台語利用文白之分表達數序與數量之別，只限於「一」與「二」，平南語則從「一」到「十」都加以分別，可見哪一個語層代表哪一種語意並沒有絕對的通則，但利用文白之分，在特定條件下異形語不共存，確是共同的原則。

台語數序語複雜的語法、語音現象，反映著過去語言層次同形語或同義語的混合，調整與淘汰的歷史。結果是很巧妙地利用不同的原則表達數序與數量之間的不同。

一般說來，在台語裡的同義語之間，固定的結構下不會有歧義。

7a 書面語： 一月八日 四月二十日

b 口語： 一月初八 四月二十

如在數序語裡用了數量語、數序語通用的單位語「年，日，區」，又省略

「第」字就常有歧義，需靠上下文來判斷說話人的原意。

8a 我二十會來。

b 你beh幾斤？ 二十。

【你要幾斤。二十。】

如果不看書面語，口語系統裡已經發展一些固定結構，讓說話人在實際會話裡只靠數量語或數序語特用的固定結構而不需要靠數序語、數量語以外的上下文。主要的方法是數序語所用的單位詞有別於數量語的單位詞。其他的線索是不同語言變化規律的副產品。結果是愈常用的數序語辨認的線索愈多：共有絕對可靠的詞頭，常用數詞的文言成分 [it, ji]，又有常用通稱的「兮，月」的輕聲三種線索。值得一提的是這種特列結構，是口語系統裡愈常用的愈傾向於用多種線索，也愈跟普通話或書面語的結構有所差異（以“\$”標誌）。

| 台 語 | | 普 通 話 | |
|----------|-----------|--------|------|
| 數序語 | 數量語 | 數序語 | 數量語 |
| 9a 三樓 | 三層樓 | 三樓 | 三層樓 |
| b \$四= 月 | \$四月日／四個月 | 四月 | 四個月 |
| c 五點 | \$五點鐘 | 五點／五點鐘 | 五個鐘頭 |
| d 六年級 | 六個年級 | 六年級 | 六個年級 |
| e 初三 | \$三日 | 初三／三日 | 三天 |
| f 禮拜六 | \$六禮拜 | 禮拜六 | 六個禮拜 |
| g 第三禮拜 | \$三禮拜 | 第三個禮拜 | 三個禮拜 |
| h 第四個 | 四個 | 第四個 | 四個 |
| i \$三= 兮 | 三個 | 第三個 | 三個 |

4.6 數目單位語的連串與各種簡化

a) 句法結構

一般數量語由數詞及量詞 (d+M) 或是數詞單位詞 (d+NU) 組成。無論是它們之間或和其他語詞的結合都有其語法（詞匯、詞法、或句法）結構，變調分界嚴格取決於該結構，在句法上的結合相當自由。

d+M 與 d+M 之間是加法的關係，照句法需要有停頓。台語的句法裡用動詞「加」，或連接詞「閣、及」，或副詞加動詞「閣加」連接兩個 d+M。各個 d+M 組成一個 NP，兩個 NP 組成一個大的 NP。

| NP # V-NP | NP# Conj-NP | NP# Adv- V- VP |
|-------------|-------------|----------------|
| 10a 四十 # 加四 | 四十 # 閣四 | 四十 # 閣加四 |
| b 四百 # 加四十 | 四千 # 閣四百 | 四萬 # 閣加四千 |
| c 四億 # 加四萬 | 四億 # 閣四萬 | 四億 # 閣加四萬 |
| 【四億加四萬 | 四億又四萬 | 四億又加四萬】 |

另外一個連接數量語的動詞是「超過」或是「過」，數量單位需要由大而小。

| | | |
|--------------|-----------|-----------|
| 10d 四百 # 過四十 | 四百 # 超過四十 | 四百 # 閣過四十 |
|--------------|-----------|-----------|

b) 詞法化

較常見的數量語，結構上都很簡略。內部的結構不同於統御 NP 外部的句法規律有三：

1) 語音有特別的變化

變調分界一定要省略（如：四十四），或可以省略（如：四百（#）四十），不像一般句法裡一定要有變調分界。

2) 搭配關係固定化

d-NU 和 d-NU 之間沒有任何語詞。數量單位由大而小，順序不能對調，缺乏造語力 (productivity)，不像句法那樣自由靈活，有造語力。

| | | |
|--------------|-----------|-----------|
| 11a 四千 # 加四萬 | 四千 # 閣四十一 | 四千 # 閣加四千 |
| b 四百 # 減三百 | 三十 # 除十 | 四百 # 乘三 |
| c 四百 # 抑是三百 | 三十 # 抑三百 | 四、五百 |
| d *四千 - 四萬 | *四十 - 四千 | *四千 - 四千 |

3) 語意特定化

四千四百只有「4000 加 400 (=4400)」的意義，不能有「4000 乘 400」或「4000 減 400」的意義。更沒有「四千或者四百」的意義。

兩個成分之間的關係語脫落以後，變調分界的有無反映不同的語意關係。基本規律是：兩者之間有乘法關係的形成附加結構(adjunctive)或修飾結構，中間沒有變調分界。

d x NU x NU x M

12a 三- 本

b 十- 個

c 五- 千- 萬- 人

d 五- 萬- 億

兩成分之間有加法關係的算是並列結構，中間有變調分界(#) (Chen, M. 1987)。變調分界的脫落是一種語音簡化，只部分地影響到常用的數量單位「十、百」，沒有影響到「千、萬、億」等單位組成的數量語，應算是反例。

(NP + NP) x M

(NP + NP) x M

13a 四十- 四 - 本

*四十# 四 - 本

b 四百- 四十

*四百# 四十

c *四千- 四百- 本

四千# 四百- 本

d *四萬- 四千

四萬# 四千

「*四十#四」已經被淘汰，「*四千-四百、*四萬-四千」對一般人還不能用。(有些年輕人習慣上只用「四千-四百、四萬-四千」，但是聽到「四千#四百、四萬#四千」也不覺得奇怪。)(這個觀察得自曾金金)

對年輕一代「千」之後沒有變調分界，顯示詞匯擴散的現象。值得注意的是「十、百」無論老幼都不可有停頓，同意義不同形式的兩個發音，為何立刻不用舊同形語？筆者認為，詞法化現象是爲了節省短程記憶處理過程中的時間，簡化的壓力特別大。

4.7 幾個數量特別結構

下面的特別結構都曾在特定條件下經過語詞的省略，語意的固定，以及變調分界的刪除。沒被省略的異形語有的還共存，有的已經被淘汰，很值得探討。

a) 可以追回的第二個單位語的省略

兩個連接著的單位語的數詞，只靠前一個單位語，後面數目的單位語可以省略而仍然能了解簡化語的意義。由於變調分界的省略使這些語詞成爲一個緊湊的單位。

| | | | |
|-----|-------------------|---|---------------------------|
| 14a | 八百- 二十 | → | 八百二 |
| b | 八百- 十 | → | 八百一 |
| c | 六千# 八百 | → | 六千八 |
| d | 六千# 一百 [chít,*it] | → | 六千一 [it] [*chít] |
| e | 五萬# 兩千 [nāng,*jī] | → | 五萬二 [jī,*nāng] |
| f | 五萬# 幾千 | → | 五萬幾 |
| g | 五萬# 佰濟 | → | 五萬佰濟 五萬閣佰濟 |
| h | 一萬# 幾千 | → | (一)萬幾 一萬佰濟 *萬佰濟 |

[it, jī] 跟 [chít, nāng] 之間的選擇，後面有單位語時用後者，沒有時用前者。這個規律可以涵蓋「十一，十二」（參看 4.3）。「二五一十」、「二十」的「一 it」「二 jī」是特別規律。「八百一」指的是「八百十」，應該是從「八百一十」簡化而來的。「八百一」的「一」唸 [it] 不唸 [chít]，是「八百一十」的遺留語，並且省略第二個單位語的規律，產生於省略「一」規律之前。（看下面 b「一」的省略）（注：有一種口訣「一五#一十，十五#二十，二五#三十……」，其中有「一十」）。

一個有趣的問題是，這個簡化究竟是過去發生在歷史上的規律，還是現在仍在運作的規律。如是後者，我們就必得承認在深層結構裡沒有「十八」等數詞，而只有「一十八」。如果是前者我們就必得確認有一個不同於句法的詞法系統，d+NU+d 是其中的一個結構。

b) 單位詞前面「一」的省略

數量語還有一些省略更多，更常用的形式-- NU + d

| | 省略數目量詞 | 省略「一」 |
|-----|------------|-------------------|
| 15a | 三十- 五 → | → 「三」不能省略 |
| b | *一十- 五 → | → 十五 |
| c | *一十# 五 | |
| d | 一百(#)四十 → | ** 一百四 → 百四 |
| e | 一千 # 四百 → | ** 一千四 → 千四 |
| f | 一萬 # 一千 → | ** 一萬一 → 萬一 (有歧義) |
| g | 一億 # 四千萬 → | ** 一億四 → *億四 |
| h | 一斤 # 八兩 → | ** 一斤八 → 斤八 |
| i | 一尺 # 三寸 → | ** 一尺三 → 尺三 |
| j | 一尺 # 五寸 → | ** 一尺五 → 尺五 |

** = 在對比和避免語意混淆的情形下，「一」通常不省略

「*一十五」在古漢語的文獻可以看到，在口語裡早就被淘汰。

15f 的「一千」發音為 *chit-chheng*，省略「千」之後發音為 *it*。*chit* 與 *it* 之間的選擇決定於有無單位語「千」。

國語裡也有「一」的省略規律，但是省略條件與台語不相同。國語裡「一」的省略需要看 NP 以外的條件（如句 18 裡的 NP「一本筆記」裡的「一」需在動詞之後才能省略，變為「本筆記」），台語裡「一」的省略，靠 NP 外部條件的不省略（如句 19），只看 NP 內部的情況（如例 16）。是不是跟變調分界配合主要語法範疇有關需待研究。兩個系統主要的差別在於 NP 在台語裡的孤立性大於國語。

沒有省略「一」的語詞國語能使用，不跟省略的語詞共存；台語一般不使用沒有省略「一」的語詞，兩者也不共存。都是特列結構同義語之一被淘汰的情形。

| 台語一般不說 | 台語能說 | 國語可以說 | 國語不能說 |
|-----------|------|---------|-------|
| 16a **一百四 | 百四 | 17a 一百四 | → *百四 |
| b **一千四 | 千四 | b 一千四 | → *千四 |
| c **一萬四 | 萬四 | c 一萬四 | → *萬四 |

注：**在對比和避免語意混淆的情形下，「一」可以不省略

| 國語能說 | 國語能說 | 台語不能說 | 台語能說 |
|-----------|--------|------------|--------|
| 18a 買本筆記簿 | 買一本筆記簿 | 19a *買本筆記簿 | 買一本筆記簿 |
| b 我去看個人 | 我去看一個人 | b *我去看個人 | 我去看一個人 |

下面「一寡」在動詞之後可以省略為「寡」算是例外。「一寡」跟「一些」一樣，不能用「一」以上的數目，有異於一般數量語（如：「一本，三本」）。除了這個理由以外，「一」所以脫落的原因不外是因為特別常用。

| | |
|--------------|------------|
| 20a 咱來買寡物 | 咱來買一寡物 |
| b 有寡物咱愛買 | 有一寡物咱愛買 |
| c *干單寡仔 tī 遐 | 干單一寡仔 tī 遐 |

c) 單位語前「十」的省略

二 NU d 中的 NU，最小的「十」可以省略（如：二五、二九），其他的數量單位不能省略，「二」以外的基本數詞也不省略後面的「十」（如：*三九）。值得注意的是「十」在所有數量單位中最常用，「二」在所有基本數詞中的頻度僅次於「一」。

d) 量詞-半

| | |
|------------------------|------|
| 21a 一斤 # 八兩 = 一斤 # 過半斤 | → 斤半 |
| b 一尺 # 五寸 = 一尺 # 過半尺 | → 尺半 |

數量單位詞一般不用「半」，變調分界的省略只限在較常用的「十，百」之後。

- 22a 十 - 五 → * 十半
b 一百 - 五十 → 百五 → * 百半
c 一千 # 五百 → 千五 → * 千半
d 一萬 # 五千 → 萬五 → * 萬半

(註：「兩萬半」有特別意義，應該是一種詞匯單位。)

愈常用的語詞愈容易詞法化，因為使用頻率高容易產生簡化的特殊規律（包括語音和語意的特殊化，造語力的受限制）。

詞法結構的方言差特別明顯，是較能表現方言或次方言特點的部分。台南縣關廟、仁德一帶可以說「百半、千半、五千半，萬半」等，常被別地方的人取笑。新加坡華語裡「斤半，萬半，千半」很平常，也有受英語影響的「十一千半」等。

5. 結 論

本文利用輕聲化等語音簡化現象以及數量語的各種簡化現象，比較各種異形語詞的共存與淘汰現象。台灣話的一些語法簡化規律將詞組性語詞 (phrasal expressions) 改成具詞法性的特列結構單位 (參看鄭良偉 1991MS)，產生同義語或類義語。(如：「四萬 # 七千」簡化成「四萬七」，「一斤 # 過半斤」簡化為「斤半」，「有六尺 # hiah 長」變為「六尺長」，「你 / 恁 (#) 的老師」轉變為「恁老師」，「親像麻仔 # hiah 大」簡化成「麻仔大」)。特列結構與詞組性對等語的不同包括三項目：成分結合僵化，語意特別化，語音凝結化 (如：變調分界脫落形成一個單一聲調變化組)。特列結構化的過程很類似詞匯化 (lexicization) (如「愛人」之不同於「所愛的人」)，但是各個特列結構單位 (如六枝，六尺長，大本) 並不需要列在詞匯裡。詞組性語詞並不因為有特列結構、詞匯單位同義語而被淘汰。理由可能是：前者在短程記憶裡組成，不構成長程記憶的負擔，並且常有不同的修辭上的效果，有共存的理由。特列結構內部不容許有

變調分界，如輕聲的一定輕聲，也就是所有的異形語都被淘汰。上述的特列結構如何在語法裡處理是一個有趣的問題。詞匯功能語法（黃居仁 1990，何萬順 1990）似能合理處理個別詞匯的變調和輕聲特點。至於特列結構異形語的被淘汰，是不是在短程記憶的處理上有特別的方式值得研究。

本文觀察的另外兩類同義語詞：因語音簡化而產生以及因不同語層混合所引起的新舊語詞。舊語詞除非有新功能，否則很容易被淘汰，不能與新語詞共存。詞組性單位都不因為有簡化語而被淘汰。句法與詞法顯然是決定共存或淘汰的關鍵。詞法單位方言差，年齡差比句法顯著：「百五，斤半」都是國語沒有的詞法結構。關廟一帶的「千半，萬半」台灣別地方很難接受。廈門話的「陳修一 = 先生」在台灣很少人用，「愛- 嘜愛來」（「愛」要變調。黃正德 1988）年輕人說，而老年人不說。詞法也比句法不容易受外部的影響（Thomason, S.G. & Kaufman, T. 1988; 鄭良偉 1989b）。

從歷史演變的觀點看，我們在輕聲的分布上擬構規律擴充其適用範圍的過程：從個別的詞匯擴充推廣到整個相同語法功能詞類內所有詞匯的語法範疇。輕聲化首先以詞匯擴散開始，不管任何語法範疇凡是常用的個別詞匯都可能受到影響。但是特別常用的語法範疇（如：代名詞與數量語），全詞匯都受到影響，造成整個範疇產生新的功能。

同樣是語音簡化的輕聲化，如出現在個別的虛詞上就沒有表語意重點有無的功能，因為語法結構裡的位置決定其語意重點。在主要語法單位的末尾時一定輕聲（如：走 = 出來），在中間時一定不輕聲（如：走出來遮），沒有表達語意重點的功能，只有表達語法分界的功能。

造成這種沒有語意功能的個別詞匯現象與有語意功能的語法範疇之不同的原因是甚麼？高頻度與擬象原則可能是很合理的推理。代名詞與數量語的各語詞頻率都相當高，新語詞（也就是語音簡化的語詞）出現以後，舊語詞沒有馬上被淘汰，新舊語詞有機會發展出個別的語法、語意功能和使用範圍；其他種類變化，舊語詞很快被淘汰，沒有機會發展新的功能。另外一個因素是輕聲化與表達分界的脫落都跟沒有語音重點有擬象 (iconicity) 關係。一個語詞語氣上沒有加強就容

易語音弱化，有強調，就不弱化。擬象原則與語法範疇配合，形成一個自然而簡單的規律。

詞匯擴散的一個重要起因是不同的規律應用在同一個詞匯組。本文數量與數序兩種不同的觀念有好幾種規律互相競爭：統稱在前特稱在後的原則，採用單位語的原則，以不同語層分別的原則，不同的輕聲規律，詞匯與詞法的簡化等互動調整，沒有一個單一原則足以解釋一切現象。

（本文於民國八十二年二月十八日通過刊登）

附誌：

本文曾在一九九一年台北南港中央研究院第二屆中國境內語言暨語言學國際研討會發表討論，會中承蒙與會者很多寶貴意見，受益匪淺，特此銘謝。又承蒙中央研究院歷史語言研究所出版品編輯委員會細讀後提供深入得體的修改建議，也在此道謝。

參考著作

- 鄭良偉 1987 《從國語看台語的發音》，學生書局。
- 1989a 《國語常用虛詞及其台語對應詞釋例》，文鶴書局。
- 1989b 「從台灣當代小說看漢語語法演變」，《新加坡第一次世界華文教育研討會論集》。
- 1990 「台灣話與普通話裡的時態與時段語」(MS)，收入王士元、丁邦新所編有關漢語論文集。
- 1991 「互動關係、模組化、詞匯擴散--台語動詞性詞語的連調變化」(MS)，第三屆北美洲漢語語言學會議，Cornell 大學。
- 黃正德 1988 「漢語正反問句的模組語法」，《中國語文》4:247-264。
- 李玉 1989 「平南閩南話的音韻特徵及其聲母的古音痕跡」，第二十二屆國際漢藏語言學會議論文。
- 梅祖麟 1987 「三朝北盟會編裡的白話資料」，《中國書目集刊》，第十四卷第二期 27-52。
- 輿水優 1991 「對疑問數詞的若干疑問」(1991.1 夏威夷大學講稿)。
- Chao, Yuen-Ren.
1968 "A Grammar of Spoken Chinese," Berkeley: University of California Press.
- Chen, Matthew.
1987 "The syntax of Xiamen tone sandhi," *Phonology Yearbook*, 4:109-150. New York: Cambridge University Press.
- Cheng, Robert L.
1968 "Tone Sandhi in Taiwanese," *Linguistics*, 41:19-42.
1985b "Sub-syllabic Morphemes in Taiwanese," *Journal of Chinese Linguistics*, 13.1:12-42.

鄭 良 偉

- 1985d "A Comparison of Taiwanese, Taiwan Mandarin, and Peking Mandarin," *Language*, 61.2:352-377.

Cheng, Tsai-fa.

- 1983 "Tonal Features of Proto-South-Min," *Papers in East Asian Languages*, I:66-90.

Her, One-Soon.

- 1990 "Grammatical Functions and Verb Subcategorization in Mandarin Chinese," (A PhD Dissertation, University of Hawaii). Taipei, The Crane Publishing Co., Ltd.

Hsieh, Hsin-I.

- 1990 "In Search of a Grammatical Foundation for Dialect Subgrouping," *Proceedings of the First International Symposium on Chinese Language and Linguistics*, 146-67. Taipei, Taiwan: Academic Press.

Huang, Chu-Ren.

- 1990 "Adjectival Reduplicaiton in Southern Min — a Study of Morpholexical Rules with Syntactic Effects," *Proceedings of the First International Language and Linguistics*, 188-97. Taipei, Taiwan: Academic Press.

Thomason, S.G & Kaufman, T.

- 1988 *Language Contact, Creolization, and Genetic Linguistics*. UH Press.

Wang, William, S-Y.

- 1969 "Competing Changes As a Cause of Residue," *Language*, 45:9-25.

元音與聲調

遠藤 光曉

青山學院大學經濟系

1. 引言

聲母的性質（特別是清濁）與聲調的關係很密切，最明顯的例子就是陰陽調的區別，幾乎所有的漢語方言都有其反映。相形之下，元音與聲調的相互關係似乎相當淡薄。但在個別方言裡不無耐人尋味的現象，本文從漢語方言及別的語言當中收集：（一）元音所引起的聲調變化，（二）聲調所引起的元音變化的實例；進而試圖從發音器官生理機構的觀點解釋這些變化產生的原因。希望通過這些討論對元音與聲調之間的相互關係這個未被全盤查清的問題加深共時上和歷時上的認識。

2. 元音所引起的聲調變化

首先綜觀一下元音所引起的聲調變化實例。

2.1 粵語的入聲

衆所周知，粵語許多方言的入聲根據元音的類別產生分化。¹ 拿廣州話為例，古清入聲逢今短元音念上陰入，逢今長元音念下陰入，如：“北” [pek 5:]

1 Karlgren 1919 (pp.592-593, 漢譯本 446 頁) 已有明確描述。Yue 1976 專門討論這個問題。

— “百” [pa:k 33:]。² 下面舉一些例子：³

| | 陰平 | 陽平 | 陰上 | 陽上 | 陰去 | 陽去 | 上陰入 | 下陰入 | 陽入 |
|----|------|------|------|------|------|------|-----|------|----------|
| 廣州 | 52 | 21 | 24 | 23 | 33 | 22 | 5 | 3 | 2 |
| 中山 | 44 | 51 | 12 | | 22 | | 4 | 2,22 | |
| 東莞 | 2132 | 11 | 24 | 23 | 332 | | 4 | 224 | 2 |
| 台山 | 33 | 11 | 45 | - | 33 | 42 | 5 | 3 | 2 |
| 博白 | 5553 | 2342 | 3333 | 2223 | 4--2 | 2111 | 444 | 3333 | 222,2223 |

現代廣州話的元音長短與等韻學上所謂內外轉的類別大致相合，這也是很有名的事實。⁴ 在別的漢語方言當中影響聲調分化的元音類別也往往是內外轉，因此在這裡先看看有關內外轉的一些問題。

關於內外轉衆說紛紜，其中最通行的還是羅 1933 的主要元音高低說：內轉諸韻包含 u, o, ə, i, e 等高元音，外轉則包含 e, ɛ, æ, a, ɐ, ʌ, ɔ 等低元音。不過這個說法只有把韻圖的果·宕攝改爲外轉、把臻攝改爲內轉以後纔能成立。另外，據趙等 1940 (502 頁譯注) 觀察，現代方言的鼻音韻母也分兩類，外轉的主要元音長強、韻尾短弱，內轉的主要元音短弱、韻尾長強。⁵ 雖然這些說法還沒有圓滿地解釋韻圖原封不動的內外轉，但都具有語音上的實際根據，由此可以說明許多現象。因此不管能否適合於等韻學上的內外轉，不妨在這裡據此給“內外轉”重新下定義。雖說兩位的著眼點不一樣，但趙元任所觀察到的現象可以按邏輯從羅說引導出來：⁶

發單獨的元音時，從發音器官的中性狀態出發，這時舌位居中、嘴唇稍開，

2 也有一些例外，賴 1951, 44 頁有一覽表。其中咸攝一等見母字（今音 [kɛp]，短元音）念下陰入是因為前一段時期它們的讀音是 [kɔ:p] 的緣故（參看遠藤 1986）。

3 資料來源：中山（石岐），趙 1948；東莞，王等 1949；台山，趙 1951；博白，王 1928。還有不少方言點的材料，但總的來說，上下陰入的高低關係都跟廣州相同。

4 賴 1951 (39-40 頁) 有較詳細的論述。

5 趙等 1948 (10 頁、1538 頁等) 也有類似的描寫。後來賴 1958 把趙元任他們的觀察提煉成一個學說，俞 1986 也提出了同樣的看法。

6 在下面的論述裡，象主要元音高低與韻尾長短強弱的因果關係、廈門話和延川話的解釋等諸點承平山久雄先生告知。類似觀點也見於賴 1951、尾崎 1970、歐陽 1979 等。

發高元音時只要把舌位提高就可以，舌頭是很靈敏的器官，用不了太多時間；但是發低元音的時候，要打開下顎，那麼開口度越大所需時間越長。再說，按照漢語的音節結構，聲母、介音和韻尾的發音部位都很高，那麼主要元音的部位越低，舌頭在語流中的移動距離越長，花費的時間也越長。這種傾向在北京話也可以觀察到，據馮 1985 (161 頁) 的測量，單韻母的平均時長分別為：i — 101ms (毫秒，下同)，u — 108, e — 115, o — 128, a — 131。另外，漢語的音節在詞重音等別的條件相同時傾向於占有一定的時長。據馮 1985，北京話聲母的時長按發音方法的不同有較大的偏差，但韻母的時長與此有補償關係，因此整個音節的總時長不管聲母類別如何都趨於一定的長度。Kao 1971 (pp.43-58) 測量了廣州話的主要元音和整個音節的時長：

| 韻 尾 | 主要元音的時長 | | | 整個音節的時長 | | |
|-------|---------|------|-----|---------|------|-----|
| | ø | iunŋ | ptk | ø | iunŋ | ptk |
| 短主要元音 | - | 100 | 89 | - | 294 | 117 |
| 長主要元音 | 308 | 203 | 169 | 339 | 352 | 207 |

論主要元音，長元音的時長大約有短元音的兩倍。而整個音節的時長，除了入聲以外，卻沒有顯著的差別。這表示韻尾隨著主要元音的長短而伸縮，以保持整個音節時長的等同性。在入聲音節，不帶音塞音韻尾無法拉長，因此起不到調節作用，於是主要元音的長短直接表現為整個音節的長短了。

綜上所述，這裡所謂的內轉具有較高的主要元音，由於開口度小，主要元音的時長也就短些，響度也小些，於是剩下的長度和強度多些，韻尾也就又長又強；外轉則具有較低的主要元音，由於開口度大，主要元音的時長也就長些，響度也大些，於是剩下的長度和強度少些，韻尾也就比內轉又短又弱。⁷

再回到粵語的問題。廣州話的長短元音只有 a: 與 a 纔有整齊的對立關係。論中古來源，ɐ 來自 *ə，⁸ 經過 *ə 的發音部位下降，向來伴隨著元音高低的長短

7 至於這是否韻圖內外轉的正確解釋則另當別論。有關討論可參看遠藤 1988。

8 在內轉諸攝，三等韻的介音一般脫落，現代廣州音的反映與一等韻一樣（曾攝除外），如“斤”[kɛn]（=“根”）等等。

由此變為區別性特徵，也就產生了 a: 與 e 的對立。廣州話還有 i:, u:, y:, ɔ:, ɛ:, œ: 等長元音。其中構成單韻母的 i:, u:, y: 來自內轉，但單韻母的主要元音也占有韻尾的時間，因此必然是長元音。⁹ 有韻尾的這些元音都來自外轉，而且都是介音吞併主要元音而成的，一個元音使用介音和主要元音的時間，就自然成為長元音了。¹⁰

這樣看起來，促使粵語入聲分化的真正的語音條件也未必是元音長短。因為現代的元音長短可能曾經是元音高低，而入聲的分化不一定是在元音系統變成現在這樣以後產生的。參考粵語台山話就更加有這種感覺。台山話也有上下陰入之別，但台山話裡沒有元音長短的對立。台山話的元音系統似乎保留了較古老的階段。只是這裡不能繼續討論粵語的元音系統發展過程這個大問題。

2.2 延川、清澗、太谷、東莞的入聲

白 1936 (34-37 頁) 說，在陝北延川縣方言裡有一部分字還保持入聲調，並列舉了一些例字。據他的解釋，這些字得以保留的原因是因為口語常用的；然而平山久雄先生發現，¹¹ 這些保留入聲調的字大部分都具有高元音，論中古來源，也就大致來自內轉諸攝。來自外轉、現在有非高元音的那些古入聲字則合併到舒聲去了。¹² 如果參照上述內外轉的韻尾強弱性質，這個現象很容易理解：由於外轉的入聲韻尾（也就是喉塞尾）比內轉短弱，因此丟失了韻尾，這就成了舒聲了；內轉則因為韻尾長強的緣故保留了喉塞尾，也就保留了固有的調類。據白 1936 (35 頁)，毗鄰的綏德縣也有同樣一個現象。劉 1983 詳細報告了延川的鄰縣清澗話的狀況，並與廣州話陰入聲的分化聯繫起來加以解釋。依我看來，這

9 在北京話，單韻母的主要元音實際上也是長元音。恐怕別的漢語方言也都這樣，只是一般不標寫罷了。

10 關於廣州音與中古音的對應關係，參看賴 1954 或 Hashimoto 1972。

11 他在 1979 年告訴了我這個想法，其著想則再追溯一二十年。

12 張 1990 所描寫的次方言情況不同，除了全濁外轉入聲大都合併到陽平去以外，古入聲一般保持入聲調類。清、次濁入聲構成今“長入”[423:]，單念時沒有喉塞尾，但在句中內轉清、次濁入聲伴隨喉塞尾。全濁內轉入聲的部分字構成今“短入”[54:]，帶喉塞尾。

是同樣一個潛在起因（也就是上述內外轉的語音性質）的不同表現：如果有相同的語音條件，不同的方言或語言就有可能獨立地產生相似的語音變化。又如，山西太谷話（新派）也有與清澗話相同的入聲分派狀況（樋 1990）。考慮到太谷老派還沒有這種現象（楊 1983），這可能是最近幾十年間產生的變化。¹³ 再說，山西太谷和陝西清澗都處在山區，沒有直接的通道，中間也似乎沒有媒介的方言片。清澗話和廣州話之間更沒有共同的歷史紐帶。因此，雖然這些方言的入聲演變情況有相似之處，但只能認為各自獨立趨於同樣一個方向罷了。粵語東莞話也有類似現象：王等 1949 所描寫的“陰入”“變入”“陽入”分別對應於廣州話的上陰入、下陰入和陽入，而“變入”已經失去了入聲韻尾。但有兩點與延川、清澗和太谷不同：（一）東莞的外轉陽入照樣保留著入聲韻尾；（二）東莞的外轉陰入雖然變成了開尾韻，但仍然保持獨立的調類，沒有合併到舒聲去。

2.3 閩南話白讀層的入聲

王育德 1968 (809-821 頁) 指出：閩南話的陽聲韻尾和入聲韻尾在文讀層和白讀層有截然不同的反映，在文讀層一律保持 *m/p*、*n/t*、*ŋ/k* 韻尾的不同，在白讀層裡內轉諸攝保持中古的韻尾系統（但曾攝變為 *n/t*），外轉諸攝的韻尾則一律弱化為鼻化韻母或喉塞尾，發音部位的對立消失了。¹⁴

廈門話的陰入聲在所謂“本調”的位置念 [32:]，但在“變調”的位置有兩個形式，收 *-p*、*-t*、*-k* 的音節念 [4:]；單字收 *-ʔ* 的音節念 [53:]，並喉塞尾脫落（如董 1957, 243-244 頁）。這種現象在別的閩南話裡也可看到，如董 1959 所描寫的龍溪 (853 頁) 和晉江 (796 頁) 等等。平山 1973 (197 頁) 說，韻尾 *-ʔ* 的陰入聲在“變調”的位置裡念 [53:] 是因為 *-ʔ* 的閉塞在非末位音節變得不完整，由於聲帶的強度緊張產生了音高下降的緣故。這個解釋使人懷疑：第一，如果 *-ʔ* 的閉塞在句中弱化的話，閉塞程度只可能減輕，聲帶不會反而伴隨強度緊張；第二，

13 潘 1984 (431 頁) 報告，交城（離太谷不遠）方言的入聲喉塞尾也在 *a* 後面有弱化的跡象，這正反映外轉入聲消失以前的過渡狀態。

14 他分的層次更加細緻，一共有六層。其中從 A 到 D 是白讀層，E、F 是文讀層。

聲帶的緊張導致音高的提高，而不是相反。平山 1975 (8 頁) 則說：“這大概是聲門關閉前所隨伴的聲帶較粗的顫動所招來的。”這個解釋也不令人滿意，因為“聲帶較粗的顫動”是 [h] 或 murmur 的發聲方法，而不是喉塞音的。再說，根據 Hombert 1978 (pp.92-95)，喉塞韻尾與此相反起到提高前面元音音高的作用。喉塞尾在句中的消失這個現象，在吳語裡也可以看到，在那兒並沒有帶來音高的變化，所以在閩南話裡也可能不是帶來音高變化的直接起因。如果這個分化現象不是喉塞韻尾所帶來的，就得加以另外一種解釋，即：在白讀層的基礎方言裡曾經產生過以內外轉為條件的陰入聲分化，在“變調”的位置保持了分化以後的狀態，在“本調”的位置則重新合併成一個調了。

2.4 《翻譯老乞大·朴通事》的入聲

《翻譯老乞大·朴通事》是朝鮮翻譯官崔世珍根據元代成立的《老乞大·朴通事》所編的漢語口語會話課本。每個漢字下都有兩個注音，右側音是崔世珍親自描寫的，反映十六世紀初的官話音。當時官話還保留了獨立的入聲，根據崔世珍的描寫，一類入聲的調值是 [5:]，另一類入聲的調值是 [24:]。把他所附加的聲點歸納起來可以看出主要元音為 i, u, iu 等高元音的入聲是 [5:]，其他非高元音的入聲是 [24:]。跟別的北方話一樣，《翻譯老朴》基礎方言裡的元音高低大致與內外轉的類別一致（參看遠藤 1984a）。

2.5 四川峨嵋話的去聲和入聲

據陳等 1959，四川峨嵋話有五個調類：陰平 44:，陽平 21:，上聲 42:，去聲 13:，入聲 55:。峨嵋話的去聲和入聲根據韻母的結構類型產生了獨特的分化與合併。古去聲（包括全濁上聲）中，帶鼻音韻尾或元音韻尾或 r 尾的音節以及開尾韻的 -a、-e 保持去聲，開尾韻的其他音節，即 -ɔ, -o, ie, ɿ ~ ɿ, i, u, y 韻母的字則合併到入聲去了。古入聲一般構成今音入聲，但主要元音今念 a 或 e 的則派到去聲去了。Malmqvist 1950 已經專門報告了這個現象，據他的描寫，合併是單方向的，只有去聲派到入聲這個方向。其實剛纔提到入聲變去聲的規則是我根據陳

等 1959 的同音字表加上去的，陳等 1959 (52 頁) 概括古今調類對應關係時卻沒有把它列出來。這也有道理，因為入聲念 a 的一般是一些個別字的又讀，而這些字所屬的中古韻現在念 æ 纔是大勢；e 韻母也相同，來自入聲的字只有三個。這樣，可以把這些字看做方言接觸所帶來的例外。那麼，這個現象可以這麼理解：去聲當中，韻母形式跟入聲韻母一樣的音節一律合併到入聲去，否則保持去聲。這個方言的入聲韻一律成了開尾韻，而沒有收元音韻尾的音節，再說主層的入聲韻也沒有 -a、-e 韻母，更沒有鼻尾韻。¹⁵

關於這個奇特的語音變化產生的原因和過程，這裡記一下初步假設：最難以理解的是去聲 [13:] 的部分音節分派的時候怎樣纔能“跳過”陰平 [44:] 而合併到入聲 [55:] 呢？如果照現在的調值去解釋的話就無法解釋清楚。這裡有一個線索：Malmqvist 1962 (p.142) 說，蛾眉話的“Tone 4 (引者按，即去聲)：[213]; in strongly stressed syllables containing one of the finals /e/, /a/, /ia/ and /ua/ [ʔ] frequently occurs in the turning-point of the falling-rising form.” 降昇調的曲折點帶緊喉作用是常見的現象，如北京話的上聲；這個緊喉作用往往發展成喉塞音，最有名的例子是越南話的 *giọng ngã*，在漢語方言裡也不乏其例。蛾眉話去聲的特殊之處在於只有開尾韻纔伴隨著喉塞音 (e, a, ia, ua 是在去聲剩下的所有開尾韻)。現代蛾眉話的入聲不帶喉塞尾，但很容易推測，在前一段時期曾經有過喉塞尾。那麼去聲和入聲有可能以此為媒介得到聯係。當然也可能過去的入聲調值更接近去聲。

2.6 江西南豐話的入聲

顏 1986 (36 頁) 報告，江西省西邊的贛語南豐話的入聲分兩類，來自咸、深、山、臻攝的念 12:，來自宕、江、曾、梗、通攝的念 5:。文中描寫極簡略，未知引導這個變化的語音特徵到底是什麼，但這個現象做為韻母類別所導致的聲

15 據 Hombert 1978 (p.96) 的介紹，Cheung, S.H.N. “Tonal redistribution in the Omei dialect,” Paper presented at the 6th International Sino-Tibetan Conference, San Diego, 1973 (作者未見) 認為這是元音高低所引起的聲調重新調整現象。

調變化很值得關注。¹⁶

下面看看其他語言的例子：

2.7 台語(Tai)各方言 D 調

台語(Tai)各方言的 D 調，象廣州話入聲那樣，以元音長短為條件分化。這個現象在台語各方言中極為普遍，這裡只舉一些典型的例子：¹⁷

| | A1 | A2 | B1 | B2 | C1 | C2 | D1S | D1L | D2S | D2L |
|----|-------|----|----|----|----|--------|-------|-----|-----|-----|
| 泰語 | 33,24 | 33 | 22 | 41 | 41 | 453,55 | | 22 | 55 | 41 |
| 龍州 | 33 | 31 | 55 | 11 | 24 | 21 | | 55 | | 31 |
| 剝隘 | 24,31 | 55 | 22 | 31 | 44 | 33 | 55,44 | 22 | 44 | 31 |

屬於侗水語支的莫話也有類似現象，據李 1948 (17 頁)：1 — 13:, 2 — 31:, 3 — 44:, 4 — 51:, 5 — 35:, 6 — 34:, 7S — 35:, 7L — 44:, 8S — 31:, 8L — 51:。苗瑤語一般沒有這種分化現象，但是據陳 1979 (30 頁)，雲南屏邊新村的瑤語是：1 子 — 35:, 1 丑 — 31:, 2 — 33:, 3 子 — 545:, 3 丑 — 21:, 4 — 32:, 5 子 — 44:, 5 丑 — 21:, 6 — 22:, 7S 子 — 54:, 7S 丑 — 32:, 7L 子 — 24:, 7L 丑 — 31:, 8S — 21:, 8L — 42:。¹⁸

2.8 藏緬語的鬆緊元音

藏緬語族彝語支、景頗語支所屬的很多語言有鬆緊元音的對立。據戴 1958 (42 頁)，這些語言的鬆緊元音跟聲調之間有密切的聯系，緊元音的聲調一般都比鬆元音高。例如，哈尼語美洛話的緊元音低調是 32:，鬆元音是 31:；景頗語的緊元音高調是 55:，鬆元音是 35:。

2.9 緬甸語的入聲

據西田 1972 (289 頁)，緬甸語的入聲分兩類，單元音的念 44:，雙元音的念

16 作者由何 1988 (119 頁) 的引述得知這個現象的存在。

17 材料來源：Li 1977, p.28。Gandour 1977 專門討論這個現象。

18 這個方言的陰調還根據聲母的送氣與否分兩類，“子”為不送氣，“丑”為送氣。

41: 。¹⁹

2.10 日語一些方言的詞調 (accent)

在日本東北部、能登半島、房總半島、出雲地方、香川縣東部、壹岐、對馬等地方，詞調（一種 *pitch accent*）音高模式的歷史演變因元音是否 i, u 或 a, e, o 而異。²⁰ 乍一看，這也是元音高低影響音高的一個例子，因此在這裡附帶討論一下：日語（東京方言等）的 i、u 在不帶音輔音之間變成不帶音元音 [i̥][u̥]。這就減少做為音節主音的資格。另外，在東京等地的方言裡，不能獨立構成音節的長音“—”、撥音“ん”等音素影響詞調的語音表現。那麼，日語東北方言等的現象也與此相似，由於元音 i、u 獨立擔負詞調曲折點（往往就是該詞詞調的區別特徵所在）的能力較小，於是在詞調演變過程中走出了不同的路。這樣看起來，這跟拉丁語的重音位置移動現象有些相仿：拉丁語的重音一般在倒數第二個音節，但在三音節以上的詞裡如果倒數第二個音節是短音節的話，重音就前移到倒數第三個音節。這也是因為短元音擔負重音的能力較小的緣故。

3. 聲調所引起的元音變化

據目前所知，聲調所引起的元音變化實例較少。下面是作者所能接觸到的一些現象：

3.1 北京話的 iou、uei 和 er 韻母

王 1935（169 頁）說：“北平的上聲字的元音往往比平聲字的元音更開口些。”，例如“油”念 iu，“有”念 io；“誰”念 shui，“水”念 shuei；“井”的主要元音比“精”開，甚至有人把“走”念成 tsao。更全面地說，北京話的

19 作者也曾經向仰光話發音人確認過這個事實（1980 年）。

20 有關論文極多，這裡只舉秋永 1966。

iou、uei 韻母在陰、陽平念 [i^ou] [u^ei]，在上、去聲念 [iou] [uei]。²¹ 舊版中文靈格風 (Linguaphone) 是舒慶春 (C.C. Shu) ——也就是老舍——在二十年代錄音的，這是我們可以親耳聽到的最古老的北京話。他在那個唱片裡念 iou 音節時，陰平、陽平念成 [iu]，上、去聲念成 [iou]，音值的差別比現在明顯得多。²²

湖南邵陽話也有類似現象：遠藤 1984b 所描寫的發音人甲有五個聲調，陰平 55:，陽平 12:，上聲 33: ~ 31:，陰去 24:，陽去 113:。這些聲調有長度的不同，陰平稍微短些，上聲、陰去中等，陽平、陽去稍微長些。隨著音節長度的不同，主要元音的長度也不同：

| 聲調 | 音節長度 | /an/ | /ai/ | /uei/ |
|-------|------|--------------------|---------------------|--------------------|
| 陰平 | 短 | [a ⁿ] | [Ae] | [uI] |
| 上聲、陰去 | 中 | [a ^{·n}] | [A [·] e] | [u [·] I] |
| 陽平、陽去 | 長 | [a: ⁿ] | [A: [·] e] | [ueI] |

邵陽話的現象比較好理解，因為主要元音的實現程度完全跟著音節長度走，該音節越長主要元音也越明顯。可是北京話卻不是這樣。上聲單念時很長，這是沒有問題的；但去聲是北京話四聲當中最短的，²³ 可是照樣跟上聲一樣較清楚地顯現出三合元音的主要元音來。下文還要談到這個問題。

北京話還有另外一種現象，即同樣標寫“er”的韻母實際上陽平和上聲念 [ɛr]，去聲念 [ɐr]，如“兒、耳”和“二”。²⁴ 平山 1958 指出，“二”和“案

21 描寫這個現象的論文很多，這裡只引平山 1958 (33 頁)。Chao 1968 (p.54) 說，大多數北京人發“有井”時，“有”字雖然替換成陽平，但仍然保持韻母 [iou] 的音值，因而跟“油井”不同音。然而據 Wang & Li 1967 的聽辨實驗，這類對比詞組也沒有顯示對立。

22 據葉德明女士（成年以前生長在北平，現在臺灣師範大學教授）指教，北京話另外還有 yuan 等韻母也隨著聲調平仄有音值開口度的不同。

23 一般來說，有這種傾向：降調最短，平調平均，昇調稍長，降昇調最長。據馮 1985 的測量，北京話的四聲時長的不同在句末位置仍然與單念時一樣，但在句中位置這種差別沒有了，四聲的時長幾乎都相同。

24 趙 1928 第二表 9 的止攝日母“國音”欄有“ɛr 平，ɐr 仄”的記載。據我所知，這是現代學者對這個現象的最早的描寫。但上聲的歸屬還成問題，Ohnesorg et al. 1955 (Tab. XII 164, 166 和 fig.17) 對“兒耳”和“二”分別加了 ɛr 和 ɐr 的標音，這就跟我們現在的理解一樣。

兒”同音，因此雖說[əɪ]和[ɛɪ]的出現機會互補，還得把它們看做不同的音位。

《老乞大諺解》(1670年?)和《朴通事諺解》(1677年)的標音大致沿襲了十六世紀崔世珍諺解(即所謂《翻譯老朴》)，但在個別地方也有所改動，止攝開口日母字的標音是其顯著的例子(參看遠藤1982, 88頁)：

| | 兒 | 而 | 耳 | 二 | 貳 |
|--------------|-------|------|-------|------|------|
| 《翻譯老朴》1510左右 | △ ze | △ ze | △ ze | △ ze | △ ze |
| 《老乞大諺解》1670? | ㄴ zer | — | ㄴ zer | ㅇ yr | — |
| 《朴通事諺解》1677 | ㅇ er | ㅇ er | ㅇ er | ㅇ yr | ㅇ yr |

這裡簡單地談一下諺文注音表示的實際音值。《翻譯老朴》的ze表示*zɿ，因為在這個對音系統裡面對止攝開口一般使用|i來注音(包括知組在內)，但對精組和章、莊組則使用ɛ，可見這是用來表示混合高元音[ɿ][ɿ]的，發音部位不像諺文轉寫所指示的那麼低。這個對音系統對章、莊組的聲母符號只有一套，但它們所表示的實際音值因後面的元音而異，在細音前面是[tʃ、tʃʰ、ʃ、ʒ]，在洪音前面是[tʂ、tʂʰ、ʂ、ʒ]。因此ɛ前面的z是*zɿ(比較：“日”zi是*ʒiʔ，後來沒有變成er類音。)到了十七世紀，z這個音在朝鮮消失了，所以《老乞大諺解》的“zer”也未必認為實際音值也保留了z類音，徑直看做零聲母纔好。ɛ-r可能表示卷舌韻尾。現代朝鮮話的ɛ，做為聲母念[r]，做為韻尾念[ɿ]，但除此以外沒有合適的音用來表示卷舌韻尾，這在當時也可能如此。—y在《老朴》常用來表示*ə元音。那麼，在《老朴諺解》反映的十七世紀後半的官話音系裡，“兒而耳”是*ɿr，“二貳”是*ər，已經像現代北京話那樣，去聲的主要元音更開些。

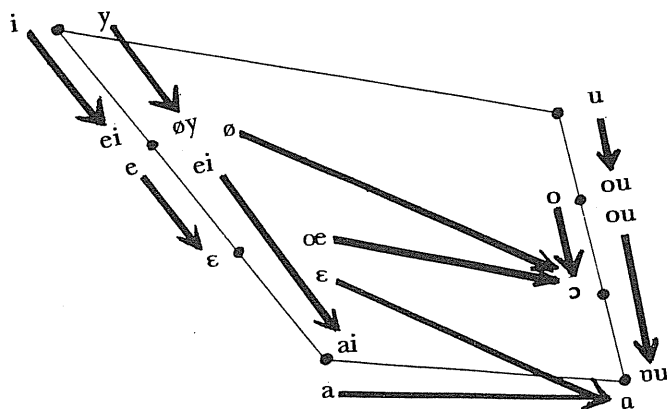
3.2 臺灣中部的一種閩南話

有坂1940(192頁)描寫了臺灣中部的一種閩南話，在這個方言裡相當於廈門話的o韻逢上聲變為ɔ韻。例如在這個方言裡陰平的“高歌”ko和“孤”kɔ保持對立，但是在上聲“可”和“苦”同音，都念k'ɔ，上聲變ɔ韻的例子還有：草、左、我、果、火等等。他接著說，舌骨和甲狀軟骨是以肌肉連接著的，因此舌頭的運動和喉頭狀態有可能相關聯(在附注裡他還引了喉頭發高音時上昇、發

低音時下降的事實)。他由此指出，在這個方言裡上聲的降調有可能促使[o]的舌位拉向後下方。但他又說，直接起作用的語音性質不一定是音高，還可能是音強或音長，於是沒有下最後結論。²⁵

3.3 福州話的元音與聲調

陶 1930(451-452 頁)描寫了福州話韻母音值隨聲調而異的現象。這是聲調所引起的元音變化當中最富有戲劇性的，而且象趙 1934(p.386)那樣的經典性論文或者象 Chang 1975(pp.674-675)那樣的有關漢語聲調的綜論也都談到過，所以大家熟悉這個現象。現在根據陳 1984 把具體替換情況概括如下：



每個箭頭出發點的音值出現在陰平、陽平、上聲、陽入，每個箭頭終點的音值出現在陰去、陽去、陰入。陳 1984 稱前者為“本韻”，稱後者為“變韻”。看到具體例字（如“衣”[i]: “意”[ei]，“烏”[u]: “務”[ou]等等），“本韻”的音值似乎更接近古音；“變韻”出現 eiŋ/k 或 ouŋ/k 等韻母，按照漢語的音節結構，這樣具有兩個韻尾的狀態不大自然，因此至少在歷時層面上可以認為“本韻”保留了較古老的音值，而“變韻”則是後起的。²⁶

25 順便在此記一下，有坂 1940 第三章“音變的進行過程”已經詳細討論了王士元氏所提倡的詞擴散理論的主要概念，如語音形式的跳躍性變化、音變在詞匯及社會中的逐漸擴散、舊形式和新形式的競爭等等。

26 關於替換的方向，Wang 1968(pp.10-11) 和 Maddieson 1976 的看法與此相反。

至於調值，各家的描寫如下：

| | 陰平 | 陽平 | 上聲 | 陰去 | 陽去 | 陰入 | 陽入 |
|-------------|------|------|------|------|------|-----------|-----------|
| 陶 1930 | 44 | 52 | 32 | 13 | 453 | 34 | 4 |
| 藍 1953 | 55 | 61 | 33 | 11 | 242 | 13 | 56 |
| 袁 1960 | 44 | 52 | 31 | 213 | 242 | 23 | 4 |
| 王 1969 | 5555 | 6--2 | 3333 | 1112 | 2342 | 24 | 56 |
| Norman 1971 | 55 | 52 | 22 | 13 | 342 | <u>24</u> | <u>55</u> |

Hashimoto 1972(p.6) 根據藍 1953 的描寫說，念“本韻”的調類都以非低音開始，如 55, 61, 33, 56；念“變韻”的調類都以低音開始，如 11, 242, 13。平山 1977 (24-25 頁) 則進一步認為，福州話韻母的變化是發低調時隨著喉頭緊張拉下舌骨以導致整個舌位向後下方的移動。這是很有吸引力的解釋，下節將專門圍繞這個設想進行討論。

類似福州話的現象在臨近的閩東方言里也可看到，如 Norman 1972 所描寫的寧德、福安和陳 1984 所報告的一系列方言點。

3.4 山西襄垣話的上聲

陳等 1984 描寫的山西襄垣話里，ai, uai, au, iau 韻母沒有上聲字，而相應的上聲字都分別變成 an, uan, aŋ, iaŋ 了。例如：

| 陰平 | 陽平 | 去聲 | 上聲 |
|----------|----------|----------|----------------|
| 差 ts'ai | 纔 ts'ai | 菜 ts'ai | 彩 ts'an (= 產) |
| 乘 kuai | — | 怪 kuai | 拐 kuan (= 館) |
| 超 ts'au | 曹 ts'au | 造 ts'au | 草 ts'aŋ (= 廠) |
| 敲 tɕ'iau | 橋 tɕ'iau | 俏 tɕ'iau | 巧 tɕ'iaŋ (= 槍) |

元音韻尾-i、-u 變鼻音韻尾-n、-ŋ 的現象只限於主要元音 a 後面，而在 ei、iei、uei、yei、ou、iou 等韻母裡不存在。就是說，這個變化產生的條件有兩個，第一，上聲，第二，主要元音 a。這兩個特徵正是解決這個問題的線索所在（下面把遠藤 1987 的解釋重述一下）：

據陳等 1984 及金 1985，襄垣話有下列聲調：陰平 33（稍昇）、陽平 11（稍昇）、上聲 213、去聲 55（稍降）、“入聲”（即陰入，包括古次濁）3ʔ、“舒促調”（即陽入）213ʔ、“入聲 B”（變調或輕聲化所帶來的替換調值）5ʔ。由於入聲不關涉到現在的問題，要考慮的是上聲在舒聲裡的特異性。降昇調的上聲可能是在這個方言裡最長的聲調（其他三個聲調都是平調）。那麼，在音節末尾弛緩程度也可能最厲害。另外，主要元音是否 a 這個條件與“內外轉”的類別對應。來自外轉的 a 元音後面，韻尾的弱化程度比內轉明顯。這樣，這兩個條件都是促使韻尾弱化的。產生弱化時，傾向於靠近發音器官休息狀態（或者可以叫“中性位置”）。控制鼻腔通道的器官小舌在休息狀態時下垂，因而發音弱化時有可能接近這個狀態，口音變成鼻音。於是產生 ai>aĩ、au>aũ 的變化，再由聽覺上的類似變成 an、aŋ 就成了襄垣話現在的狀態（據金 1985，襄垣話的韻尾 -ŋ 不穩定，實際音值接近 [ã, iã]）。

3.5 唐詩用韻

Juhl 1980 調查了從西元 600 年至 750 年之間的唐詩用韻，看出蒸登、東鍾、元仙先、支脂之等韻系首先從仄聲開始產生通押現象，然後再遍及平聲。他認為這反映當時實際語言裡面韻母因聲調類別而異的現象。他引了高本漢所描寫的現代話的例子，如文水話平聲 ũ：仄聲 uō（參看漢譯本 197-235 頁、565 頁、683 頁等等），與此進行比較。如果他的解釋是對的話，這也是聲調引起的元音變化之一。但仄聲韻的字數一般比平聲韻少，這樣就依靠通押的情況會多一些。這個現象是否起因於這種作詩時的條件，還值得斟酌。

4. 舌頭與喉頭的連動關係

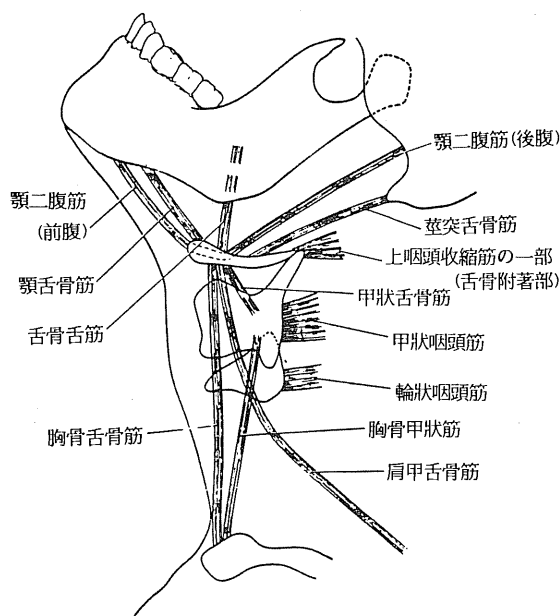
上面諸例是元音與聲調的相互作用所引起的歷時音變。論元音與聲調（或更廣泛地說，音高）的關係，倒有一個很有名的現象，即：隨著元音舌位的高低，基頻 (Fo) 也有高低的偏差（即所謂“固有音高” intrinsic pitch）。這個現象在世

界上許多語言裡普遍存在，就是在非聲調語言（象英語等等）也可以觀察到（參看 Lehiste 1970, pp.68-71; Lea 1973, pp.43-46; Hombert 1978, pp.96-102; Gandour et al. 1980; Fukui 1981 等等）。北京話也有這個現象（參看吳等 1979, 394 頁的“普通話十個元音的基頻數據表和 396 頁的圖 13 “普通話四聲調值與元音關係”²⁷）。另外，據 Hombert 1976a 的研究，在非洲 Yoruba 語裡高調和中調有固有音高的不同，但在低調則沒有；Zee 1978 也就臺灣話得出了類似的結果。

至於為什麼存在這個現象的原因，目前似乎還沒有定論。但這個問題的關鍵所在不外乎舌頭、下顎與喉頭的連動關係。有坂 1940 (193 頁) 早已提出過這個設想。下面具體地討論其間存在的問題。

決定元音性質的最主要的器官是舌頭乃至下顎（當然還有嘴唇和小舌也起配合作用）；決定聲調音高模式的最主要的器官是喉頭，尤其是聲帶。控制舌頭及下顎運動的肌肉下接舌骨，控制喉頭運動的肌肉也上接舌骨，舌頭、下顎跟喉頭以舌骨為媒介連接在一起，舌頭、下顎跟喉頭之間可能有連動的關係（見右圖，轉引自廣賴 1976, 312 頁）。

決定基頻的直接因素是聲帶的厚薄、緊張度和聲門下的壓力。到目前為止，已被公認的音高調節器官是喉頭內部的環甲肌 (crico-thyroid muscle)，它活動就導致聲帶拉長，聲帶的肌肉隨之變薄，同時緊張度也隨之增加，從而引起聲門的振動速度增



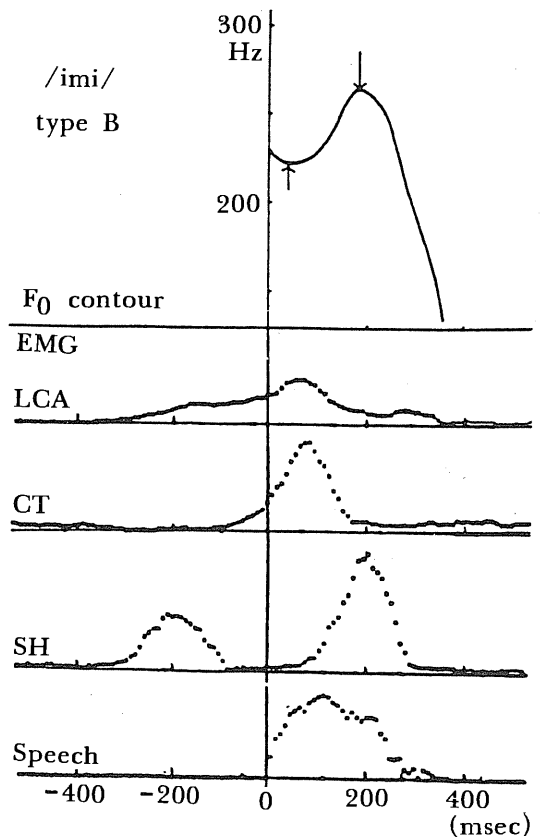
27 據這個測量結果，女聲和童聲的基頻和元音之間卻看不到這種關係，甚至有時低元音的基頻反而高（如圖 13 的女聲陽平）。

高，音高也就高了（參看廣瀨 1976, 426-429 頁；Ohala 1978, p.19 等等）。

另外，雖然這還沒成為定論，喉頭本身的上下移動跟音高的高低也有不可忽視的聯帶關係：發高音時整個喉頭上昇，發低音時整個喉頭下降（參看 Ohala 1978, p.23），這不妨自己試一試。垣田 1974 (20 頁) 則用 thyrometer 測量了臺灣國語發四聲時的喉頭上下運動，確認基頻高低和喉頭上下位置之間有明顯的對應（但第一聲除外，未知其原因）。據 Gandour et al. 1976 的實驗，泰語的聲調當中“高調”和“昇調”的基頻和喉頭高度之間有正比例的關係，但其他聲調（“中調”“低調”“降調”）則不然。

喉頭隨著基頻高低而上下移動，這不僅是從外面觀察得到的，由肌電測量也可以確認相關肌肉的活動。據一些實驗結果，隨著音高的下降，喉外肌，特別是胸骨舌骨肌 (Sternohyoid Muscle) 的肌電增高 (Ohala et al. 1970; Simada et al. 1971; Sugito et al. 1978 等等，北京話也有類似情況，如 Niimi et al. 1990; Hallé et al. 1990 等等)。這裡看看日語大阪話的一個例子（轉引自 Sugito et al. 1978. p.39）：

這個詞（其實是一個 nonsense word）的第一個音節低，第二個音節高降，見下頁的基頻曲拱。看環甲肌 (CT) 的肌電，CT 的活動開始於基頻的提高之前。再看胸骨舌骨肌 (SH) 的肌電，第一個電位的提高產生於低音開頭部之前，第二個電位的提高產生於第二個音節的下降部分。由此看來，SH 的活動確實跟低音開頭和音高下降相並行。但這裡有一個問題：按理說，肌肉活動以



後需要花一定的時間纔能收到音響效果（參看下圖，轉引自 Catford 1977, p.8，肌電在 neuromuscular phase，基頻在 acoustic phase），CT 的活動先於其頻的提高也是這個道理，但是 SH 的活動步驟在第二個音節幾乎跟基頻的下降一至，這就使人懷疑 SH 和音高下降之間是否存在因果關係。

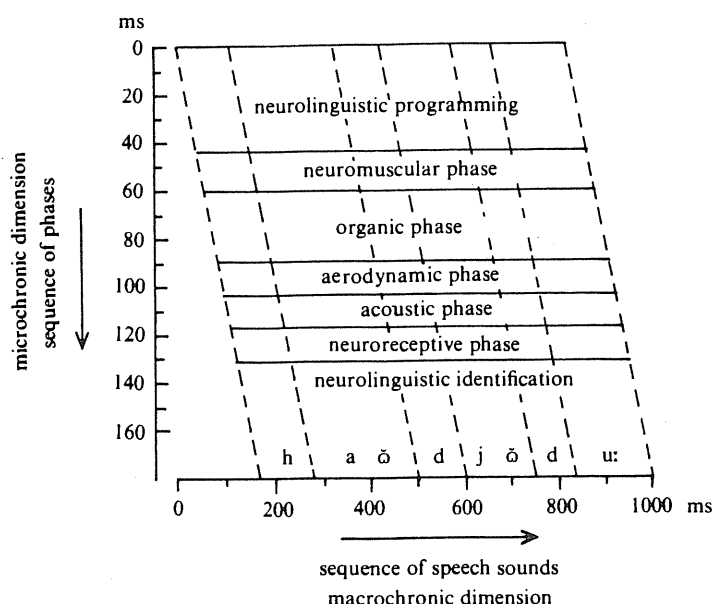


Figure 1. The time-dimensions of speech

對這個問題，Erickson et al. 1983 做了啓發性的實驗。他們測量了泰語和英語的高降調和低降調的肌電，高降調的下降開始由 CT 的弛緩來實現，然後喉外肌活動；低降調的下降主要由喉外肌來實現，CT 則很少關涉進來。他們舉出的喉外肌有兩種，SH 和甲狀舌骨肌 (Thyrohyoid, TH)。看舉例，英語發音人所使用的喉外肌是 SH；泰語發音人所使用的喉外肌則因人而異，有人使用 SH，有人使用 TH。SH 活動就會導致舌骨下降，喉頭也跟著下降；TH 活動就會把喉頭拉高。這就跟 Gandour et al. 1976 的外部觀察（即在泰語發“中調”“低調”“降調”的時候也伴隨喉頭的上昇）相一致。泰語的低調由 TH 的活動（及喉頭的上昇）來實現，這或許反映尚未爲人所知的音高下降機構。總之，在這裡重要的是：從高音域開始的下降和從中等音域開始的下降所採取的生理手段不同，從高音域到中等音域的下降由 CT 的弛緩來實現，從中等音域到低音域的下降則由

喉外肌，特別是SH的活動來實現。那麼上舉日語大阪話的例子也可以這樣解釋：如果以第一個音節的音高220Hz為基點來看第二個音節下降的後半部分的話，SH的活動還是先於基頻從中等音域到低音域的下降。²⁸

舌骨做為舌頭、下顎與喉頭的連接處也可能有相應的上下移動，雨森1961則用X光照片測量了許多日語發音人的舌骨位置，確認了舌骨隨著基頻的提高移向上前方。

這裡有一個問題，到底是高元音引起基頻的提高還是低元音引起基頻的下降？如果把休息狀態的喉頭位置為中性位置，發中等音高時喉頭位置不變，發高音時喉頭上昇，發低音時喉頭下降。發高音、發低音都伴隨喉頭的積極動作，因此兩種可能都有。Lehiste 1970 (p.70)引了Ladefoged的看法說，舌位的提高引起喉頭上昇，這就使喉頭肌肉的緊張度增高，因而基頻上昇。Honda 1983看出，頰舌骨肌(Geniohyoid, 在舌頭下部)及後部頰舌肌(posterior genioglossus, 在舌頭裡面)的活動與intrinsic pitch相適應，於是他也認為這些肌肉拉上舌骨及喉頭以導致基頻上昇(又參看本多1987)。這是一方面。另外，上面已經看到，SH在低音域的活動是很明顯的。²⁹ SH也起到拉下舌骨的作用，以便開大下顎及拉下舌位。那麼，發低音與發低元音的動作有可能體現在一起。

現在回到漢語方言裡的聲調問題。

關於福州話，如果較低較後的元音為後起這個看法是對的話，似乎可以沿著平山1977的設想解釋為發低音時SH活動以導致舌骨乃至舌位向後下方的移動。但還存在一些問題：第一，據袁等1983(292頁)，陰入(甲)的調值在陰平、陽平、陽入之前替換成21:，低於上聲31:，也低於陰入本調23:，但不念成“變韻”而念成“本韻”；第二，據Norman 1972的描寫，寧德話和福安話的調值如下：

28 另外，上引大阪話的實驗結果當中還有一點值得注意，即：SH的活動在語音的發出以前就開始。這就是說，“沒有聲音的地方”也可能有發音動作，在進行音位解釋的時候可以據此認為該音節的前面有(“低音開頭”的)音位標記。有人以為音高的音位標記只能在音節的範圍(也就是“有聲音的地方”)裡存在，因此特地記在這裡。

29 但喉頭下降導致基頻下降的具體生理機制還不大清楚。

| | 陰平 | 陽平 | 上聲 | 陰去 | 陽去 | 陰入 | 陽入 |
|----|----|----|----|----|----|-----------|-----------|
| 寧德 | 33 | 11 | 41 | 35 | 41 | <u>33</u> | 5 |
| 福安 | 43 | 11 | 41 | 35 | 13 | <u>54</u> | <u>21</u> |

在寧德話，陽平、陰去、陽去和陰入念“變韻”；在福安話，陰平、陽平、陰去、陽去、陰入和陽入念“變韻”。寧德話跟福州話的不同是陽平也念“變韻”。寧德話的陽平是 11:，所以按照上面的解釋，念“變韻”也不足為奇；但陰去、陽去、陰入的調值並不低。福安話的情況更是嚴重的反證。當然，閩東方言的這種韻變現象不一定是在現代的調值系統下產生的，產生變韻時的聲調系統也可能有不同的面貌。³⁰ 但由此也可以得到一個教訓，討論這個現象不能光看福州話，還要看到整個閩東方言裡的情況。陳 1984 已做到了這一點，只可惜論文裡沒有列出各個方言點的調值。³¹ 北京話的 iou、uei 韻母的主要元音（發音部位較低）在上聲、去聲更明顯，這也可能跟低調有關。去聲的後半部分在低音域，上聲當然是最低。至於 er 韻母，只有去聲變成較低的元音，其原因未詳。

《翻譯老朴》的入聲分化可以理解為固有音高的不同所引起的，粵語的入聲分化，如果產生元音高低尚未變成元音長短之前的話，也如此。至於閩南話白讀層的入聲分化，按照現在的音值，內外轉的類別不表現為元音高低的差別，比如咸、山攝三四等念 i?。就這一點，廣州話也如此，現在念成高元音 i:p、i:t，但這些 i: 來自 *iɛ。閩南話白讀層是否曾經有過類似的來歷也關係到如何解釋入聲分化問題，需要今後進一步考察。

5. 元音引起的聲調變化少見的原因

上面主要以漢語方言為例看到了元音和聲調之間產生的音變。如果更徹底地

30 例如，寧德話的上聲和陽去合併在一起，但上聲照樣念“本韻”。可見寧德話的韻變現象不以現代的聲調系統為條件，保留了上聲和陽去合併以前的替換情況。

31 閉 1991 報告，廣西省橫縣平話的止攝、遇攝字逢今陰平 [44]、陽平 [13]、陰上 [33]、陽上 [22] 念 [i][u][y]，逢今陰去 [55]、陽去 [42] 念 [ai][au][ɔi]。這也是跟閩東話類似的現象，也構成上述假設的反證。

查找就可能找得到更多的例子。但是就整個漢語方言裡的比例來說，這種音變現象確實屬於少見。這是為什麼？

論固有音高，那些基頻的差別是機器測量出來的，雖然這些數據和人耳的實際音高感知之間有相當密切的對應關係，但也不能在物理量和心理量之間單純地劃等號。據王 1983(44-6 頁)，用機器合成同一基頻的各種語音，聽起來低元音顯得比高元音高。這就是說，對人耳來說，低元音的基頻比高元音稍微低纔聽起來顯得一樣高。這可能因為在自然語言裡低元音的響度一般比高元音大，而響度的不同也影響到人耳的音高感知。考慮到這種人耳的補償作用，固有音高在主觀聽覺上的差別也可能沒有機器測量出來的數據那麼大。

在第二節綜觀了元音引起聲調變化的現象，其中引人注目的是在入聲產生的例子居多。這不僅是漢語（粵語、閩南話、《翻譯老朴》）如此，其他漢藏語（台語、瑤語、緬甸語）也如此。這可以由調位 (toneme) 分配的不平衡狀態來說明。至少從中古時期以後，在絕大多數方言裡入聲跟舒聲的不同在於韻尾，而入聲和舒聲所使用的音高模式（即調位）則是一樣的。而且入聲所使用的調位總是比舒聲少，於是在入聲產生的細微的語音變體較容易被聽成舒聲調所已有的其他調位。這種結構上的原因可能導致此現象集中出現在入聲。反過來說，哪怕在舒聲調有固有音高的不同，也總是伴隨於元音的類別，不構成音位對立；而對母語說話人來說，構成互補關係的音值差異很難覺察出來。

聲母清濁所引起的陰陽調分化之所以成為音位性變化而固定下來，是因為後來全濁音合併到清聲母去，陰陽調的不同取代了原來聲母清濁所擔負的對立功能。元音的合併一般產生於元音系統中鄰近的音素之間，而發音部位各居頂端的元音（如 i 和 a、u 和 a 等等）一下子合併在一起是幾乎不可能的事，那麼伴隨於元音類別的音高差別也一直停留在語音變體的階段，很少跨步替代元音所擔負的音位功能而取得區別性特徵的地位。

（本文於民國八十一年十一月十九日通過刊登）

附記：本文爲日本文部省科學研究費資助的研究成果之一。在會議前後承王士元、葉德明、François Dell、徐雲揚、何大安、洪惟仁、張月琴等先生指教，特此致謝。

參考文獻

簡稱：Ann. Bull. RILP = Annual Bulletin of the Research Institute of Logopedics and Phoniatrics, The University of Tokyo.

秋永一枝 (Akinaga, Kazue) 1966. 〈佐柳アクセントの提起するもの〉，收在徳川宗賢編《論集日本語研究 2 アクセント》94-107 頁，東京，有精堂，1980 年。

雨森良幸 (Amenomori, Yoshiyuki) 1961. 〈喉頭支持機構に関する音聲學的研究〉《音聲科學研究》1, 95-110 頁。

有坂秀世 (Arisaka, Hideyo) 1940. 《音韻論》，東京，三省堂。

白滌洲 1936. 〈關中入聲變讀的原因和程序〉，《國學季刊》6:1, 25-44 頁。

閉克朝 1991. 〈橫縣平話中的韻隨調轉現象〉，《華中師範大學學報（哲社版）》1991:1, 105-110 頁。

Bless, Diane M. & James H. Abbs (eds.) 1983. *Vocal Fold Physiology*, San Diego, College-Hill Press.

Catford, J. C. 1977. *Fundamental Problems in Phonetics*, Edinburgh, Edinburgh Univ. Press.

Chang, Kun. 1975. "Tonal Developments among Chinese Dialects," *Bulletin of the Institute of History and Philology*, Academia Sinica, 46:4, 636-709.

陳其光 1979. 〈苗瑤語入聲的發展〉，《民族語文》1979:1, 25-30 頁。

- 陳潤蘭、李唯實 1984. 《襄垣方言志》，山西省方言志叢刊7，山西省社會科學院語言研究室。
- 陳紹齡、郝錫炯 1959. 〈峨嵋音系〉，《四川大學學報（社會科學）》11, 1-66 頁。
- 陳澤平 1984. 〈福州話的韻母結構及其演變模式〉，《語言學論叢》13, 77-98 頁。
- 戴慶廈 1958. 〈談談鬆緊元音〉，《少數民族語文論集》第二集，35-48 頁，北京，中華書局。
- 董同龢 1957. 〈廈門方言的音韻〉，《歷史語言研究所集刊》29, 231-253 頁。
- 遠藤光曉 (Endō, Mitsuaki) 1982. 〈北京語“er”の來歷〉，《日中學院創立三十周年記念文集》88-93 頁，東京，日中學院。
- 1984a. 〈《翻譯老乞大・朴通事》裡的漢語聲調〉，《語言學論叢》13, 162-182 頁。
- 1984b. 〈邵陽方言の聲調〉，《中國語學》231, 39-49 頁。
- 1986. 〈粵語咸攝一等牙喉音の主母音について〉，《開篇》2, 1-12 頁。
- 1987. 〈襄垣方言における母音韻尾の鼻音韻尾への變化過程〉，《開篇》4, 20-21 頁。
- 1988. 〈三つの内外轉〉，《日本中國學會報》40, 247-261 頁。
- Erickson, Donna, Thomas Baer, Katherine S. Harris. 1983. “The Role of the Strap Muscles in Pitch Lowering,” in Bless et al. 1983, 279-285.
- 馮隆 1985. 〈北京話語流中聲韻調的時長〉，林燾編《北京語音實驗錄》，131-195 頁，北京，北京大學出版社。
- Fromkin, Victoria A. (ed.) 1978. *Tone, A Linguistic Survey*, New York, Academic Press.
- Fukui, Ray. 1981 “Intrinsic Pitch as a Possible Cause of Linguistic Change in a Language like Japanese,” *Working Papers in Linguistics*, 72-80, Department of Linguistics, The University of Tokyo.

- Gandour, Jack, Ian Maddieson, 1976. " Measuring Larynx Movement in Standard Thai Using the Cricothyrometer," *Phonetica*, 33, 241-267.
- Gandour, J. 1977. " On the Interaction between Tone and Vowel Length: Evidence from Thai Dialects," *Phonetica*, 34, 54-65.
- Gandour, J. Bernd Weinberg. 1980. " On the Relationship between Vowel Height and Fundamental Frequency: Evidence from Esophageal Speech," *Phonetica*, 37, 344-354.
- Hallé, P.A., Seiji Niimi, Satoshi Imaizumi, Hajime Hirose. 1990. " Modern Standard Chinese Four Tones: Electromyographic and Acoustic Patterns revisited," *Ann. Bull. RILP*, 24, 41-58.
- Hashimoto, Mantaro J. 1972. " The Linguistic Mechanism of Flip Flop," *Unicorn*, 10, 1-19.
- Hashimoto, Oi-kan Yue. 1972. *Phonology of Cantonese*, Cambridge University Press.
- 何大安 1988. 〈「濁上歸去」與現代方言〉，《歷史語言研究所集刊》59:1, 115-140 頁。
- 樋口勇夫 (Higuchi, Isao) 1990. 〈太谷方言の聲調體系〉，《中國語學》237, 23-32 頁。
- 平山久雄 (Hirayama, Hisao) 1958. 〈北京語の音韻論に關する二三の問題——特に主母音と r 化について〉，《言語研究》35, 31-51 頁。
- 1973. 〈中國語閩南閩北祖方言の聲調調值〉，《東京大學文學部研究報告》5, 193-248 頁。
- 1975. 〈廈門話古調值的內部構擬〉，《*Journal of Chinese Linguistics*》3:1, 3-15.
- 1977. 〈中古音重紐の音聲的表現と聲調との關係〉，《東京大學東洋文化研究所紀要》73, 1-42 頁。

- 廣瀬肇 (Hirose, Hajime) 1976. 〈喉頭〉〈音聲言語の生理〉, 澤木修二等編
《臨床耳鼻咽喉科學 1 —— 基礎編》第 4、第 6 章, 307-367 頁, 421-449
頁, 東京, 中外醫學社。
- Hombert, Jean-Marie. 1976a, " Consonant Types, Vowel Height and Tone in
Yoruba," *UCLA Working Papers in Phonetics*, 33, 40-54.
- 1976b. " Development of Tones from Vowel Height," *UCLA Working
Papers in Phonetics*, 33, 55-66.
- 1978. " Consonant Types, Vowel Quality, and Tone," in Fromkin
1978, 77-111.
- 本多清志 (Honda, Kiyoshi) 1983. " Relationship Between Pitch Control and
Vowel Articulation," in Bless et al. 1983, 286-297.
- 1987. 〈母音の調音と聲の高さとの関連性〉, 《音聲言語》2, 79-88 頁。
- 金有景 1985. 〈襄垣方言效攝、蟹攝 (一、二等韻) 字的韻母讀法〉, 《語文研
究》1985:2, 58-62 頁。
- Juhl, R. A. 1980. " Tonal Influence on Vowel Merger," *Journal of Chinese
Linguistics*, 8:2, 241-272.
- 垣田有紀 (Kakita, Yuki)、比企靜雄 (Hiki, Shizuo) 1974. 〈サイロメータによる
發聲時の喉頭の制御の観測〉, 《日本音響學會誌》30:1, 14-23 頁。
- Karlgren, Bernhard. 1915, 16, 19, 24, *Étude sur la Phonologie Chinoise*,
Upsala, Appelberg Boktryckeri Aktiebolag. 漢譯本, 參看趙等 1940。
- Kao, Diana L. 1971. *Structure of the Syllable in Cantonese*, Mouton.
- 藍亞秀 1953. 〈福州音系〉, 《國立臺灣大學文史哲學報》5, 241-331 頁。
- Lea, Wayne A. 1973. " Segmental and Suprasegmental Influences on
Fundamental Frequency Contours," in Larry M. Hyman ed. *Consonant
Types & Tone*, Southern California Occasional Papers in Linguistics, 1, 15-
70.
- Lehiste, Ilse. 1970. *Suprasegmentals*, Cambridge, Mass., The MIT Press.

- 李方桂 (Li, Fang-kuei) 1948. 〈莫話記略〉, 《歷史語言研究所集刊》19, 1-80 頁。
- 1977. *A Handbook of Comparative Tai. Oceanic Linguistics Special Publication No. 15*, Honolulu, The University Press of Hawaii.
- 李如龍 1990. 〈聲調對聲韻母的影響〉, 《語言教學與研究》1990:1, 89-95 頁。
- 劉勳寧 1983. 〈古入聲在清澗話中的分化與廣州話的長短入〉, 《語言學論叢》10, 61-76 頁。
- 羅常培 1933. 〈釋內外轉〉, 《歷史語言研究所集刊》4:2, 209-226 頁; 《羅常培語言學論文選集》中華書局, 1963 年, 87-103 頁。
- 馬學良、羅季光 1962. 〈我國漢藏語系語言元音的長短〉, 《中國語文》1962:5, 193-211 頁。
- Maddieson, Ian. 1976. "The Intrinsic Pitch of Vowels and Tones in Foochow," *UCLA Working Papers in Phonetics*, 33, 191-202.
- Malmqvist, Goeran. 1950. "A Phonological Description of Some Irregular Tone Phenomena in the Dialect of Omei, Szechwan," *Studia Serica*, 9:2, 89-93.
- 1962. "Studies in Western Mandarin Phonology," *Bulletin of the Museum of Far Eastern Antiquities*, 34, 129-192.
- Maspero, H. 1938. "Wang Li. -- Relations entre le vocalisme et le ton en chinois, ext. de Ch'ing-hua hsio-pao, 1935. Pékin," *Bulletin de la Société de Linguistique de Paris*, 39, 208.
- Niimi, Seiji, Qun Yan, Satoshi Horiguchi, Hajime Hirose. 1990. "An Electromyographic Study on Laryngeal Adjustment in Production of the Mandarin Chinses Light Tone," *Ann. Bull. RILP*, 24, 7-17.
- 西田龍雄 (Nishida, Tatsuo) 1972. 《緬甸館譯語の研究》, 京都, 松香堂。
- Norman, Jerry L. 1971. *A Guide to the Foochow Dialect*, Washington, D.C., Center for Applied Linguistics.

- 1972. “A Preliminary Report on the Dialects of Mintung,” *Unicorn*, 10, 20-35; also in *Monumenta Serica*, 33, 326-348, 1980.
- Ohala, John J. 1978. “Production of Tone,” in Fromkin 1978, 5-39.
- Ohala, John and Hajime Hirose. 1970. “The Function of the Sternohyoid Muscle in Speech,” *Ann. Bull. RILP*, 4, 41-44.
- Ohnesorg, Karel, Oldřich Švarný. 1955. *Etudes expérimentales des articulations chinoises*, Praha, Rozpravy Československé Akademie Věd.
- 歐陽覺亞 1979. 〈聲調與音節的相互制約關係〉，《中國語文》1979:5, 359-362, 370 頁。
- 尾崎雄二郎 (Ozaki, Yūjirō) 1970. 〈切韻系韻書における韻の排列について〉，《日本中國學會報》22, 34-51 頁；《中國語音韻史の研究》100-128 頁，創文社，1980 年。
- 潘家懿 1984. 〈從交城方言看漢語入聲消失的歷史〉，《音韻學研究》1, 429-432 頁。
- 賴惟勤 (Rai, Tsutomu) 1951. 〈聲調變化について〉，《日本中國學會報》2, 27-44 頁。
- 1954. 〈廣州方言の介音について〉，《中國語學研究會會報》30, 1-8 頁。
- 1958. 〈中古中國語の内・外について〉，《お茶の水女子大學人文科學紀要》11, 31-59 頁。
- Simada Z. & H. Hirose. 1971 “Physiological Correlates of Japanese Accent Patterns,” *Ann. Bull. RILP*, 5, 41-49.
- Sugito, Miyoko & Hajime Hirose. 1978. “An Electromyographic Study of the Kinki Accent,” *Ann. Bull. RILP*, 12, 35-51.
- 陶燠民 1930. 〈閩音研究〉，《歷史語言研究所集刊》1:4, 445-470 頁；單行本，北京，科學出版社，1956 年。
- 王力 1928. 〈兩粵音說〉，《清華學報》5:1, 1519-1565 頁。
- 1935. 〈從元音的性質說到中國語的聲調〉，《清華學報》10:1, 157-183

頁。

- 王力、錢淞生 1949. 〈東莞方音〉，《嶺南學報》10:1, 119-150 頁。
- 王天昌 1969. 《福州語音研究》，臺北，世界書局。
- 王士元 (Wang, William S-Y) 1968. "The Many Uses of Fo," *Project On Linguistic Analysis Reports*, 2nd Series, 8, W-1-W-35; also in *Explorations in Language*, Taipei: Pyramid Press, 193-204, 1991.
- 1983. 〈實驗語音學講座〉，《語言學論叢》11, 3-103 頁。
- & Kung-Pu Li. 1967. "Tone 3 in Pekinese," *Journal of Speech and Hearing Research*, 10:3, 629-636; also in op. cit. 186-192.
- 王育德 1968. 《閩音系研究》，東京大學博士論文，收在王育德《臺灣語音の歴史的研究》，東京，第一書房，1987 年。
- 吳宗濟、曹劍芬 1979. 〈實驗語音學知識講話（四）〉，《中國語文》1979:5, 393-398 頁。
- 顏森 1986. 〈江西方言的分區（稿）〉，《方言》1986:1, 19-38 頁。
- 楊述祖 1983. 《太谷方言志》，山西省方言志叢刊 3，山西省社會科學院語言研究室。
- 俞光中 1986. 〈說內外轉〉，《音韻學研究》2, 257-263 頁。
- 袁家驊等 1960, 1983. 《漢語方言概要》，第一版，第二版，北京，文字改革出版社。
- Yue, Oi-kan. 1976. "Interplay of Vocalic Segments and Tones in Yue Dialects," *Genetic Relationship, Diffusion and Typological Similarities of East & Southeast Asian Languages*, 47-59, The Japan Society for the Promotion of Science.
- Zee, Eric. 1978. "The Interaction of Tone and Vowel Quality," *UCLA Working Papers in Phonetics*, 41, 53-67.
- 張崇 1990. 《延川縣方言志》，北京，語文出版社。
- 趙元任 (Chao, Yuen-ren) 1928. 《現代吳語的研究》，北京，清華學校研究院。

- 1934. “ The Non-Uniqueness of Phonemic Solutions of Phonetic Systems, ”
BIHP, 4:4, 363-97; also in Martin Joos ed. *Readings in Linguistics*, I, 38-
54, Chicago, The University of Chicago Press, 1957.
- 1948. 〈中山方言〉，〈《歷史語言研究所集刊》20, 49-73 頁。
- 1951. 〈台山語料〉，〈《歷史語言研究所集刊》23:1, 25-76 頁。
- 1968. *A Grammar of Spoken Chinese*, Berkeley, University of California
Press.
- 等譯 1940. 《中國音韻學研究》，臺灣商務印書館重印，1982 年。
- 等 1948. 《湖北方言調查報告》，台聯國風出版社重印，1972 年。

Vowel and Tone

Endo Mitsuaki

Seizan College

While the nature of the initial consonant of a particular syllable and the tone of that syllable clearly are closely related, the relationship between the vowel quality and tone is not as obvious. Using data from Chinese dialects and other languages, this paper presents examples of tone changes caused by a difference in vowel quality and vowel changes caused by a difference in tone value, and attempts to explain these changes by reference to physiological factors of speech production.

Tone Sandhi & the Dissimilation of Phonation Types¹ Reflexes of the Beijing Mandarin Third Tone Sandhi Rule in Northern Chinese Dialects

Deborah S. Davison

California State University/UCLA Phonetics Laboratory

A selection of dialects from the Northern and Central Mandarin Chinese dialect groups are found to share distinct sets of reflexes for Mandarin tones two and three: high rising and low dipping, vs. low and high (falling), respectively. Some also share a putative pan-Mandarin tone sandhi rule in which a pair of lexical tone three syllables is realized as a sequence of tone two plus tone three. These data support an historical phonation dissimilation (Egerod 1971) over the traditional low tone dissimilation analysis of the Mandarin tone sandhi rule.

1. Previous Studies of Tone and Voice Quality in Chinese

The analysis of Early Middle Chinese (EMC, 3rd c. B.C.-5th c. A.D.)

1 Earlier versions of this paper were presented at the 21st ICSTLL (Lund 1988) and the 1988 annual LSA meeting and appeared in Davison 1989. This research was supported by NIH grant 1T32 DC 00092-01.

shang 'rising' and *qu* 'departing' tones as originating in the syllable-final segmental features /-ʔ/ and /-s/ in Old Chinese (OC, 1027-213 B.C.) was proposed on comparative grounds by Haudricourt 1954 and supported by internal evidence in Mei 1970 and Pulleyblank 1973.

Pulleyblank 1978 analyzes the lenition of /-ʔ/ and /-s/ to creaky and breathy phonation types occurring throughout the EMC to Late Middle Chinese period (LMC, 6th-11th c. A.D.) to be the source of the second and third respectively of the four Middle Chinese etymological tone categories, *ping* 'level', *shang* 'rising', *qu* 'falling', and *ru* 'entering'. He dates the *yin/yang* register split based on voicing of the initial stop consonant (voiceless to high, voiced to low) as *ca.* the 9th century A.D., considerably later than tonogenesis induced by transphonologization of syllable-final glottal stricture features. Phonation distinctions thus are claimed to underly four tonal developments attested in Early Mandarin (EM, 12th-14th c. A.D.): (i) upper and lower register split (esp. *yinping/yangping* 'upper-level'/'lower-level' tones), conditioned by -/+ voiced aspiration (breathy voice) of syllable-initial consonants respectively; (ii) breathy voiced obstruent 'lower' initial, glottal/creaky voice 'rising' final tone class merging to breathy and sometimes voiced 'departing' final tone class, after assimilation of creaky voiced syllable closure to syllable-initial breathy aspiration in the 'rising' tone class, symbolically $p\dot{h}___ʔ \rightarrow p\dot{h}___h$; (iii) later, the breathy voiced obstruent 'lower' initial, 'departing' tone class de-aspirating by dissimilation of aspiration with the breathy voice closure, $p\dot{h}___.h \rightarrow p___.h$ (p. 190); and lastly, (iv) in Early Mandarin (attested in *Zhong Yuan Yin Yun* 'Rhymes of the Central Plain' (ZYYY, 1324 A.D.)), with the loss of *ru* 'entering' tone (Middle Chinese /-p, -t, -k/ syllable-final consonants), voiceless obstruent 'upper' initials of syllables under entering tone merging to rising (by that time, clear short)

upper level tone class, sonorants to departing (breathy short) tone class, and voiced obstruents to lower level (breathy long) tone class.

Pulleyblank 1978 is an important first attempt to characterize LMC and EM historical tone patterns as well as the earlier division of the Middle Chinese lexicon into four tone classes by reference to historically prior laryngeal features other than pitch (fundamental frequency). By implication, an intermediate stage of distinctive voice quality and pitch features to mark lexical tone categories also is predicted. The introduction of a tonal distinctive feature of phonation type suggests reanalyses of a variety of data. Thus the LMC Tang dynasty *ping/ze* 'level/oblique' rhyming convention in regulated verse allowing rising, departing, and entering tone words to interrhyne with each other but not with level tone class syllables, and vice versa, is analyzed by Zhou 1948 as reflecting a long/short syllable nucleus length distinction and by Ting 1985 as distinguishing a level/contour tone distinction. The systematic distribution of these features is in the former case not confirmed by synchronic dialectal evidence and in the latter difficult to motivate phonologically. An analysis in terms of distinctive or systematic redundant glottal features may be more explanatory both of the rising vs. departing tone distinction and of the feature shared by the three *ze* 'oblique' tone classes as against the lexically more numerous *ping* 'level' tone class.

A multi-featured approach to Chinese tones is exploited by Yip 1980, who distinguishes binary tonal from binary registral features in tone sandhi and other tonological rules for Chinese dialects. However, in the absence of synchronic dialectal evidence on the nature of the interaction of pitch and register features, in some cases Yip is led to propose *ad hoc* and ultimately contradictory rules. A continuing problem for researchers in this field is that systematic Chinese language data on glottal states are lacking, though see

Rose 1982, Cao and Maddieson to appear, Sagart 1985, and Davison 1990.

Despite the difficulties attending the identification and representation of phonetic and phonological voice quality features both historically and in modern Chinese dialects, there are reasons beyond those already mentioned to consider the multiple-tone systems of Chinese to reflect more underlying features than simply +/- high pitch, or even a sequence of two or more such pitch features associated with one syllable.

On the one hand, from an areal/genetic viewpoint, analysis in these terms of East and Southeast Asian languages other than Chinese is considerably advanced by scholars such as Haudricourt, E. J. A. Henderson, H. Short, G. Diffloth, J. Edmonson, D. Solnit, and others. The dense tonological overlay found in most modern Chinese dialects has obscured in Chinese what are outstanding synchronic glottal features of Kadai Mon-Khmer languages, and clearly indicated ones for Written Burmese, etc.

On the other hand, synchronically in Chinese the trend toward merger of tone classes is strong, with many Mandarin dialects, such as Pingyao, mentioned below, distinguishing only three instead of four tone classes in all or (Pingyao) most environments. Chan 1985:194 notes five phonologically contrasting tone contours prepausally in Fuzhou dialect, reduced to three phrase-internally. The language universal tendency, observed in African tone languages, toward few phonemic pitch distinctions supports an interpretation of Chinese tonal systems as unstable to the extent that pitch is the exclusive marker of tone class.

Egerod 1971, Sagart 1985, and others assume the association of phonation features both historically and synchronically to lexical tone classes in the Chinese dialects they describe. Egerod 1971, whose contribution is cited in detail below, says of Chinese that " tones developed from final

features are pre-Ancient² and tones developed from initial features are post-Ancient. Tones however often tend to retain laryngeal features from their origin, as redundant phonetic material, and these redundant features may clash with each other and influence the actual phonetic tone which develops. ” In this paper, divergent tone sandhi patterns across Northern Chinese dialect subgroups are proposed to have derived historically from a single phonation dissimilation rule. Phonation type distinctions were preserved after pitch shapes evolved (flip-flopped). Due to length constraints the role of the mediating factor of syntactically sensitive stress patterns is not discussed.

2. Third Tone Sandhi in Beijing Mandarin

The Beijing Mandarin tone sandhi (TS) rule is represented in (1a-b), which also introduces the letters E, F, G, H to signify Mandarin’s four tones, corresponding to Beijing Mandarin tones 1-4 (ff 3). The rule also may be described as in (1c). (1c) highlights the fact that phonological neutralization of sandhi tone category G, resulting in its merger to tone category F, occurs in sandhi position with the application of this rule.

(1) Beijing Mandarin Tone Sandhi (TS) Rule

(a) $\uparrow + \uparrow \rightarrow \uparrow + \downarrow$

(b) 214 \rightarrow 35/ __ 214

Beijing (Northern Mandarin) has four tone categories, with values (5= high to 1=low) E 55, F 35, G 214, H 51

2 Bernhard Karlgren’s term ‘Ancient Chinese’ is equivalent to Pulleyblank’s Early Middle Chinese, i.e. the language of the *Qie Yun*, 601 A.D.

(E (even) = *yinping* 'upper even'; F (voiced initial even) = *yangping* 'lower even'; G (glottalized) = *shang* 'rising'; H (aspirated) = *qu* 'departing', respectively. K = *ru* 'entering' where present)

(c) G → F/ __ G, for Northern Chinese tones EFGH(K)

(2a) below shows that the rule applies word-internally. (2b) illustrates the closed class of lexical exceptions. In (2a) TS must have applied before the second syllable is reduced to neutral tone. In (2b) TS is lexically marked not to apply to reduplicated terms of address.

(2c) represents the operation of the external Beijing TS rule in context. It is claimed to apply more frequently (across more boundaries) in fast speech, though the domain of application is controversial.

The Beijing TS data, formulated as above by Egerod 1971, fit Hock (1986:113)'s generalization that "dissimilation [is] a regular process if it affects glottal features and if its application establishes a general limit on the occurrence of such features within the word", if modified to allow application within external sandhi domains as well as internal ones. (3c) indicates that Pekinese limits the number of glottal features per prosodic unit to one.

| | | |
|-----------------------------------|-----------------------------------|--------------------|
| (2) (a) <i>jie jie</i> 'to loosen | (b) <i>jie jie</i> 'older sister' | |
| G G slightly' | G G | basic tones |
| F | DNA | Pekinese TS ((2a)) |
| 0 | 0 | Neutral tone |

| | |
|----------------|----------------|
| /tɕɛ ɿ tɕɛ ɿ / | /tɕɛ ɿ tɕɛ ɿ / |
|----------------|----------------|

(c) [[lao li NP] [mai hao VR] jiu VP] S] (Cheng 1973)
 old Li buy complete wine
 'old Li [having, iii] bought wine'

- | | | | | | |
|------|---|---|---|---|-------------------------|
| i) | G | G | G | G | G basic tone categories |
| ii) | F | G | F | F | G careful speech |
| iii) | F | F | F | F | G fast speech |

2.1 Beijing tone sandhi as phonation dissimilation

Egerod 1971 analyzes the Pekinese tone sandhi condition in which a sequence of two *shang* 'rising' (here, 'G'³) tone syllables in close juncture are pronounced like a sequence of *yangping* 'lower level' ('F') plus *shang* 'rising' as historically $\uparrow + \uparrow \rightarrow \uparrow + \downarrow$, originating in a phonation dissimilation process analogous to the operation of Grassman's Law in Sanskrit and Greek, illustrated in (3).

-
- 3 In the tradition of Chinese historical phonology, in my 1989 dissertation I made use of a semi-mnemonic set of alphabet letters E F G H (K) to refer to the Early Mandarin etymological tone categories. (Archaic Chinese tone categories are traditionally designated A B C D). In contrast to the phonetic designations of tone contours represented by sequences of the numbers 1-5 (1=highest pitch, 5=lowest) traditionally used in synchronic dialectological studies, E-K correspond to Mandarin lexical tone categories designated by the Chinese terms *yinping*, *yangping*, *shang*, *qu*, (*ru*) (< MC *Ia, Ib, IIa + IIbs, III + IIbo, and IV, in which I=level, II=rising, III=departing, IV=entering, a=voiceless, b=voiced, s=sonorant, o=obstruent.) The letters stand for E, even, an alternate translation for *ping* 'level', F (comes after E), G, Early Middle Chinese (EMC) glottal syllable closure, H, EMC breathy *h* syllable closure, and K, Early Mandarin oral stop syllable closure, sometimes present synchronically as a separate tone category, with or without glottal stop closure in Northern dialects. G and H follow Pulleyblank 1978's reconstructions for Early Middle Chinese (but cf. Egerod 1971 and Sagart 1985). While the EFGH (K) system has the potential disadvantage of erroneously implying the existence of an *ABCDEFGH(K) tonal stage, it is necessary in a study such as this to be able to distinguish unambiguously among upper case letters designating historical etymological/lexical tone categories; lower case letters referring to consonantal manners/glottal states (a, b, s, r); and numbers, reserved to describe surface phonetic tone contours. In the ensuing, then, lexical tone categories in Northern Chinese dialects are EFGH(K), while phonetic values are expressed as a sequence of numbers 1-5 describing relative pitch height (5 high, 1 low) and comparative length of a contour (except that all numbers followed by a ? (glottal stop closure) are implied to be short regardless of contour (i.e., 5?=34? in duration).

(3) Grassman's Law (Hock 1988:111)

- bIE *bhudhyetoy Skt. budhyate 'is awake'
 *bhebbhowdhe buboodha 'was awake'
 *dhidheemi Gk. titheemi 'put'
 *g'heg'hewa kekheua 'poured'

Egerod concludes that in Pekinese " the original contours probably were \uparrow h + \uparrow h [my ? + ?, after Pulleyblank 1978]. The first member of the sandhi group lost the laryngeal feature. The second member, as this final type did in all sandhi groups, exaggerated the crescendo into a dip and maintained a glottal friction quality (fn 12)...in Fuchow the same sandhi group became \uparrow + \downarrow ... in Fuchow the sandhi group which is derived from \downarrow h + \downarrow h [MC III + III, cf. my H + H below]... is now manifested as \downarrow + \downarrow ...again it is the first member of the sandhi group that has kept the contour... most intact. "

2.2 Pitch-based analyses

Synchronic studies of Beijing Mandarin have treated this phenomenon as one involving dissimilation of a sequence of low tones by insertion of an intervening high tone (Woo 1969, Cheng 1973, McCawley 1978, Yip 1980) or as adjustment due to decreased duration in sandhi position (Hyman 1975). In (4a) McCawley 1978:120 cites Woo 1969's rule as involving insertion of a H tone ('.' indicates syllable boundary). Yip 1980:284 dissimilates [+upper] to [-upper] register as in (4b) and also L to H tone as in (4c) to give (4d).

(4) Pitch-based analyses of the Beijing TS rule

- (a) McCawley 1978:120 (after Woo 1969) []->[+H]/[-H]__[-H][-H]
(b) Yip 1980:284 [-Upper] -> [+Upper]/__[-Upper]

- (c) L -> H/L_____ [-Upper]
/\
L L
- (d) [-Upper] [+Upper] [-Upper]
/\ /\ /\
L L -> L H /_____ L L

Hyman 1975:94 suggests that contour simplification in non-prepausal position, rather than dissimilation, is involved: "Since in an underlying 214-214 sequence, the ending 4 level of the first dipping tone is followed by a considerably lower initial level in the second dipping tone, absorption [of the first syllable's contour-final H tone] cannot occur. Instead, the 214 sequence undergoes a contour simplification which causes it to merge with the 35 [F] tone."

The historical explanation above posits that within a prosodic group, creaky voice phonation deletes on all but the rightmost of a sequence of syllables sharing identical voice quality. Of the four explanations given above for the Beijing TS rule: low tone dissimilation, low register dissimilation, tone contour simplification in context of shortened duration, and glottal dissimilation, only the last provides a means to a unified account of the tone sandhi phenomenon in (1c) occurring in Mandarin dialects other than Beijing, in particular ones whose basic pitch contours for G are low rising, high level or high falling rather than dipping. These facts support an interpretation that the GG TS rule is synchronically pan-dialectal within Mandarin and historically pre-tonal in origin, specifically involving dissimilation of syllable-final glottalization. Historical evidence of the antiquity of the Beijing tone sandhi rule is reviewed below.

3. Historical Evidence of Early Mandarin Tone Sandhi

Historical documentation of tone sandhi in Early and Middle Mandarin was first analyzed by Mei 1977.⁴ Mei translates a section of the *Fanli* ‘General Principles’, written by the 16th century Korean scholar Cui Shizhen, which is found appended to the 14th century *Laoqida yanjie* and the later *Putongshi yanjie*, two textbooks for learning Chinese, once widely used in Korea and often printed together in a single volume:

(5) “ If both syllables are in the Rising [G] tone, then the circumstances make it difficult to retain the original tone. In this case, pronounce the first syllable like the voiced variety of the Level tone [=F], and then the second syllable can retain its original tone when pronounced. Therefore the first syllable gets two dots. ”

as well as the *Qulyu* ‘Rules of versification for the Qu poetic style’ by the Chinese Ming dynasty critic Wang Jide (?-1623):

(6) “ One should not repeat a Rising [G] tone after another Rising tone, nor a Departing [H] tone after another Departing tone. Two syllables both in the Rising tone are especially clumsy. Two Departing tones in succession may not sound nice; but when sung, they still retain their original tone.

4 Mei says that the *Fanli* represents contemporary (14th century) Peking pronunciation. *Fanli* records abrupt (=glottal stop -ʔ) closure for *ru* ‘entering’ tone, while modern Pekinese merges *ru* (K) to E-H, and Zhongyuan Yinyun (‘ZYYY’, 1324, A.D.) merges *ru* (K) to F-H, cf. modern (Shandong Province) Rongcheng dialect (see Davison 1989). Southeast Mandarin and Jin dialects retain -ʔ for entering, K tone. Pulleyblank 1984’s ‘Early Mandarin’ is essentially the ZYYY language; therefore, strictly speaking, *Fanli* is not the same language as what is referred to herein as EM.

When one Rising syllable is repeated after another, however, the first syllable sounds like a Level [either E or F] tone.... It may not be possible to avoid ready-made binoms such as *wanGzhuanG* ‘tactful’, *mingGdingG* ‘in an alcoholic stupor’, *niaoGniaoG* ‘to drift on the wind (of smoke, willow branches)’, and *zhengGzhengG* ‘whole, entire’. But for all newly coined expressions, it is best to avoid [two rising tones in succession].”

Mei claims that the 16th century Mandarin GG tone sandhi rule has the same phonological form as does the modern Pekinese GG tone sandhi rule, namely, as formulated by Cheng 1966:

(7) low + low -> high-rising + low

He interprets the Middle Korean (16th C) evidence as showing 16th C Pekinese to have tone values E35 F13 G22 H55 K2, but then quarrels with some details, arguing that F is really high rising, H falling. These revisions produce a system remarkably close to modern Pekinese (except for K, see fn 4).

Mei also cites the Early Modern Mandarin text *Zhongyuan Yinyun* ‘Rhymes of the Central Plain’ (ZYYY), 1324, by Zhou Deqing, on Qu versification:

(8) “ When prosody calls for a pair of Oblique tones [=G & H], it is alright to use a Rising [G] tone, or a Departing [H] tone followed by a Rising tone. It would be best to avoid a pair of Rising tones or a pair of Departing tones. If the expression is familiar, there is no harm. ”

Unlike the aforementioned sources, Zhou Deqing is not precise about

why he considers quatrain-final GG and HH sequences to be undesirable. Ning 1986 offers several possible interpretations. She cites additional portions of Wang Jide's Ming dynasty commentary *Qulyu* (cf. (8)) to support the interpretation that the proscription against GG in ZYYY was due to the application of a GG → FG TS rule equivalent to Beijing TS applying in the *qu* texts.

Ning 1986 compares actual rhyming practice of the 69 *qu* styles mentioned in ZYYY with Zhou Deqing's rule in (8) and finds actual practice to differ in avoiding G + H though allowing H + G sequences. In the corpus of extant Yuan dynasty *qu* songs in the 69 styles, Ning found totals of 1099 H + G doublets quatrain-finally, compared to 55 G + H, 76 G + G, and 85 H + H combinations. In addition, she observes a tendency to avoid combinations of EG (435 occurrences) and especially GE (81 occurrences) quatrain-finally, which she attributes to E and G being too similar in pitch. The constraint against GG and HH sequences is found to occur equally strongly word internally, whereas that against GH applies only quatrain-finally.

Ning also notices a high incidence of G tone-final quatrains, which she believes reflects the capacity of G tone's long, dipping contour to accommodate musical flourishes.

Ning uses internal evidence to carefully reconstruct the tone values E33 F45 G315 H51 for the 14th century EM ZYYY language. She observes that in describing the function of G tone in individual songs, Zhou Deqing employs the terms *qidian* 'rising' (same as for F45) and *zhuandian* 'turning, reversing direction' (= G315) for G tone in sandhi context and elsewhere, respectively. This indicates that G had the rising and dipping allotones in the same contexts as found in modern Beijing dialect, confirming Mei's arguments

based on the later Korean sources that the EM GG → FG rule closely resembles the Beijing TS rule phonetically (at least as described in (2a), though not precisely as in (7)).

However, despite her own *qidian/zhuandian* evidence of the G tone allotonic contours in ZYYY favoring the historical tone sandhi interpretation to the contrary, Ning analyzes the constraint found to apply in practice blocking GG and HH contour sequences as due to “the pitch difference between onset and offset of each of the two tones [being] too great” to allow them to be sung naturally and easily in sequence. Thus she does not mention the possibility, suggested by the other historical sources, that changes in tone shape effected by tone sandhi inhibited use of GG and HH tone combinations.

Quatrain-penultimate G tone is as rare preceding tones E(/F) (81 occurrences) and H (55) as G (76), though only GG is additionally constrained not to occur phrase-internally. Accepting the testimony of the preceding sources that tones are preferred to be sung with their citation pronunciations, it is conceivable that an additional, non-neutralizing G allotone occurred pretonically in EM (as in modern Beijing and Tianjin Mandarin dialects) causing weakly stressed G in GE, GF and GH quatrain-final sequences to be avoided.

3.1 Analysis of the historical evidence

The two Middle Mandarin sources as well as additional evidence from Ning 1986 suggesting that in Yuan *qu* the distinction between F and G tones neutralizes before G tone support the overall claim that the GG → FG TS rule applied categorically in Early Mandarin. As noted above, Ning suggests the interpretation for the proscription against GG and HH sequences that a

sequence of GG low + low or HH falling + falling tones is melodically demanding and inappropriate. This seems a possible interpretation of HH in particular (cf. (6) above). However, in the case of GG, the later external sources attesting to the existence of GG → FG sandhi suggest application of tone sandhi to be the more satisfactory explanation for the EM (ZYYY) data as well.

Thus the rarity of quatrains ending in GG is assumed here to reflect the problem to the melodist that the first of two tones obligatorily changes its sound via the sandhi rule, to the point of losing its meaning-distinguishing function (again, see (6)). The tone sandhi rules are automatic, so that not applying them sounds unnatural. The tonemically less transparent sequences are more difficult to understand, so they are avoided in the songs. Zhou Deqing's qualification that 'familiar' lexemes were better tolerated is consistent with this interpretation. In sum, the problem with G + G sequences, avoided both quatrain finally and line-internally, was that the automatic application of GG → FG TS neutralized the F/G tonemic distinction pretonically.

H + H was also avoided, according to ZYYY and Wang Jide. Wang Jide's interpretation was that HH was unmusical when sung on the original pitches. As discussed below, neutralizing HH → EH TS is attested in Tianjin Mandarin, allophonic HH TS in Beijing, and varieties of HH TS also exist elsewhere. Therefore the possibility arises that a less widely attested HH TS rule existed in EM (see 5.2 below).

3.2 The phonetic form of Early Mandarin tones

Mei argues on the basis of the Korean evidence that ZYYY citation tones are virtually identical to those of Beijing Mandarin. However, this may

reflect a mistaken identification of the Mandarin of the *Fanli* (which may have been the contemporary Beijing dialect and indeed close to modern Beijing dialect) with that of ZYYY. The latter in fact has a distribution of K tone words in ZYYY more closely resembling the modern Rongcheng dialect of Shandong Province (Kun Chang, pc), whose citation tone contours are E11 F35 G214 H51. Rongcheng is described as having one TS rule, namely, GG → FG. Ning (1986)'s internal reconstruction of EM tone contours closely resemble Rongcheng's.

Regarding G + H and possibly also G + E sequences, avoided only quatrain-finally, one could speculate that G had a word-internal low level allotone which was different from its citation form and perhaps also easily confused with E tone. In modern Tianjin Mandarin, whose citation tones E21 F45 G214 H53 are close to both Rongcheng's and those reconstructed by Ning for EM, the distinction between E and G is in fact neutralized before E and often also H tones. Alternatively, a low/dipping pitch in quatrain-penultimate position may have been inappropriate musically.

Apart from Ning's internal evidence and the Rongcheng external evidence, a third reason may be offered for modifying Mei's claim that EM G was simply low. It is that low pitch alone seems an unlikely candidate feature for the quality G tone possessed on account of which it had an especially musical sound, according to the author of ZYYY. This is particularly so in view of the likelihood that E tone was low or at most mid (not high), thus close to G in pitch level. Ning observes numerous instructions allowing the substitution of E for G and G for E, indicating that they indeed may have shared some feature such as low pitch register in ZYYY times as well.

However, in phrase-final or pre-pausal position, though both E and G

tone were identified as able to be drawn out and embellished, perhaps in *coloratura* fashion, it is only G which is remarked on by Zhou Deqing as being exceptionally musical. The feature unique to ZYYY G could be analogous to modern Beijing pre-pausal G tone's characteristic length, creak or tension, and/or distinctive rising tail. Thus the length, dipping contour, and creak associated non-distinctively but systematically to Beijing tone 3 may well have been present in EM, along with the TS rule.

3.3 Historical development of phonation types and tone contours from LMC to EM

The historical material suggests that the tone sandhi change in EM involves one much like the categorial changes found in modern Pekinese--tones 3 + 3 (=G + G) become 2 + 3 (F + G). The phonetic content of the historical tones remains much debated. Pulleyblank 1978 thinks the four EM tones contrast along the dimensions of breathiness and length: E {-breath +long}, F {+breath +long}, G {-breath -long}, H {+breath -long}, accounting for patterning of K tone merger as well as the longstanding rhyming practice grouping tones G and H (and K), noted above. Sagart 1986 argues against the attribution of breathiness to tone H in Chinese, claiming instead that G originally had high pitched abrupt glottal closure vs. H with low pitched, lax, creaky articulation (parallel to the contrasting glottal tones of Modern Burmese, Matisoff (pc) and to Athapaskan tonogenesis from tense vs. lax creaky phonation, according to Kingston 1985.) Acoustic evidence of ambiguity between the breathy vs. creaky percepts in Tianjin Mandarin is presented in Davison 1990.

In addition are numerous interpretations of the EM pitch contours and those of their precursors. As noted above, Mei concludes that they are

virtually identical to modern-day Pekinese, E55, F35, G22, H53, whereas Ning has E33, F45, G315, H51.

Hashimoto 1982 argues that EM (ZYYY) had E11, F 'higher than E', G also high, thus differing from Tang Dynasty (9th c. A.D.) Chinese which had E tone higher than F. His evidence for the Tang tones is that in the Japanese "*shoomyoo*" Tendai tradition of Buddhist sutra recitation imported from the Tang dynasty capital at Chang'an (modern-day Xi'an, Shaanxi Province), the Chinese tones are rendered E53, F31, G35, H13, Ka5, Kb1. This language, Pulleyblank's Late Middle Chinese (LMC), differs from Early Middle Chinese (Qieyun, 6th c. A.D.) in having split the level tone into E/F and merged the rising G voiced obstruent initial tone syllables IIbo with departing H tone syllables. Both of these changes are also attested in EM, LMC's direct descendant.

Pulleyblank 1978:178 differs from Hashimoto as regards E tone, determining that the Japanese Kan'on tone values described by Annen, representing LMC, are E/F low level, G (high) rising, H 'drawing a little' (hence breathy). Hashimoto considers the changes of G to high 55 and H to low 31 found in the Central Mandarin dialects to be the most recent tonal innovations of Northern Chinese.

In sum, the data show (1) EM (14th century) had a GG → FG rule, whose phonetic values resembled the Pekinese tone sandhi rule (214 + 214 → 35 214). (2) G tone's pitch contours probably shifted from high rising in LMC (Tendai pronunciation) to low (rising) in EM. Both reflexes are preserved in Beijing's GG tone sandhi. In SW, NW and some Central Mandarin dialects G is typically 55 or 53. To derive this variant we assume a series of changes LMC 35 > (55 >) 53, since Yinchuan (Ningxia) NW Mandarin dialect has a sandhi rule 'changing' G53 to 35 before H14, and

Court 1980, Chan 1985, and others have observed that sandhi forms can be conservative. In this view, contrary to Hashimoto, the Central Mandarin high tone G forms are conservative, the Beijing Mandarin low tone G forms innovative.

Alternatively, following Hashimoto, to derive Central Mandarin, LMC 35 > Beijing Mandarin 35/214 > Luoyang Central Mandarin 35, i.e. G shifts from high to low for Northern Mandarin, then back to high register in Central Mandarin. In either case, after Egerod's interpretation of the GG → FG sandhi rule, the high rising variant occurring in sandhi position is assumed to have historically preceded the low tone G variant. (3) H tone's pitch contours probably shifted from low rising (Tendai, LMC, and SW, NW, and Central Mandarin dialects--more plausible if Sagart is right that H was also creaky, perhaps lax creaky, cf. Kingston et al.) to high (falling) (Beijing, EMC, etc.) Both reflexes are preserved in Tianjin's HH tone sandhi. (4) Low-to-mid tone E probably antedated Beijing Mandarin's high tone reflex for E historically, if Hashimoto's *shoomyoo* data and the similarity of modern-day Rongcheng to the ZYYY language are accepted.

According to this historical scenario, then, LMC had G35 and H14 tonal reflexes. Broadly speaking, LMC split into two groups: the Northwest-Southwest-Central Mandarin-Eastern Jin (Shanxi) type, typified by Luoyang, in which G35 rose to 55 or 53 (with the H tone reflex usually lower); and the Beijing Northern-Western Jin (Shaanxi) type, in which G lowered in certain environments, putting systemic pressure on H to cause it to rise and then break, becoming a falling tone.

This schema is compatible with Sagart 1986 (also, to repeat, Athapaskan and Burmese high and low creaky tone contrasts), assuming G and H tone to have been distinguished as tense (high) and lax (low) creaky voice at the

LMC stage. The possibility that breathy voiced phonation generated falling H tones at a prior stage such as EMC, as Egerod claims is the origin of Fuchow Min dialect's high falling H tone, and that a three way phonation contrast reduced to a two way one later in that period, is not ruled out. It is merely pushed back in time, consistent with the absence of unequivocal synchronic evidence of breathy voice H tone, as opposed to creaky voice G tone, in the modern dialects.

4. Problems for Low Tone Dissimilation (LTD)

As noted above, numerous phonologists have analyzed the Beijing TS rule as a tone dissimilating process. This interpretation has also been assumed by specialists in Chinese historical phonology. In fact, one of Mei's justifications for the proposed changes in the Korean tone values is that low tones should dissimilate universally but FF does not; hence Early Mandarin G must be low, F non-low.

As evidence of the naturalness of low tone dissimilation Mei cites Cheng 1966, who "is able to show that six tone sandhi rules in four Mandarin dialects can all be accounted for by [(7)]. ...the dialects are Peking, Shengyang [sic, = Shenyang?], Xi'an, and Chengdu, and the contours of the tones involved vary from low-rising to low-falling [and do not necessarily involve G + G] (p. 253.)... While four dialects seem a small sample, they also happen to represent most of the Mandarin dialects for which reliable information on tone sandhi is available. It seems attractive to conclude as a universal for Mandarin dialects that two low tones will undergo sandhi. Or we may prefer a weaker version: if a Mandarin dialect has two low tones L and L', then if LL undergoes sandhi, L'L' will do likewise. (1977:242) "

A considerable amount of Chinese dialect data, albeit mostly in the form of brief descriptions, has been published since Cheng published his important essay, some of which weaken his conclusions (remembering that the inventory remains incomplete). Thus as illustrated in (10), GG sandhi dissimilates low tones in (a) dialects but high tones in (b) dialects. Excluding GG → FG cases of Low Tone Dissimilation (LTD), for which only a non-tonal, glottal dissimilatory explanation provides a unified account of cognate (a) and (b) sandhi processes, other examples of LTD known to this author (including Cheng 1966's) are listed in (9).

(9) Dialects with a low tone dissimilating sandhi rule (excluding GG → FG and HH → EH)

| | TONE | E | F | G | H |
|---|------|-----|----|-----|----|
| Xuzhou, Jiangsu (Central Mandarin) | | 213 | 45 | 35 | 42 |
| E213 → 13/ __213, → 22 elsewhere ⁵ | | | | | |
| Tianjin (Northern Mandarin) | | 21 | 45 | 214 | 53 |
| E21 E21 → F45 E21 | | | | | |
| Xi'an, Shaanxi (Southwest Mandarin) | | 21 | 24 | 53 | 45 |
| E21 E21 → F24 E21 | | | | | |
| Chengdu, Sichuan (Southwest Mandarin) | | 45 | 31 | 53 | 13 |
| F31 F31 → F31 E45 | | | | | |
| H13 H13 → H13 E45 | | | | | |

5 This rule is virtually identical phonetically to the Beijing TS condition though it does not involve neutralization of tonal distinctions (213 → 13, not F45). Also like Beijing TS it may apply iteratively from left to right: pu213 → 13 tɕiɛ~213 → 13 pu213 → 22 liɛ55 'not widely separated, not exceedingly different.' In contrast, Changzhi's GG → FG rules appears to apply locally.

| | | | | |
|--------------------------------------|----|----|----|-----|
| Guilin, Guangxi (Southwest Mandarin) | 33 | 21 | 54 | 214 |
| F21 F21 -> E33 F21 (rare; lexical) | | | | |

Regarding Cheng's generalizations, an additional comment may be made. It is not immediately clear why tone dissimilation, a process described cross-linguistically for tone languages, should preferentially apply in the low register. Nevertheless, aside from the High Tone Deletion (HTD) examples in (10b) which apply in GG -> FG context (see also (14)), no other high tone dissimilating TSRs were found in the extensive corpus of Northern Chinese dialects examined in Davison 1989. Kratochvil 1987 (also Hockett 1947) observes TS to apply in heavily stressed environments. As a concomitant to prosodic phenomena such as phrase-final lengthening, an auditory-acoustic explanation for low tone dissimilation is conceivable.

On the other hand, it must be observed that neither of Cheng's proposed generalizations is exceptionless, even among Northern Mandarin and Jin-Mandarin dialects. While Tianjin Mandarin dialect has two low tones, both of which 'dissimilate' (undergo lexical tone sandhi when in close juncture), Rongcheng Shandong dialect, putatively the modern dialect closest phonologically to ZYYY in terms of its K tone distribution, has virtually the same surface tones as Tianjin: E21, F45, G214, H44 (vs. H53 in Tianjin) but does not dissimilate a parallel sequence of low E21 tones. Taiyuan Jin Mandarin dialect of Shanxi Province is another exception to even the weak condition (see below). Additional dialectal evidence presented in the tables below shows that tone dissimilation is neither obligatory for low tones (Rongcheng, Taiyuan) nor restricted to low tones (Luoyang, Zhengzhou, etc.)

In sum, Cheng's generalization needs to be weakened to allow but not require low tone dissimilation. In addition, if the (10b) and (14) HTD cases

of GG and HH sandhi are not accounted for in some other way (as, by glottal dissimilation), Cheng's generalization is faced with an otherwise unexplained set of exceptions.

5. GG -> FG Tone Sandhi in Modern Mandarin Dialects

Thirty dialects of Northern Chinese (Northern, Coastal, Central, Northwest, Southwest, and Southeast Mandarin and the Shanxi Province Jin group⁶) were surveyed and as many TS phenomena occurring in them examined. While the data to a certain extent are incomparable, having been collected under varying conditions by different individuals, a GG -> FG TS alternation is discernible in some varieties of Northern, Coastal, Central and Southeast Mandarin as well as in several Jin dialects.

(10) Citation tones of dialects having GG -> FG TSR (! dialects have GG -> GF; !!dialects have XG -> high-rising tone + G)

(a) F high-rising; G low-dipping

| | E | F | G | H |
|--|----|----|-----|----|
| Rongcheng, Shandong (Coastal Mandarin) | 21 | 45 | 214 | 44 |
| Beijing (Northern Mandarin) | 55 | 35 | 214 | 51 |

6 Following Li 1985 Mandarin dialect groups are distinguished according to distribution of LMC 'entering' (=EMK) tone words into EFGH:

Merger of K tones to Mandarin EFGH tones (BJ=Beijing)

| Mandarin | Southwest | Central | Northwest | Coastal | North | BJ | LMC initial |
|------------------|-----------|---------|-----------|---------|-------|---------|-------------|
| voiceless | F | E | H | G | E | E/F/G/H | |
| voiced sonor | F | E | H | H | H | H | |
| voiced obstruent | F | F | F | F | F | F | |

Most Southeast Mandarin and Jin dialects have syllable-final glottal stop for some or all K tone words but are similar to Mandarin in other ways, so they are grouped with Mandarin dialects proper into the superstock 'Northern Chinese'.

| | | | | |
|---|----|----|-----|----|
| Tianjin (Northern Mandarin) | 21 | 45 | 214 | 53 |
| ShenyangA, Liaoning (Northern Mandarin) | 21 | 45 | 214 | 44 |
| ShenyangB (Beijing 1964) | 33 | 35 | 213 | 41 |

(b) F low-falling; G high-falling

| | | | | |
|---|----|----|----|-------------|
| Luoyang, Henan (Central Mandarin) | 44 | 21 | 54 | 412 |
| Zhengzhou, Henan (Central Mandarin) | 13 | 42 | 55 | 31 |
| Zhenjiang, Jiangsu (Southeast Mandarin) | 42 | 35 | 31 | 55 K 5? |
| Jiyuan, Henan (Jin) | 44 | 31 | 53 | 13 K 3? |
| Huojia, Henan (Jin) | 33 | 31 | 53 | 13 K 3? |
| Taiyuan, Shanxi (Jin) | 11 | 11 | 53 | 45 K 2?/54? |
| !Chengdu, Sichuan (Southwest Mandarin) | 44 | 31 | 53 | 13 |

GG->GF in reduplicated forms

| | | | | |
|-------------------------|----|----|----|-------------|
| !!Pingyao, Shanxi (Jin) | 31 | 13 | 53 | 35 K23?/54? |
|-------------------------|----|----|----|-------------|

X(/) G53 -> 35(/) G534, Type A TS: verb+object, sub+pred cpds

| | | | | |
|--------------------------|-----|----|-----|--------------|
| !!Changzhi, Shanxi (Jin) | 213 | 24 | 534 | 44K53 4?/54? |
|--------------------------|-----|----|-----|--------------|

X(/) G534 -> 35(/) G534, verb+object compounds

X(/) G534 -> 35(/) H53, noun+noun = NP compounds

(c) G + X -> 24 + X

| | | | | |
|------------------------------------|----|----|-----|----|
| Changli, Hebei (Northern Mandarin) | 31 | 13 | 214 | 55 |
|------------------------------------|----|----|-----|----|

G + X not H -> 24 + X not H

(d) G + G -> E31 + G

| | | | | |
|-----------------------------------|----|----|----|-----|
| Lingbao, Henan (Central Mandarin) | 31 | 35 | 55 | 221 |
|-----------------------------------|----|----|----|-----|

G55 + G55 -> E31 + G55

(11) has a sample of dialects lacking TS application to GG sequences. Comparing (10) and (11) we see that surface tone values of F and G tone categories of both + and - GG TS dialects can be identical, as for Luoyang (+) and Guilin (-) (21F/54G), Zhengzhou (+) and Jinan (-) (42F/55G), or similar, for Jiyuan (+) (31F/53G) and Guiyang (-) (21F/53G), Rongcheng (+) (45F/214G) and Changli (-) (13F/214G), respectively. This suggests that surface phonetic factors are not a sufficient condition for the application of TS. Conversely, TS applies in Zhengzhou (G=55), Jiyuan, Huojia, and Taiyuan (G=53), and ShenyangB (G=54) dialects, none of which renders GG as a sequence of low tones, implying that surface phonetic factors such as low tone dissimilation are not a necessary condition for the presence of TS either.

(11) Citation tones of dialects lacking GG → FG TS ((?) indicates that no such rule appears in the description, though the author does not explicitly state that the dialect lacks TS rules.)

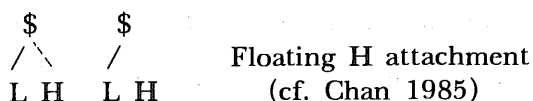
| Lexical tone categories | E | F | G | H | K |
|--|-----|-----|-----|-----|----|
| Jinan, Shandong (Northern Mandarin) | 213 | 42 | 55 | 21 | |
| ?Juxian, Shandong (Northern Mandarin) | 213 | 53 | 55 | 31 | |
| Changli, Hebei (Northern Mandarin) | 31 | 13 | 214 | 55 | |
| ?Dunhuang, Gansu (Central Mandarin) | 213 | 14 | 53 | 44 | |
| Lanzhou, Gansu (Northwest Mandarin) | 31 | 53 | 33 | 24 | |
| Guilin, Guangxi (Southwest Mandarin) | 33 | 21 | 54 | 214 | |
| Guiyang, Guizhou (Southwest Mandarin) | 55 | 21 | 53 | 24 | |
| Wuhan, Hubei (Southwest Mandarin) | 55 | 213 | 42 | 35 | |
| Hefei, Anhui (Southeast Mandarin) | 212 | 55 | 24 | 53 | 4? |
| Yangzhou, Jiangsu (Southeast Mandarin) | 31 | 34 | 42 | 55 | 4? |

Assuming the small number of dialects in (10) and (11) to be representative of Northern Chinese, it could be concluded that Coastal, Northern, Central, Southeast, and Jin dialects, sharing a GG → FG type TS isogloss, also may have shared a period of common development separate from Northwest or Southwest Mandarin, which lack a phonological, GG dissimilating tone sandhi rule. Conceivably absence of the rule in NW and SW Mandarin reflects contact with more purely pitch-based tone languages such as Cantonese. Notice that geographically the NW and SW areas are bisected by Central-Northern, indicating NW/SW are the older forms, as described above.

Referring back to (10), to explain the occurrence of GG → FG in dialects having different surface tone contours for G and F, GG → FG is claimed to have happened at a stage when pitch contours were redundant rather than distinctive features of Chinese tone, and the lexical categories were distinguished instead by phonation type differences. If this simplifying assumption is not made, distinct tonal sandhi rules of the sort given in (12) are needed to describe the GG → FG process in each of several related dialects:

- (12) Autosegmental rules for GG → FG tone sandhi in Mandarin dialects
(H=high toneme, L=low toneme, \$=syllable, floating tones in bold)

(a) Beijing E55 H F35 LH G214 L H H51 HL



(b) Zhenjiang, Jiangsu (Southeast Mandarin)

E42 HL F35 LH G31 L H H55 H K5?



(c) Tianjin⁷ (Northern Mandarin)

E11 L F45 H G214 LH H53 HL



(d) Jiyuan, Henan (Jin)

E44 H F31(2) L G53 HL H13 LH K3?



(e) Huojia, Henan (Jin)

E33 H F31 L G53 HL H13 LH K3?



7 Tianjin G tone in close juncture with a following syllable having other than G tone retains a rising contour in most environments, rather than being simply low level as in Beijing. This difference between the dialects is clearly audible before toneless particles: niG lengG ma0? 'you cold Q' 'Are you cold?' Beijing: 35 + 11 + 5; Tianjin 45 + 14 + 1. Thus

| | | | | | | | |
|---------|----------------------------|----|---|---------|------------|----|---------------------|
| Beijing | \$ | \$ | | Tianjin | \$ | \$ | |
| | / | ↘ | / | | / | ↘ | : |
| | L | H | | | L | H | L |
| | lengG ma0? [Are you] cold? | | | | lengG ma0? | | |
| | | | | | | | Default L insertion |

(f) Luoyang, Henan (Central)

E44 H F21 L G53 HL H412 LH

$\begin{array}{cc} \$ & \$ \\ \swarrow \searrow & / \searrow \\ H L & H L \end{array}$

H detachment:
contour
simplification

(g) Zhengzhou, Henan (Central)

E13 LH F42 HL H55 H L H31 L

$\begin{array}{cc} \$ & \$ \\ / \searrow & / \\ H L & H L \end{array}$

Floating L
Attachment
(cf. Luoyang)

(h) Taiyuan, Shanxi (Jin)

E/F11 L G53 HL H45 LH Ka2? L? Kb54? HL?

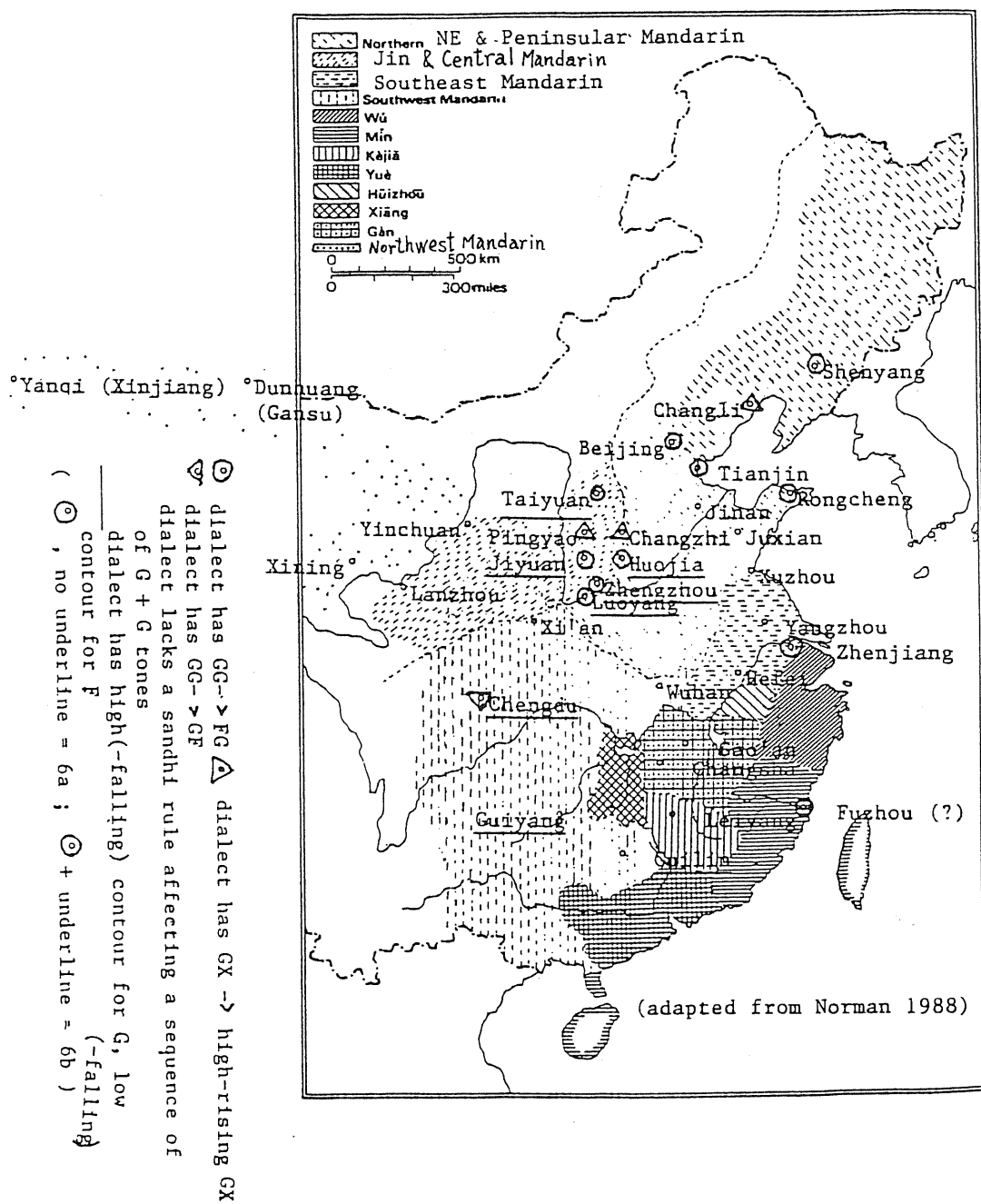
$\begin{array}{cc} \$ & \$ \\ \swarrow \searrow & / \searrow \\ H L & H L \end{array}$

H detachment:
contour
simplification

Taking into account the historical and comparative evidence of the preceding sections, it is apparent that the isogloss defining the set of dialects having a GG->FG rule straddles the East-West divide of Northern Chinese dialects having respectively low G and high falling H vs. high G and low rising H tonal reflexes. See map, (13). It is simplest to assume therefore that the sandhi rule operated in the parent proto-Early Mandarin dialect. Furthermore, since the rule persisted in the phonologies of both east (Northern Mandarin) and west (Central Mandarin) dialect subgroups after later evolution of pitch contours, it is reasonable to hypothesize that the GG->FG sandhi rule operated on a non-pitch-based laryngeal feature such as the dissimilation of a sequence of creaky voiced syllables.

(13) Distribution of Northern Chinese dialects having GG -> FG TS by dialect sub-group and basic tone contour

MAP VII. Distribution of GG-FG and related tone sandhi



6. HH -> EH Tone Sandhi in Northern Chinese Dialects

Mei does not comment on the observation from the two historical sources on *qu* rhyming practice that a sequence of HH tones was 'awkward'. As noted above, musicality rather than the presence of tone sandhi may have been at issue. Nevertheless, in view of Egerod's remarks on HH sequences in Fuchow dialect cited above, it is worth noting such modern evidence as exists for HH dissimilation.

Beijing Mandarin appears not to have a HH rule. Chao 1968:28 says HH falling + falling -> high falling + falling (51 51 -> 53 51), with the qualification that "since stress will enlarge the range and length of a tone and since a two-syllable compound or phrase will have a slightly greater stress on the second syllable, unless it is in the neutral tone, a succession of two [H] tones is more accurately represented as a small graph followed by a bigger one than as represented above. Moreover, this is true of any combinations of tones."

Leaving aside this doubtful case, Tianjin (Northern Mandarin), Zhengzhou (Central Mandarin) and Pingyao Jin dialects each have a HH -> EH tone sandhi rule for which the surface tonal reflexes vary across dialects. See (14).

(14) Citation tones of Northern Chinese dialects having HH -> EH TSR

| Lexical tone categories | E | F | G | H |
|------------------------------|----|----|-----|-------|
| Tianjin (Northern Mandarin) | 21 | 45 | 214 | 53 |
| Zhengzhou (Central Mandarin) | 13 | 42 | 55 | 31(2) |
| Pingyao (Jin) | 31 | 13 | 53 | 35 |

Thus far, the antiquity of the tone sandhi rules has been suggested by the historical sources. The data in (14) also illustrate, though with fewer examples, what is amply demonstrated regarding the GG → FG rule above, namely that in some cases tonal sandhi dissimilation appears to have affected etymological tone categories without regard to the surface tone contours.

7. Proposed Representation: Separate Pitch and Voice Quality Tiers

To conclude, these data support a formulation of the historical Early Mandarin tone sandhi rule(s) as:

(15) Northern Chinese tone sandhi rule (\$=syllable)

Tier

| | | |
|-------------------------|----------------|---|
| Pitch (allo- phonic) | H | H ## (prosodic boundary) |
| | | |
| | \$ | \$ |
| | ‡ | |
| Voice qual. | [+tense creak] | [+tense creak] Glottal dissimilation (GG TS) |
| | | |
| Pitch (allo- phonic) | L | L ## (prosodic boundary) |
| | | |
| | \$ | \$ |
| | ‡ | |
| Voice qual. | [+lax creak] | [+lax creak] Glottal dissimilation (HH TS) |

The ancestor of the Northern and Central Mandarin dialects (tone values as for Ning's ZYYY) thus neutralizes G and F tones (also H and E, for the relevant dialects), when G (and H) are in sandhi position. Later, phrase-finally G's creak and lowering occurred in Pekinese, while H rose and broke for some words in the same environment, as in Tianjin /naHar/ 'there'. In phrase-internal position creaky phonation may have caused the

lowering of G, giving the desired allophones of G in, e.g., Tianjin Mandarin:

(16) Tianjin G -> F45/ __G; -> 412/ __##; -> 14 elsewhere.

Beijing's further development of low level tone in the elsewhere environment is characterized in this formulation as L H.

(Accepted for publication 19 November 1992)

REFERENCES

FY = Fangyan 'Dialect', Beijing: Chinese Acad. Social Sciences.

Chao Yuenren.

1968. A Grammar of Spoken Chinese. Berkeley.

Chan, Marjorie K. M.

1985. Fuzhou Phonology: A Non-Linear Analysis of Tone and Stress.
University of Washington Ph.D. dissertation.

Chen, Matthew Y., Fu Tan, Zhang Zhengsheng, & Tony Hung.

1987. A symposium on Tianjin tone sandhi. J. of Chin. Ling. 15.2:203-308.

Chen Shunzheng.

1974. Rongcheng Fangyan Yinxi 'Rongcheng Dialect Phonology.'
Sanrenhang Chubanshe, Taipei.

Cheng, Chin-chuan.

1966. Guanhua fangyan de shengdiao zhengxing gen liandiao bianhua
'Tone features and tone sandhi in the Mandarin dialects.' Dalu
Zazhi 33:102-8.

1973. A Synchronic Phonology of Mandarin Chinese. The Hague:
Mouton.

Davison, Deborah S.

1987. Tianjin tone sandhi phonetics. Paper circulated at the 20th
International Conference on Sino-Tibetan Languages and
Linguistics, Vancouver.

1988. Tone sandhi effects and the dissimilation of Phonation types,
revisited. Paper circulated at the 21st International Conference on
Sino-Tibetan Languages and Linguistics, Lund.

1989. Lexical Prosodies of Mandarin. Berkeley: University of California
Ph.D. dissertation.

1990. Creaky tones in Tianjin: phonetic or phonological? Paper
presented at the Acoustical Society of America meeting, San Diego.

Egerod, Søren.

1971. Phonation types in Chinese and South East Asian languages, in
Acta Linguistica Hafniensia XIII, 2:159-171.

Gao Baotai.

1980. Lanzhou yinxi lyueshuo 'A sketch of Lanzhou [Gansu] phonology.'
FY 224-231.

Haudricourt, A. G.

1954. Comment reconstruire le chinois archaïque. *Word* 10:351-369.

Hebeisheng Changlixian Xianzhi Bianji Weiyuanhui.

1969. Changli Fangyanzhi 'Changli dialect.' *Kexue Chubanshe*.

Hock, Hans Heinrich.

1986. Principles of Historical Linguistics. Berlin, Mouton de Gruyter.

He Wei.

1979. Huojia fangyande liandubiandiao 'Tone sandhi in the Huojia
[Henan] dialect.' FY 122-136.

1981. Jiyuan fangyan jilue 'A sketch of the Jiyuan [Henan] dialect.' FY
5-26.

1984a. Luoyang fangyan jilue 'A sketch of the Luoyang [Henan] dialect.'
FY 278-299.

Hockett, Charles F.

1947. Peiping phonology. *Journal of the American Oriental Society* 67:
253-267.

Hou Jingyi.

1980. Pingyao fangyande liandubiandiao 'Tone sandhi in the Pingyao [Shanxi] dialect.' FY 1-14; 1984 7-14; 85-99.
1983. Changzhi fangyan jilue 'A sketch of the Changzhi [Shanxi] dialect.' FY 260-274.

Hyman, Larry M.

1975. Review of A Synchronic Phonology of Mandarin Chinese, by Chinchuan Cheng. Journal of Chin. Ling. 3/1:88-98.

Kaisse, Ellen M.

1985. Connected Speech. Orlando: Academic Press.

Li Rong.

- 1985a. Guanhua fangyande fenqu 'The grouping of the Mandarin dialects.' FY 2-5.

Kratochvil, Paul.

1987. The case of the third tone. In Wang Li Memorial Volume. Hongkong: Joint Publishing Co.

Li Shen.

1984. Xuzhou fangyan cihui xugao 'Supplement to "a glossary of the Xuzhou [Jiangsu] dialect".' FY 227-239.

Li Xingjian & Liu Sixun.

1985. Tianjin fangyande liandu biandiao 'Tone sandhi in the Tianjin dialect.' Zhongguo Yuwen 184:76-80.

Liu Lili.

1988. Yanqi yinxi jilue 'A sketch of the Yanqi [Xinjiang] dialect.' FY 31-41.

Matisoff, James A.

1970. Glottal dissimilation and the Lahu high-rising tone: a tonogenetic case-study. *Journal of the American Oriental Society* 90:13-44.

McCawley, James D.

1978. What is a tone language? In Victoria Fromkin, ed., *Tone: A Linguistic Survey*. Academic Press.

Mei Tsu-lin.

1970. Tone and prosody in Middle Chinese and the origin of the rising tone. *Harvard Journal Asiatic Studies* 86-110.
1977. Tones and tone sandhi in 16th century Mandarin. *Journal of Chinese Linguistics* 5.2:237-260.

Ning, Jifu.

1986. Shisi Shiji Dadu Hua Diaozhi ji Zhou Deqing "Ru Pai San Sheng" Zhi Shiwu 'Tonal values of the Dadu dialect of the 14th C. and the mistakes in Zhou Deqing's classification of former rusheng [K] words.' Paper presented at the 19th International Conference on Sino-Tibetan Languages and Linguistics, Eugene.

Norman, Jerry.

1988. *Chinese*. Cambridge University Press.

Pulleyblank, Edwin G.

1973. Some further evidence regarding Old Chinese -s and its disappearance. *BSOAS* 36:368-373.
1978. The nature of the middle Chinese tones and their development to Early Mandarin. *J. of Chin. Ling.* 6.2:173-203.

Rose, Phil.

1982. Acoustic characteristics of the Shanghai-Zhenhai syllable types in D. Bradley, ed., *PLPSEAL* 8, Series A 62, 1-53.

Sagart, Laurent.

1985. Some further evidence on the glottalization of the Chinese departing tone. XVIIIth ICSTLL, Bangkok.

Shen, Xiao-nan Susan.

1990. The Prosody of Mandarin Chinese. Berkeley: University of California Press.

Shen Duanzheng.

1981. Taiyuan fangyan cihui 'A glossary of the Taiyuan [Shanxi] dialect.'
FY 295-316.

Woo, Nancy.

1969. Prosody and phonology. Ph.D. Thesis. Massachusetts Institute of Technology.

Yang Huandian.

- Guilin fangyan cihui 'A glossary of the Guilin [Guangxi] dialect.'
FY 146-155.

Yip, Moira Jean W.

1980. The tonal phonology of Chinese. Ph.D. Thesis. Massachusetts Institute of Technology.
1982. Against a segmental analysis of Zhaoh and Thai: a laryngeal tier proposal. *Linguistic Analysis* 9:79-94.
1988. The obligatory contour principle and phonological rules: a loss of identity. *Linguistic Inq.* 19:65-100.

Zhai Shiyu.

1987. Shaanxisheng nanbudiqu fangyande guishu 'The affiliation of certain dialects in Southern Shanxi.' FY 29-34.

Zhang Chengcai.

1980. Xining fangyan jilue 'A sketch of the Xining dialect [Qinghai].'

FY 282-302.

Zhang Shengyu.

1984. Yinchuan fangyande shengdiao 'Tones in the Yinchuan [Ningxia] dialect.' FY 19-26.

1985. Dunhuang Yinxi Jilue 'Outline of Dunhuang [Gansu] phonology.' FY 134-139.

1987. Yinchuan fangyan sanzizude liandiao 'Tone sandhi of trisyllabic words in the Yinchuan dialect.' FY 124-132.

Zhou Fagao.

1948. Shi ping ze 'Explaining the level/oblique tone rhyming convention.' BIHP 13:153-162.

Zhou Qingsheng.

1987. Zhengzhou fangyande shengyundiao 'The phonology of Zhengzhou [Henan] dialect.' FY 190-199.

Zhu Jiansong & Liu Xingce.

1981. Wuhan fangyan cihui 'A glossary of the Wuhan [Hubei] dialect.' FY 73-80.

A Beat-counting Theory of Mandarin Foot Phrasing

Yuchau E. Hsiao

National Chengchi University

Lieberman & Prince (1977), Kiparsky (1979), Hayes (1981), and McCarthy & Prince (1986), among others, have characterized the structure of the foot as a syllable-counting (or mora-counting) device, which conception is introduced to Chinese dialects by Yip (1980), Wright (1983), Chen (1984), Chan (1985), Shih (1986, 1990) and others. This paper proposes that the foot in Mandarin Chinese is built upon the metrical beats assigned to syllables. It is this notion that produces the essence of the Foot Phrasing Principles that I will propose. I shall posit (1), (2) and (3) together as the current working hypothesis:

Beat Assignment

- (1)(a) Lexical Beat-Assignment (LB): Every lexical syllable is assigned a metrical beat.
- (b) Functor Beat-Assignment (FB): A functor syllable is assigned a beat in normal or slow speech, behaving like a lexical syllable, and is left-adjoined to the nearest beat in fast speech.
- (c) FB takes place after lexical syllables have been made into ICFs or ABFs.

Foot Formation Revisited

- (2)(a) Immediate Constituent Foot (ICF): Any adjacent beats which are assigned to ICs form an ICF.
- (b) Adjacent Beat Foot (ABF): Any two adjacent beats which are not assigned to ICs are paired into an ABF.
- (c) Jumbo Foot (JF): Any unpaired single beat is recruited by a neighboring foot to form a Jumbo Foot if the beat c-commands the adjacent beat contained in the foot.
- (d) Mini-foot (MF): The leftmost single beat constitutes a Mini-foot if it is followed by an intonational phrase boundary %.

Application Criteria

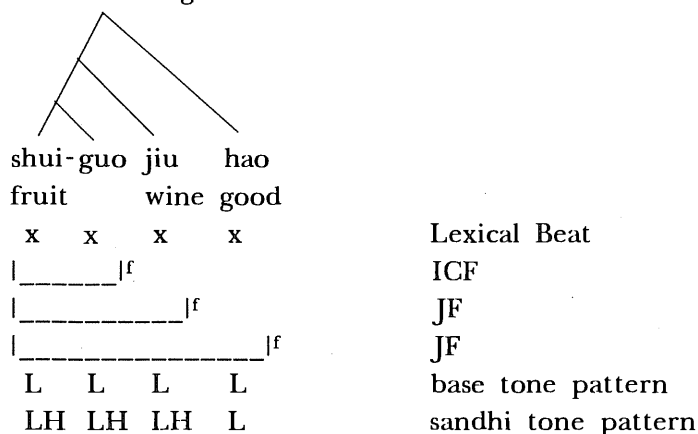
- (3)(a) When all conditions are met, the ICF prevails over other footing processes.
- (b) Scanning starts from left to right and stops as soon as the environmental requirements for either MF, ABF or JF are met, and the principle triggered applies to the whole line.
- (c) Footing must not cross any intonational phrase boundary.

The principles in (1-3) serve to portray the foot from two perspectives, i.e., as a rule domain and a timing device. Those in (2) are intended to retain a certain amount of the spirit of Chen's (1984) and Shih's (1986) rules, hereafter C&S; however, I will show in the following that (1-3) differ from C&S both theoretically and operationally, aside from the fact that the foot is now constituted by metrical beats.

The Foot as a Rule Domain

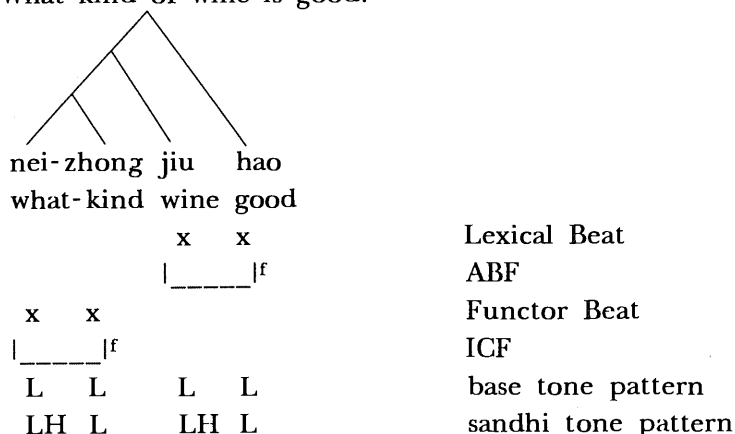
Crucial to the phrasing of the foot is a discrepancy between **lexical syllables** and **functor syllables**. The former refer to major grammatical categories such as nouns, verbs and adjectives, which have rich semantic content; while the latter are those of primarily grammatical import, namely minor categories, including prepositions, pronouns, co-verbs, aspect markers and the like.¹ I would like to demonstrate first the way in which **beat scanning** is the secret of successfully phrasing the foot as a tone sandhi domain. It will become clear that several unnecessary syntactic or semantic conditions can be done away with and replaced by the simple notion of a 'minimum scanning window' in terms of beats.

(4)(a) 'Fruit wine is good.'



1 The term 'functors' in this paper refers to the close classes, including conjunctions, prepositions, pronouns and the like.

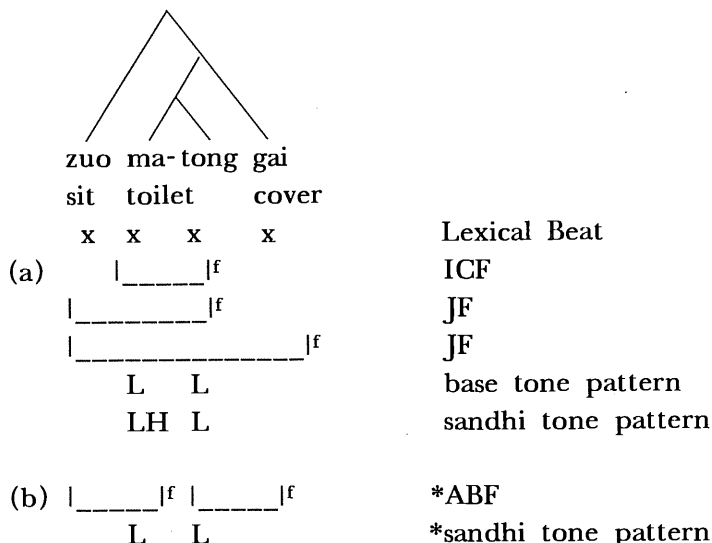
(b) 'What kind of wine is good?'



Note that the two examples in (4) have exactly the same syntactic branching structure, and yet exhibit completely different rhythmic properties. What distinguishes (4)(b) from (4)(a) is that the first two beats in the (b)-structure are assigned to functor syllables, namely *nei* and *zhong*, and thus this Functor Beat-Assignment does not happen until later. *Jiu* and *hao* have priority over being assigned beats, since they are lexical syllables. The scanning in (4)(b) therefore starts at the third beat and stops at the fourth beat, where the ABF is applicable. The involvement of the functor syllables inevitably breaks this line into two feet: the last two beats form a foot, and the first two subsequently form another. As a consequence of the beat scanning, Mandarin tone sandhi (L --> LH/ __L) applies within each *two-beat* foot in (4)(b), but to the whole *four-beat* Jumbo Foot in (4)(a). At all times, it is beats rather than syllables which are scanned.

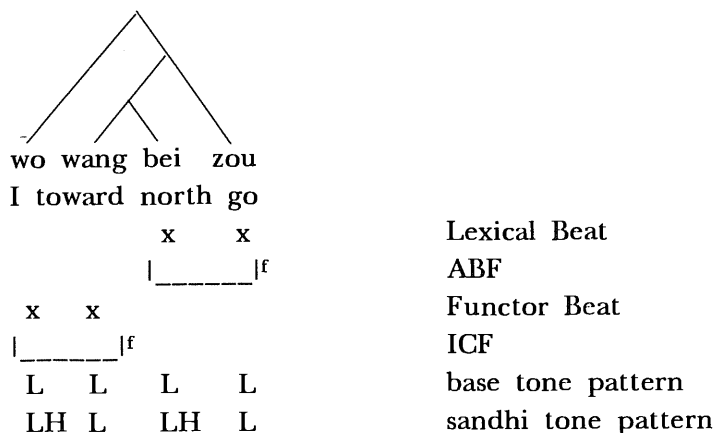
It has been observed ever since C&S that ICs (immediate constituents) tend to have precedence when forming a foot. Another way of viewing this is that ICs are inseparable in foot construction, with the result that a low tone like that associated with *ma* in (5) can be expected to surface as a low-high contour always:

(5) 'sit on the toilet cover'

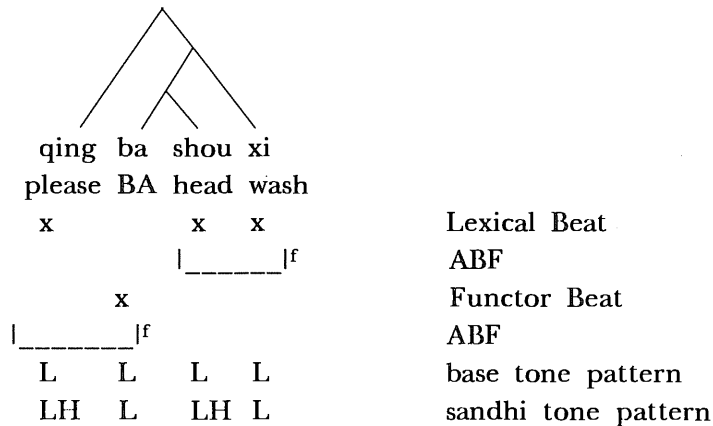


In (5)(b), the two low tones are grouped into separate feet, violating the ICF predominance. As predicted, the sandhi tone pattern of (5)(b), where both *ma-* and *-tong* carry their original low tones, is an ill-formed reading. The predominant nature of the ICF, however, is frequently contradicted when functors are involved, and yet the derived readings are well-formed. Consider (6):

(6)(a) 'I went toward the North.'

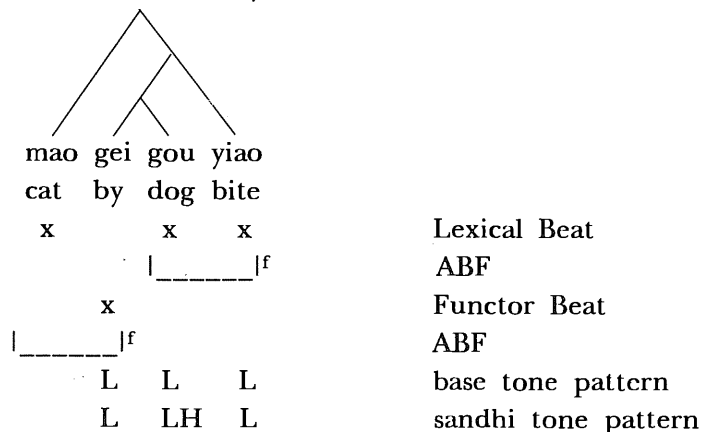


(b) 'Please have (your) hands washed.'

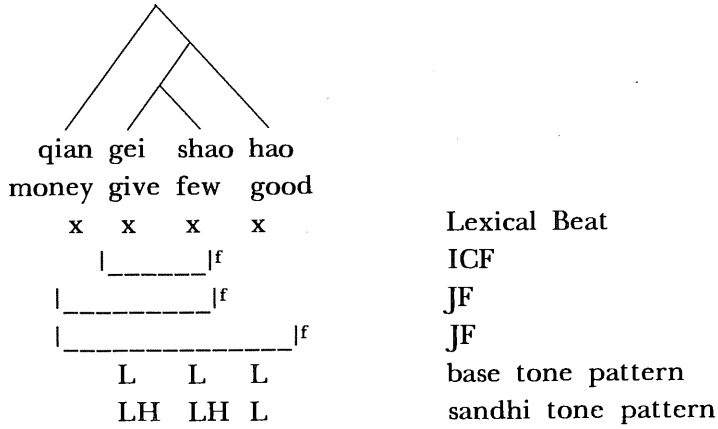


In both (6)(a) and (6)(b), the nonperipheral syllables are ICs, namely the potential elements to build an ICF if assigned beats. The environmental requirements for the ICF, however, are never really met in that one member in each pair of the ICs happens to be a functor. As dictated by the Functor Beat-Assignment, the functors, *wo*, *wang* and *ba*, are not assigned beats until *bei* and *zou*, and *shou* and *xi*, are made into ABFs. On the basis of beat scanning, there are in reality no unfooted adjacent beats which are assigned to ICs. The low tones associated with the ICs eventually must belong to different tonal domains (ABFs), making possible the derivations of the sandhi tone patterns desired. Notice the tonal behavior of *gei* in (7):

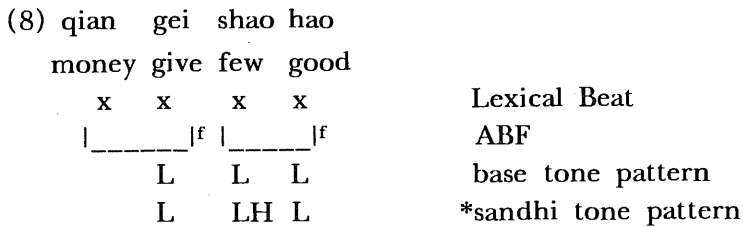
(7)(a) 'The cat is bitten by the dog.'



(b) 'It's better to give little money.'

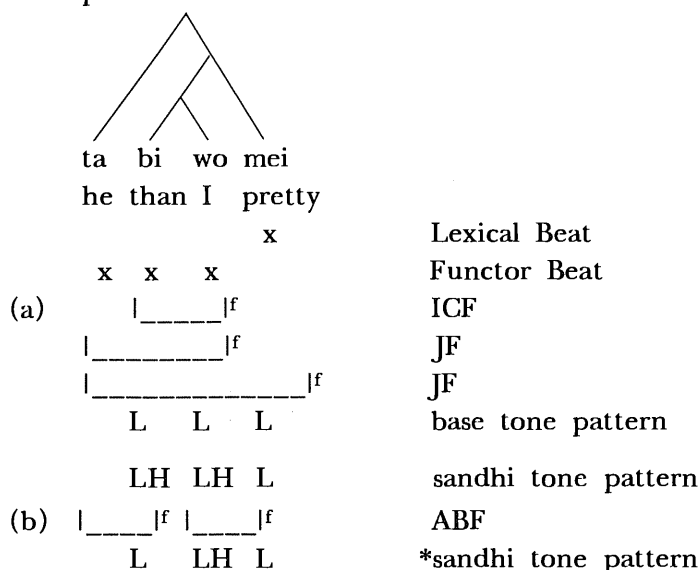


(7)(a) shows no adjacent beats assigned to ICs, since *gei* is a preposition of some kind, namely a functor category, which is not assigned the beat in the beginning. In (7)(b), conversely, *gei* is a verb, a lexical category, which is subject to the Lexical Beat-Assignment, and therefore the ICF is triggered. (8) shows that an unacceptable tone pattern would be sanctioned otherwise:



A similar contrast can be found between (9)(a) and (9)(b), in which there is only one lexical syllable, namely *mei*:

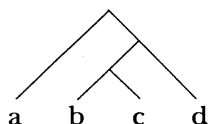
(9)(a) 'She is prettier than me.'



When the Functor Beat-Assignment applies to (9), there are four adjacent beats (including the one assigned to *mei*) available for scanning. The ICF thus must prevail over other footing processes, followed by the JF, which eventually makes the entire line into a single tonal domain (a four-beat Jumbo Foot); consequently, (9)(a), but not (9)(b), is sanctioned, and a sandhi tone pattern with the 'LH LH L' sequence is derived.

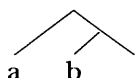
These subsequent Jumbo Footings are conducted based on the scanning of a minimum-sized window. One might suggest that the footing of *qian* in (7)(b) taking place before *hao*, and *ta* in (9)(a) before *mei*, is 'counter-intuitive' since it creates metrical tension due to the mismatch between the Jumbo Foot structures and the syntactic tree. To answer this argument, let us focus on the syntactic structure yielding (7) and (9):

(10)

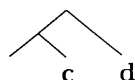


Theoretically speaking, what is pertinent to Jumbo Foot formation is the syntactic relation between *a* and *b*, and between *c* and *d*. In other words, it is structures like those in (11) that matter:²

(11)(a)



(b)



The number of syntactic nodes intervening between *a* and *b*, or between *c* and *d*, is irrelevant. That is to say, the *a-b* relation and the *c-d* relation in the case of (10) are considered equivalent. When beat scanning operates from left to right, *a* is footed before *d* simply at random, but no predominance of any sort is assumed. It should not be a surprise that the operation of phonological rules may start from a designated end. The left-to-right beat scanning ensures that foot formation and tone sandhi apply to a minimum number of beats.

Given this beat-counting theory, we are able to avoid Hung's (1987) dilemma in stretching the 'co-verb' property of *wang* and *gei* as an X^{head} , and derive the correct footing output left behind by Shih's (1986, 1990) rules. The idea that the Functor Beat-Assignment occurs after lexical syllables are assigned beats and made into ICFs and ABFs is not to be characterized in terms of rule ordering, but Our analysis recognizes the greater metrical strength of lexical syllables. There is some cross-linguistic evidence for this

2 This is compatible with Kaisse's (1985: 175) branch condition, which is stated as follows: Tone sandhi may apply between two words *a* and *b* if *a* is the left branch of a constituent that contains *b*, or if *b* is the right branch of the constituent that contains *a*; in other words, tone sandhi applies if the sandhi pair is on an edge of the constituent that contains it.

intuitively clear distinction. Analyzing the linguistic rhythm of English, Liberman & Prince (1977) and Hayes (1983) claim that content words, but not functors, have priority in grid-marking. Edmond (1985) treats functors as some kind of 'feature-complexes', which are ignored when stress-assignment takes place. Golston (1990) furthers the speculation and argues that functor syllables are inserted after stress-assignment. In addition, Chen (1991) discovers that the construction of the intonational phrase in Wunzhou Chinese is blind to functors at early stages. All of these findings are compatible with our analysis in the sense that functor syllables do not participate in early metrical processes.

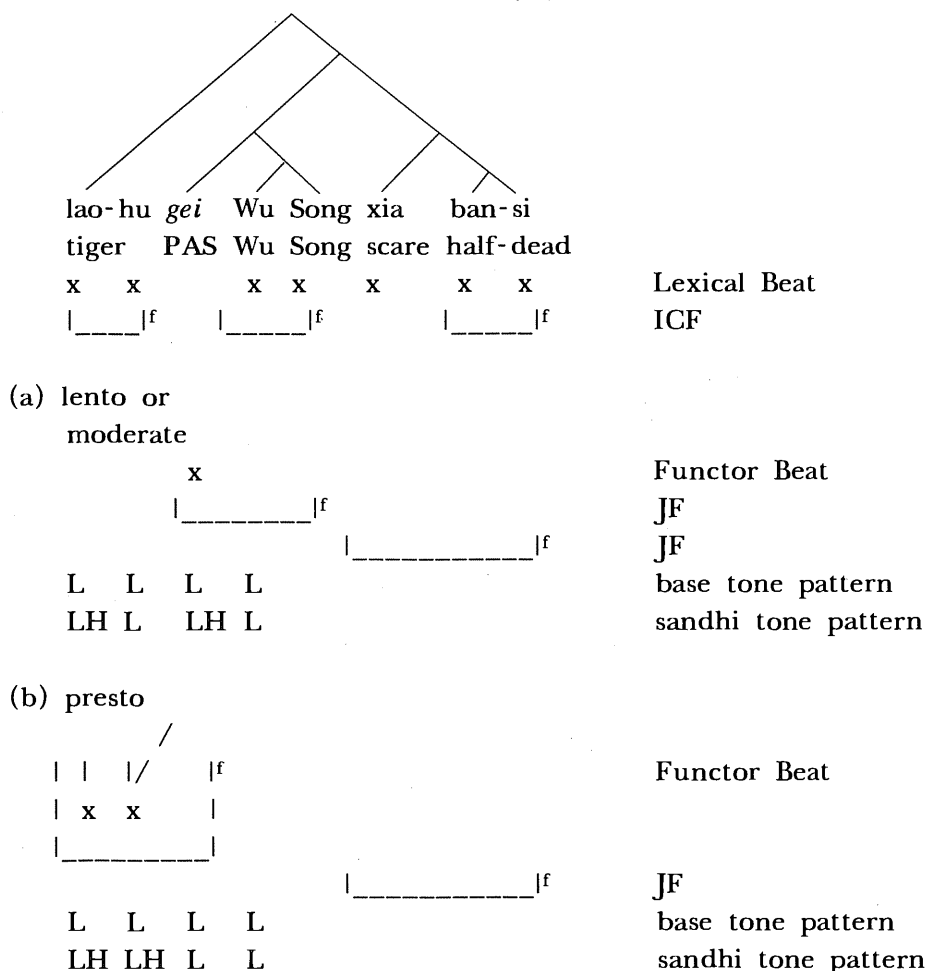
The fact that lexical syllables are phonologically more prominent, i.e., have priority when being assigned beats, is also in congruity with the findings of cognitive linguistics, and R. Langacker has pointed out to me that functors, in terms of Cognitive Grammar, designate only 'schematic' relations elaborated by those that were originally predicated by content words, which possess the major semantic content. Bates, Frederici & Wulfeck (1987), Waterson (1987) and Bates & Wulfeck (1989), among others, also argue that children associate themselves more easily with content words than function words, which are likely to be acquired later.

The Foot as a Timing Device

The functor syllables, furthermore, are more vividly sounded in time with the beats in fast speech. In (12)(a), *gei* is assigned a beat by the Functor Beat and is recruited by the existing ICF to form a Jumbo Foot, since it c-commands *Wu* and *Song*. *Gei* therefore undergoes tone sandhi and surfaces with a low-high contour. In (12)(b), per contra, *gei* is not assigned

a beat, but rather adjoined to the second beat and shares half of it in terms of relative duration. That is to say, *gei* belongs to the first ICF, which serves as the tonal domain where *gei* carries the rightmost low tone and thus retains this base tone.

(12) 'The tiger was scared half to death by Mr. Wu Song.'



The main distinction between (12)(a) and (12)(b) flows from the fact that the latter is rendered with a *presto* tempo while the former has a slower tempo. The way that a tonal domain is phrased therefore correlates to the tempos in speech, namely the timing nature of the foot.

Foot Phrasing and Prosodic Constraints

Whereas the foot is constructed by metrical beats, it is constrained by the prosodic phrasing. To be precise, the footing process in Mandarin operates within an intonational phrase. The assumption here, of course, refers to the fact that metrical categories (such as the foot) and prosodic categories (such as IP and the like) belong to separate hierarchies (cf. Chen, 1986; Selkirk, 1986; Zec, 1988; Inkelas, 1989; Hsiao, 1990a, 1991a). The phrasing principles I would like to propose here are given in (13):

(13)(a) Intonational Phrase (IP):

$[...x...]^{SU}$, where x = phonological phrase

(b) Phonological Phrase (Ph):

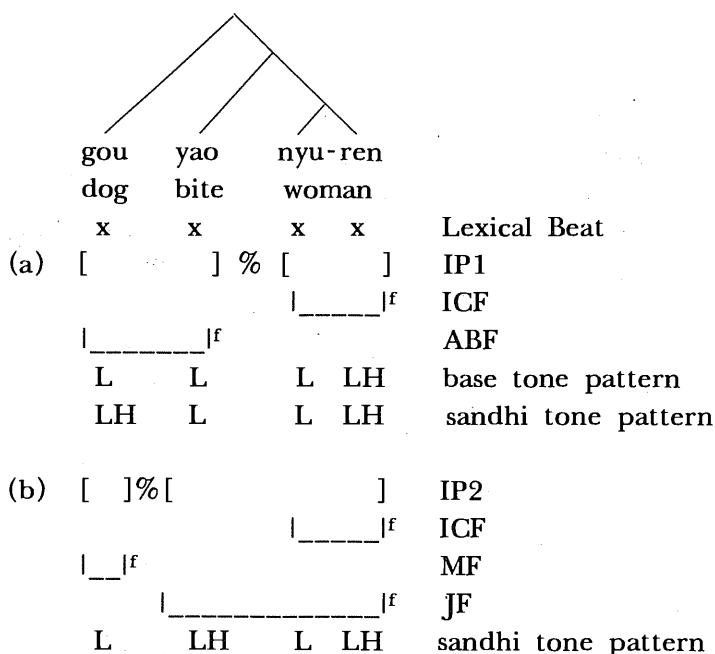
$\{\text{left}, X^{\max(+b)}\}$, where $(+b)$ = branching

(13) basically dictates that IPs are sense units (SUs) phrased by grouping together Phs, which are marked at the left edge of an X^{\max} only if the X^{\max} is branching. When an IP consists of two or more syllables, they must be subject to the Sense Unit Condition (SUC), which is presented in (14):

(14) Sense Unit Condition (SUC): Two constituents C^i , C^j form a sense unit if (a) or (b) is true of the semantic interpretation of the sentence: (a) C^i modifies C^j (a head); (b) C^i is an argument of C^j (a head). (Selkirk, 1984: 291)

Observe the phrasing processes in (15), where the Ph boundaries (#) fall before the VP and the second NP, but not the first NP in that *gou* is non-branching. As a consequence, the line breaks into three Phs, whereby three alternative intonational phrasings (i.e., IP1, IP2 and IP3) can be formed. I indicate the '%' symbol only between IPs in order to eliminate unnecessary distractions.

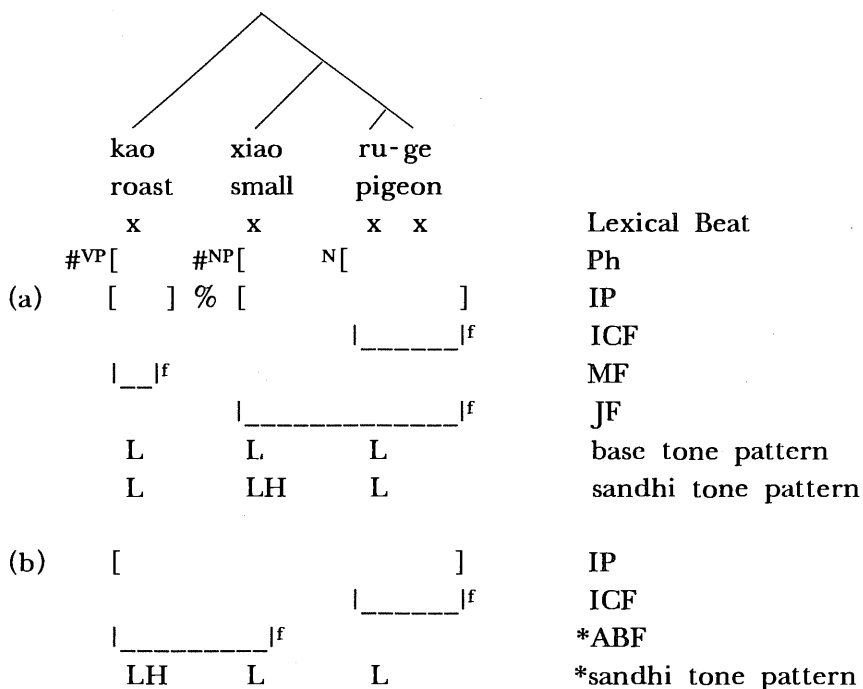
(15) 'Dogs bite women.'



(15) shows how a different intonational phrasing may correspond to an alternative rhythm, namely footing. The ICF prevails over other footing as expected. In cases like IP1, the first two beats constitute the minimal size of the local window when scanning starts from left to right, and therefore form an ABF (Adjacent Beat Foot). Note that footing may not cross any IP boundary, and thus IP2 allows *yao* to join with the existing ICF to form a three-beat Jumbo Foot, and derive a Mini-Foot out of the leftmost beat, which is assigned to *gou* and followed by the IP boundary (%).

Mini-Foot formation is obligatory in cases like (16)(a), though a problem arises in (16)(b), where all four of the syllables constitute a single IP, and the ABF, though not crossing any IP boundary, is excluded. A very interesting phenomenon is that those Phs which are rhythmically indivisible will branch uniformly in one direction, right-branching in the case of (16), and a principle constraining foot formation can therefore be drawn as in (17):

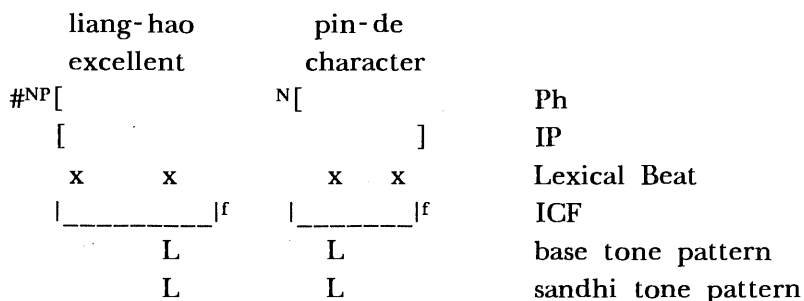
(16) 'to roast small pigeons'



(17) Phonological Phrase Integrity (PPI): A phonological phrase is indivisible in terms of foot formation iff it reveals a uniformly syntactic branching tree.

This principle in fact suggests that within the domain of the phonological phrase (Ph), the metrical structure and the syntactic structure match one another to the maximal extent. It rules out (16b), and correctly sanctions (18):

(18) 'excellent moral character'



It goes without saying that a Ph like (4)(a), where the syntactic tree is uniformly left-branching, also must construct a single foot, and a rhythm like (19) is eliminated:

| | | |
|------|------------------|--------------|
| (19) | shui-guo jiu hao | |
| | fruit wine good | |
| | #NP[AP[| Ph |
| | [] | IP |
| | x x x x | Lexical Beat |
| | _____ ^f | ICF |
| | _____ ^f | *ABF |

Notice that *hao* in (19) is a nonbranching AP such that the Ph boundary is not marked before it, but rather all of the four syllables form a single Ph. The principle of Ph Integrity thus eliminates (19). Complexity increases, however, when functors participate in the footing and tonal processes. Consider again (4)(b) as reanalyzed in (20):

| | | |
|------|---------------------|---------------------|
| (20) | nei-zhong jiu hao | |
| | what-kind wine good | |
| | #NP[AP[| Ph |
| | [] | IP |
| | x x | Lexical Beat |
| | _____ ^f | ABF |
| | x x | Functor Beat |
| | _____ ^f | ICF |
| | L L L L | base tone pattern |
| | LH L LH L | sandhi tone pattern |

The quadrisyllabic sequence in (20) constitutes a single Ph which reveals a uniformly left-branching syntactic tree, but surprisingly it breaks into two feet, in violation of the constraint of Ph Integrity. I have argued that functors exhibit disparate properties of beat assignment and foot formation. It should not be unexpected if the functors also behave differently toward prosodic constraints. A possible explanation for tone sandhi in (20) could be

that the functors *nei* and *zhong* cliticize to the left in the process of phonological phrasing, as shown by (21):

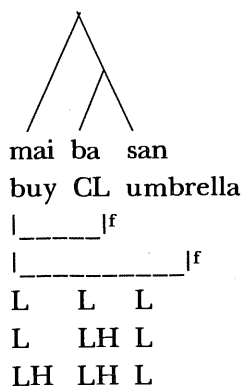
| | | | | |
|------|---------------------|---------------------|---------|---------------------|
| (21) | nei-zhong | jiu | hao | |
| | what-kind | wine | good | |
| | #NP[| | AP[| Ph |
| | nei-zhong | #[| jiu hao | cliticization |
| | [| | | IP |
| | | x | x | Lexical Beat |
| | <-----> | | | window |
| | | _____ ^f | | ABF |
| | x | x | | Functor Beat |
| | _____ ^f | | | ICF |
| | L | L | L | base tone pattern |
| | LH | L | LH | sandhi tone pattern |

When cliticization occurs, *nei-zhong* and *jiu hao* end up in separate Phs such that they are no longer subject to the Ph Integrity. Foot formation then applies to the intonational phrase (IP), where *jiu* and *hao* are assigned beats first, forming an ABF as the beats are scanned. Functor Beat-Assignment follows, and an ICF is derived out of *nei-zhong*. As a result, the 'LH L LH L' surface pattern is possible.

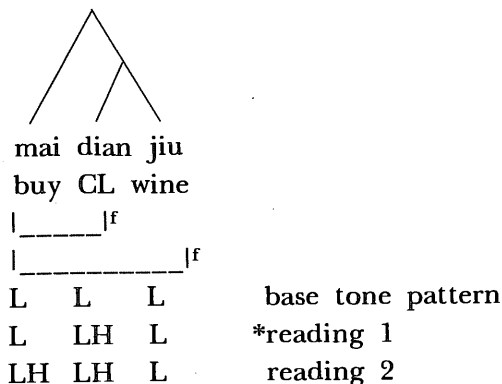
Cliticization was also observed by Poteet (1985) and Shih (1986) with a particular effort to account for the tonal behavior of classifiers. According to them, classifier cliticization corresponds to foot restructuring such as in (22), where the pairs of ICs, *ba* and *san*, and *dian* and *jiu*, are prevented from forming a foot.³ Cyclic application of tone sandhi derives the surface pattern of 'LH LH L', excluding that of 'L LH L':

3 Shih (1990) suggests that prepositions are subject to cliticization as well. Her idea of preposition, however, is quite controversial; for example, she treats the causative marker *shi* 'let; have' as belonging to the category of preposition, which classification is rather unlikely.

(22)(a) 'buy an umbrella'

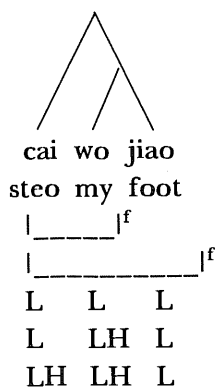


(b) 'buy some wine'

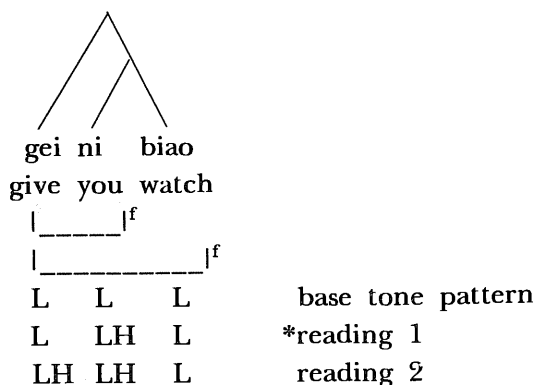


This analysis appears to be on the right track, except that it misses the generalization that classifiers are functors, and cliticization should, by no means, be limited to classifiers only. For one, the pronouns in (23) show exactly the same tendency:

(23)(a) 'to step on my feet'



(b) 'to give you a watch'



In all likelihood, all functors are subject to cliticization. Specifically, I would like to propose that they cliticize to the left of the preceding Ph boundary (#), as has been argued in (21). The cliticizing processes happening in (22) can be structurally represented by (24):

(24)(a) 'buy an umbrella'

| | | | |
|-----------|----|----------|-------------------|
| mai | ba | san | |
| buy | CL | umbrella | |
| #[mai ba | #[| san | cliticization |
| [| |] | IP |
| x | | x | Lexical Beat |
| | x | | Functor Beat |
| <-----> | | | window |
| _____ ^f | | | ABF |
| <-----> | | | window |
| _____ ^f | | | JF |
| L L | | L | base tone pattern |
| LH L | | L | *reading 1 |
| LH LH | | L | reading 2 |

(b) 'buy some wine'

| | | | |
|-------------|------|------|-------------------|
| mai | dian | jiu | |
| buy | CL | wine | |
| #[mai dian | #[| jiu | cliticization |
| [| |] | IP |
| x | | x | Lexical Beat |
| | x | | Functor Beat |
| <-----> | | | window |
| _____ ^f | | | ABF |
| <-----> | | | window |
| _____ ^f | | | JF |
| L L | | L | base tone pattern |
| LH L | | L | *reading 1 |
| LH LH | | L | reading 2 |

A further claim should be made that foot formation applies cyclically on prosodic constituents, i.e., within the Ph first, and then across Phs. In other words, the left-cliticized *ba*, or *dian*, in (24) must join with *mai* first to form a foot. When the beats are scanned from left to right, the ABF is triggered in the Ph cycle, and then the JF operates in the IP cycle. Consider now (25):

(25)(a) 'buy an umbrella'

| | | | |
|---------------------|---------------------|----------|-----------------------|
| mai | ba | san | |
| buy | CL | umbrella | |
| #[mai ba | # [| san | cliticization |
| [| % [| | *IP |
| x | x | | Lexical Beat |
| x | | | Functor Beat |
| _____ ^f | _____ ^f | | *surface foot pattern |
| L L | L | | base tone pattern |
| LH L | L | | *sandhi tone pattern |

(b) 'buy some wine'

| | | | |
|---------------------|---------------------|----------|-----------------------|
| mai | ba | san | |
| buy | CL | umbrella | |
| #[mai dian | # [| jiu | cliticization |
| [| % [| | *IP |
| x | x | | Lexical Beat |
| x | | | Functor Beat |
| _____ ^f | _____ ^f | | *surface foot pattern |
| L L | L | | base tone pattern |
| LH L | L | | *sandhi tone pattern |

The intonational phrasing in (25) is not allowed since it violates the Sense Unit Condition, i.e., the first two syllables of either example in (25) display no modifier-modified relation nor argument-head relation holds between them. Because foot formation cannot cross any IP boundary, the footing patterns and the tone patterns in (25) are excluded.

There are, however, functors which might not undergo cliticization. Consider the distinction between (26)(a) and (26)(b):

(26) 'The dog runs to the North.'

| | | | | | |
|-----|---------------------|-----------------------------------|---------------------|-----|---------------------|
| | gou | wang | bei | pao | |
| | dog | to | North | run | |
| | # ^S [| # ^{VP} [^{PP} [| |] | Ph |
| | #[gou | wang#[| bei | pao | cliticization |
| (a) | [| | |] | IP1 |
| | x | | x | x | Lexical Beat |
| | | x | | | Functor Beat |
| | | | _____ ^f | | ABF |
| | _____ ^f | | | | ABF |
| | L | L | L | L | base tone pattern |
| | LH | L | LH | L | sandhi tone pattern |
| (b) | [] % [| | |] | IP3 |
| | | | _____ ^f | | ABF |
| | __ ^f | | | | MF |
| | | _____ ^f | | | JF |
| | L | LH | LH | L | sandhi tone pattern |

Both (26)(a) and (26)(b) can be accepted as alternative readings. In the former, the functor *wang* is cliticized to the left, while in the latter it is not. The question is then what makes *wang* so different from *ba* or *dian* in (24) and the like. Observing more carefully, one may find that the key is a syntactic one. The syntactic bracketings in (26) show that *wang* is a projection head, i.e., the head of PP, unlike *ba* or *dian*, et cetera, which are non-heads. The principles of cliticization can now be formalized:

Cliticization

(27)(a) A functor which is a non-head of a X^{\max} must be cliticized to the left of the preceding Ph boundary.

(b) Cliticization is optional for X^{head} functors.

At this point, cyclicity should also be added to the Foot Phrasing Principles, as drawn in (28):

(28) Cyclic Foot Formation: Beats are constituted into feet cyclically on prosodic constituents.

(28) is crucial to the tonal behavior of functors. The philosophy is that tone sandhi applies to the domain of the foot, which is cyclically formed on prosodic constituents. Tone sandhi which involves obligatory functor cliticization, constitutes special evidence for it, as has been shown by (24) and further illustrated by (29):

(29) 'intend to buy an umbrella'

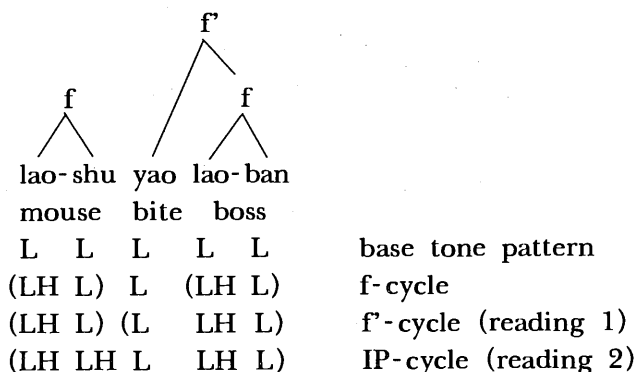
| | | | | | | |
|-------------------|--------|-------------------|--------------|-------------------|--------------|---------------------|
| | xiang | mai | | ba | san | |
| | intend | buy | | CL | umbrella | |
| # ^{VP} [| | # ^{VP} [| | # ^{NP} [| | Ph |
| (a) #[| xiang | #[| mai | ba | #[| san |
| | | | | | | cliticization |
| | | | | | | IP |
| | x | | x | | x | Lexical Beat |
| | | | | x | | Functor Beat |
| | | | | ----- | ^f | ABF (Ph-cycle) |
| | | ----- | ^f | | | JF (IP-cycle) |
| | | ----- | ^f | | | JF (still IP-cycle) |
| | L | L | L | L | | base tone pattern |
| | L | LH | LH | L | | reading 1 |
| (b) #[| xiang | #[| mai | ba | #[| san |
| | | | | | | cliticization |
| | | | | | | IP |
| | | ----- | ^f | | | ABF |
| | | | | ----- | ^f | ABF |
| | L | L | L | L | | base tone pattern |
| | LH | L | LH | L | | *reading 2 |

In contrast to *wang* in (26), which are heads of the relevant projections, the classifier *ba* in (29) is a non-head, and therefore is subject to obligatory cliticization. The ill-formed tone pattern results from the noncyclic application of foot formation, which creates two false tonal domains (ABFs). To correctly derive the desirable tone pattern, beats assigned to *mai* and *ba*

must constitute the initial tonal domain, i.e., they must be the first to form a foot, as shown by (29)(b). The remaining beats are subsequently adjoined into Jumbo Feet. Shih (1986, 1990) suggests that Mandarin tone sandhi is subsumed under the cycle, which provides very significant insight into the question of the rhythm-tone interface. In the case of (29)(a), the low tone rule ($L \rightarrow LH/__L$) applies from the innermost foot outward so that the peripheral low tones can be retained.

Shih's (1986) conception of cyclic tone sandhi basically refers to the following. First of all, the operation of tone sandhi starts from the lowest foot upward. Second, its application may be extended to the domain of the intonational phrase (IP). (30) should give a good idea of her point:

(30) 'The mouse bit (my) boss.'



The idea is that tone sandhi can optionally be absent on the higher cycle, namely between feet, such that reading 1 in (30) is available. Shih (1990) then introduces the notion of 'initial cycle'. As she elaborates, tone sandhi is obligatory on the initial cycle, while optional on the higher cycles. More readings would thereby be expected, as shown by (31):

(31) 'The mouse bit (my) boss.'

| | | | |
|-----------|-------|---------|--------------------------------|
| lao-shu | yao | lao-ban | |
| mouse | bite | boss | |
| L | L | L | L L base tone pattern |
| (LH L) | (LH | LH L) | initial cycle = f' (reading 3) |
| (LH LH LH | LH L) | | initial cycle = IP (reading 4) |

In reading 3, the trisyllabic f' is selected as the initial cycle, where tone sandhi applies obligatorily and derives low-high contours out of *mai* and *hao*. The initial cycle in reading 4 is the entire IP, such that only the rightmost low tone remains invariant. Shih's analysis appears to be very elegant in deriving alternative tone patterns, at which point, however, there are two problematic aspects. The first of them is using cyclicity to refer to constituents which are not homogeneous. I proposed earlier that constituents such Ph, IP and the like do not belong to the same hierarchy as the foot, and we have seen cases where there exist mismatches between the Ph and the foot, as shown by the paradox between in (32)(a) and (32)(b):

(32)(a) 'excellent moral character'

| | | |
|---------------------|---------------------|-----|
| Ph | | |
| / | | \ |
| liang-hao | pin-de | |
| excellent | character | |
| _____ ^f | _____ ^f | ICF |

(b) 'The dogs bite (my) boss.'

| | | | |
|---------------------|------|---------------------|-----|
| Ph | Ph | Ph | |
| /△ | /△ | /△ | |
| gou | yao | lao-ban | |
| dog | bite | boss | |
| | | _____ ^f | ICF |
| _____ ^f | | | ABF |

In (32)(a), the Ph consists of two feet, while in (32)(b) the first foot

crosses two Phs. The existence of the Ph is motivated by the fact that foot formation must operate cyclically on the prosodic structure, i.e., from the Ph-cycle upward to the IP-cycle, as has been shown by (29). It should be clear that there are two separate hierarchies: one consists of categories such as the foot, and the other is built upon IPs, Phs and the like. Therefore, instead of saying that tone sandhi applies cyclically on the foot and the IP, it would be more pertinent to say that tone sandhi is alternatively sensitive to these two types of domains.

A second problem with Shih's proposition is related to the cyclic theory, which by nature refers to rule application initiated from the innermost brackets outward. By ignoring bracketings at any level, namely randomly choosing an initial cycle, it would in fact violate cyclicity directly (Perlmutter & Soames, 1979; Riemsdijk & Williams, 1986). Note that there is in fact only one of the readings in (30-34) that can be really said to obey the cycle; namely reading 2, the exact derivation of which is shown by (33):

(33) 'The mouse bit (my) boss.'

| | | | | |
|---------|------|---------|----|---|
| lao-shu | yao | lao-ban | | |
| mouse | bite | boss | | |
| L | L | L | L | L |
| (LH |) | (LH |) | |
| | (na |) | | |
| (| LH |) | | |
| LH | LH | L | LH | L |

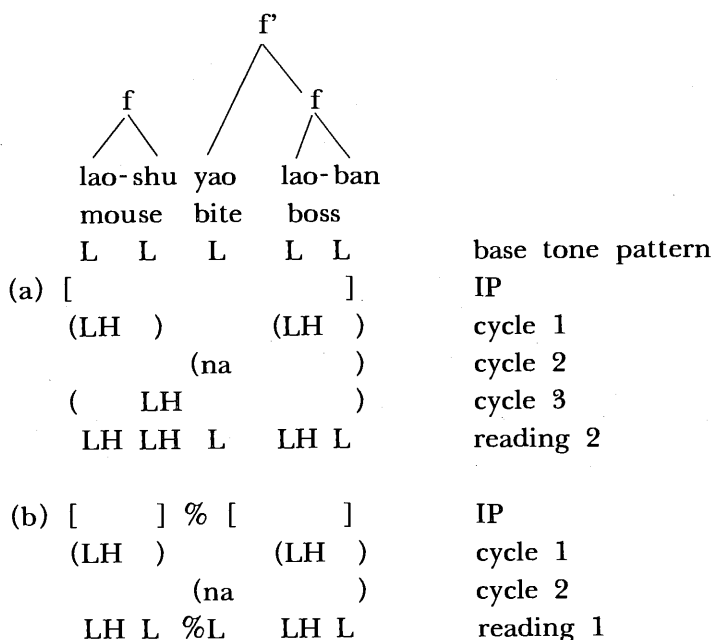
| |
|---------------------|
| base tone pattern |
| cycle 1 |
| cycle 2 |
| cycle 3 |
| sandhi tone pattern |

As for the other three readings, they are not so much cases of choosing an initial cycle as of choosing a different kind of tonal domain. In each of the readings 1, 3 & 4, as a matter of fact, when an initial cycle is chosen, that is it -- tone sandhi stops there. No actual evidence for further cyclic application is indicated. It can therefore be observed that those readings are the result of tone sandhi being sensitive to a variety of domains. To be

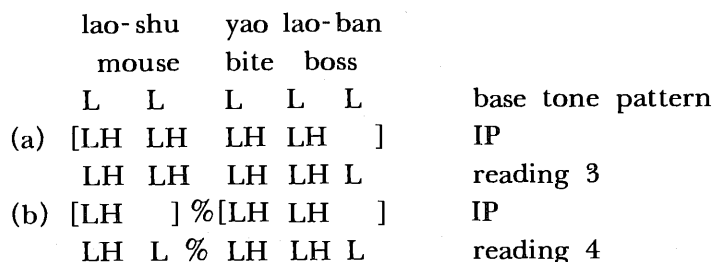
precise, the alternative readings should be attributed to the various ways of phrasing IPs. The principle I would like to propose to govern the application of Mandarin tone sandhi is given in (34), and (35-36) demonstrate the strength of this principle:

- (34) Tone sandhi applies cyclically on and across feet, or simultaneously within IPs; in either case, tone sandhi must be blocked by the IP boundary %.

- (35)(a) 'The mouse bit (my) boss.'



- (36) 'The mouse bit (my) boss.'



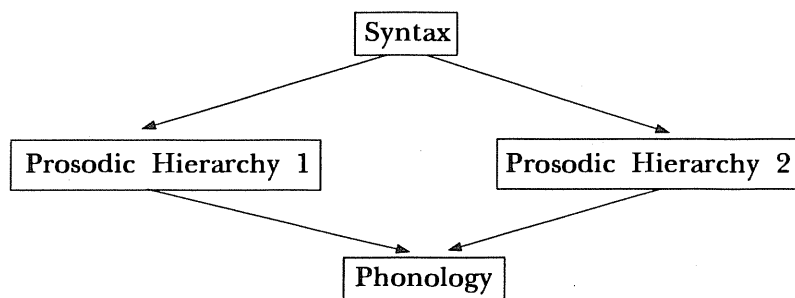
(35) shows cyclic tone sandhi on the foot, while (36) reveals simultaneous

tone sandhi within the IP. Unlike the (a)-structures, which consist of a single IP, the (b)-structures parse into two IPs, and tone sandhi is blocked by %, the IP boundary.

Some Theoretical Consequences

In brief, we have used the term 'prosodic' to refer to IP, Ph and the like, and the term 'metrical' to refer to categories such as the foot. The purpose is not to redefine these terms, but rather to keep the separation of these two types of categories on different hierarchies. In Hsiao (1990a, 1991c), I propose that there are two independent prosodic hierarchies, that is to say, there are two mediators standing between the syntax component and the phonology component. The first prosodic hierarchy includes the intonational phrase (IP), the phonological phrase (Ph) and the like. The second prosodic hierarchy consists of the foot, the beat, etc. Mandarin therefore illustrates a rather intricate interface, as summarized in (37):

(37) Syntax-Phonology Interface (The Mandarin Case)



The metrical hierarchy is termed *prosodic* since it plays an indispensable role in mapping syntax and phonology. The foot in Mandarin, for instance, is

syntactically defined, and serves as a rule domain for tone sandhi. The Mandarin case suggests that prosodic phrasing, in addition to syntactic structure, feeds foot formation. What is of interest here is that foot formation must apply cyclically on Prosodic Hierarchy 1, i.e., from the Ph-cycle upward to the IP-cycle. Tone sandhi then operates either cyclically on the foot or simultaneously within the domain of the IP.

(Accepted for publication 13 August 1992)

REFERENCES

- Bates, E., A. Frederici and B. Wulfeck. 1987. "Grammatical Morphology in Aphasia: Evidence from Three Languages." *Cortex*. 23: 545-574.
- Bates, E. and B. Wulfeck. 1989. "Cross-linguistic Studies of Aphasia." *The Cross-linguistic Study of Sentence Processing*. Macwhinney, B. and E. Bates, eds. Cambridge: Cambridge University Press. 328-371.
- Betinetto, P. and M. Loporcaro, eds. 1988. *Certamen Phonologicum*. Torino: Rosenberg & Sellier.
- Chan, M. 1985. *Fuzhou Phonology: A Non-Linear Analysis of Tone and Stress*. University of Washington. Ph.D. Dissertation.
- Chen, M. 1984. "Unfolding Latent Principles of Literary Taste: Poetry as a Window onto Language." *Tsing Hua Journal of Chinese Studies*. 16: 203-240.
- Chen, M. 1986. "An Overview of Tone Sandhi Phenomena across Chinese Dialects." Paper presented at the Conference on the Languages and Dialects of China.
- Chen, M. 1991a. "From Tone to Intonation: A Case Study on Wenzhou." UCSD. Manuscript.
- Cheng, L. 1987. "Derived Domains and Mandarin Third Tone Sandhi." *CLS*. 23: 16-29.
- Edmond, J. 1985. *A Unified Theory of Syntactic Categories*. Dordrecht Foris.
- Golston, C. 1990. "Lexical Ordered Lexical Insertion." *WECOL*. 20: 113-126.
- Hayes, B. 1981. *The Metrical Theory of Stress Rules*. Bloomington: Indiana University Linguistics Club.
- Hayes, B. 1983. "A Grid-Based Theory of English Meter." *Linguistic Inquiry*. 14: 357-393.

- Hsiao, Y. 1990a. "The Bermuda Triangle of Syntax, Rhythm and Tone." *ESCOL*. 7: 112-123.
- Hsiao, Y. 1990b. "When Syntax Meets Rhythm..." *WECOL*. 20: 127-137.
- Hsiao, Y. 1991a. "Uncovering the Mystery of Function Words in Rhythm." Paper presented at FLSM-2.
- Hsiao, Y. 1991b. "The Syntax-Phonology Interface as the Key to Metricality." *Kansas Working Papers in Linguistics*. 16: 77-98.
- Hsiao, Y. 1991c. *Syntax, Rhythm and Tone: A Triangular Relationship*. Crane Publishing Co..
- Hung, T. 1987. *Syntactic and Semantic Aspects of Chinese Tone Sandhi*. UCSD. Ph.D. Dissertation.
- Inkelas, S. 1989. *Prosodic Constituency in the Lexicon*. Stanford University. Ph.D. Dissertation.
- Kaisse, E. 1985. *Connected Speech: the Interaction between Syntax and Phonology*. Academic Press.
- Kiparsky, P. 1979. "Metrical Structure Assignment is Cyclic." *LI*. 10: 421-441.
- Liberman, M. and A. Prince. 1977. "On Stress and Linguistic Rhythm." *LI*. 8: 249-336.
- McCarthy, J. and A. Prince. 1986. "Prosodic Morphology." UMass and Brandeis. Manuscript. The MIT Press, forthcoming.
- Nespor, M., and I. Vogel. 1986. *Prosodic Phonology*. Dordrecht: Foris Publications.
- Perlmutter, D. and S. Soames. 1979. *Syntactic Argumentation and the Structure of English*. University of California Press.
- Poteet, S. 1985. "Tone Sandhi and the Phonological Structure of Mandarin." UCSD. Manuscript.
- Riemsdijk, H. van & E. Williams. 1986. *Introduction to the Theory of*

Yuchau E. Hsiao

Grammar. The MIT Press.

Selkirk, E. 1984. *Phonology and Syntax: the Relation between Sound and Structure*. The MIT Press.

Selkirk, E. 1986. "On Derived Domain in Sentence Phonology." *Phonology Yearbook*. 3: 371-405.

Shih, C. 1986. *The Prosodic Domain of Tone Sandhi in Chinese*. UCSD. Ph.D. Dissertation.

Shih, C. 1990. "Mandarin Third Tone Sandhi and Prosodic Structure." *Studies in Chinese Phonology*. Wang, J. and N. Smith, eds. Manuscript.

Waterson, N. 1987. *Prosodic Phonology: The Theory and its Application to Language Acquisition and Speech Processing*. Great Britain: Jasprint Ltd.

Wright, M. 1983. *A Metrical Approach to Tone Sandhi in Chinese Dialects*. University of Massachusetts Amherst. Ph.D. Dissertation.

Yip, M. 1980. *The Tonal Phonology of Chinese*. MIT. Ph.D. Dissertation.

Zec, D. 1988. *Sonority Constraints on Prosodic Structure*. Stanford University. Ph.D. Dissertation.

漢語音步之音板計數理論

蕭 宇 超

國立政治大學語言學研究所

音步的形成一直是韻律音韻學的研究焦點，本文提出一個音板計數理論 (Beat-counting Theory)，將漢語中的音步結構定位為一種音板節奏上的設計，尤其凸顯實詞與虛詞之間的韻律差異。換言之，音板的指派是音步形成的一大關鍵，而在這個過程中，虛詞音板的建立發生於實詞之後，致使音步首先必須架構於實詞之上，而後始含蓋虛詞。此外，音步與其他韻律結構的互動關係亦給予虛詞連讀變調一個全新的詮釋。本篇論文揭開了一個長久以來頗受爭議的虛詞韻律節奏之謎。

Verb Movement and Some Syntax-semantics Mismatches in Chinese

C.-T. James Huang

University of California at Irvine

A number of apparent mismatches between the syntactic forms of sentences and their interpretation are shown to be resolved under a theory of grammar which embodies a process of Verb-to-Verb Movement. One of these mismatches involves sentences in which certain event quantifiers occur in construction with concrete, non-event-denoting nouns. Another mismatch involves agentive phrases occurring as the surface possessors of concrete noun objects. It is proposed that these sentences have underlying structures with gerundive complements embedded under an abstract 'light verb', and that the surface form is derived after the verb contained in the gerundive complement is raised to the position of the abstract light verb. A somewhat different process raises a verb out of a VP into the head of a higher VP shell, accounting for the form of certain complex causative sentences and the well-known possessive object construction. It is concluded that although Chinese differs from English and French with respect to the existence of V to I movement, the process V-to-V movement (or incorporation) appears to be generally available in language.

1. Introduction

One of the central assumptions of current theoretical work on syntax and the relationship between syntax and semantics is that the semantics of

natural language sentences can be deduced from their syntax by a finite set of rules of semantic composition or interpretation. In the normal cases, there is a good match between syntax and semantics, so that given the normal rules of composition and interpretation, the meaning of sentences can be directly "read off" from their surface form. In many cases, however, surface sentences appear to resist direct interpretation by normal interpretive procedures. These include cases where certain constituents appear away from positions where they are expected:

- (1) a. Which pictures of himself does he like most?
- b. Considerable advantage was taken of John.
- c. John seems to be an honest guy.

For example, in (1a) the reflexive *himself* is interpretable as taking the pronoun *he* as its antecedent, but it does not appear in the scope of the latter, thus contradicting otherwise general requirements on reflexive interpretation. In (1b) the idiom chunk *advantage* does not appear in its expected syntactic position (as object of *take*) to receive the intended idiomatic interpretation. And in (1c) the NP *John* is the semantic subject of the lower predicate *to be an honest guy*, not that of the higher verb *seem*, but it appears, syntactically, as the subject of the latter. In cases of mismatches like these, the standard treatment is to postulate a syntactic rule of movement, which moves a noun phrase from its semantically "expected" position to its syntactically observed position. Such a treatment not only solves the problem raised by the observed mismatch, but may often be shown to capture other linguistically significant generalizations.

The role of a movement rule in generative grammar is of course familiar where the rule affects a phrasal category of one kind or another. In more recent years it has become increasingly clear that movement also affects a

lexical category--a word, in an equally significant way in natural language syntax. In particular, it is now well known that the postulation of verb-movement is fundamental to a proper understanding of the word order pattern of so-called "verb-second" languages. In other languages, the postulation of a rule that moves a verb to a higher position I^0 containing the inflectional and modality features of a sentence, also provides a revealing account of certain syntax-semantics mismatches. For example, in Modern English the auxiliary verbs *have* and *be* appear before *not* though the perfective and the progressive aspects are apparently within the scope of negation:

- (2) a. John has not seen Bill.
b. John is not discussing the problem.

Thus, (2a) means "it is **not** the case that John **has** seen Bill," but not "it has been the case that John **does not** see Bill," even though the perfective *has* precedes and asymmetrically c-commands *not*. Similarly, (2b) means "it is not the case that John is discussing the problem," but not "it is being the case that John **does not** discuss the problem." The mismatch observed here is accounted for by the hypothesis that the auxiliary verbs appear underlyingly below negation, but raise to I^0 above negation on the surface. Thus (2a) is associated with the d-structure (3a) and the s-structure (3b):

- (3) a. [_{IP} John [_{I'} [_I -es] not [_{VP} have seen Bill]]].
b. [_{IP} John [_{I'} [_I have_i -es] not [_{VP} t_i seen Bill]]].

In French, furthermore, even finite main verbs appear before negation and other sentential adverbs, indicating that main verbs also move into I^0 :

- (4) a. *John knows not your name.
Je ne parle pas Français.

- (5) a. *John kisses often Mary.
b. Jean embrasse souvent Marie.

The difference between Modern English and French lies then in whether or not a rule exists that moves main verbs into I^0 (Emonds (1978), Pollock (1989)). In Modern English, V to I movement applies to auxiliary verbs only; but in French, it applies to main verbs as well.

In the relevant respects Chinese clearly patterns more closely with Modern English in not allowing a main verb to move to I^0 :

- (6) a. Zhangsan bu xihuan Lisi.
Zhangsan not like Lisi
Zhangsan does not like Lisi.
b. *Zhangsan xihuan bu Lisi.
Zhangsan likes not Lisi.
- (7) a. Zhangsan changchang ma Lisi.
Zhangsan often scold Lisi
Zhangsan often scolded Lisi.
b. *Zhangsan ma changchang Lisi.
Zhangsan scold often Lisi

In fact, even auxiliary verbs do not appear to move to I^0 , as they must follow negation:¹

- (8) a. Zhangsan mei you kanjian Lisi.
Zhangsan not have seen Lisi.
Zhangsan has not seen Lisi.

1 In Huang (1990) I analyzed perfective *you* and cleft *shi* as auxiliary verbs that appear in I^0 . In view of Emonds (1978) and Pollock (1989), and the facts shown in (5)-(6), these elements should now be assumed to stay in their V positions.

- b. *Zhangsan you mei kanjian Lisi.
Zhangsan have not seen Lisi.
- (9) a. Zhangsan bu shi zuotian lai de.
Zhangsan not be yesterday come DE
It wasn't yesterday that Zhangsan came.
- b. *Zhangsan shi bu zuotian lai de.
Zhangsan be not yesterday come DE

In each of the grammatical sentences here, the relative position of negation or an adverb like 'often' to the following verb or auxiliary corresponds exactly to their relative scope order, and there is no reason to assume that any V to I movement has occurred in these cases.²

From these observations it might be tempting to conclude that the verb does not move at all in Chinese. However, I would like to show in this paper that, although V does not move into and surface in I⁰, there does exist a process by which it moves into a higher V. I will exhibit four sets of data each indicating a significant mismatch between syntax and semantics, and argue that all of these mismatches fall naturally into place under a postulated rule of V-V movement. It follows that the general process of verb movement (a case of head-movement) exists in Chinese as it does in other languages.³

2 In Huang (1988) I analyzed Wang's (1965) rule of *-le* hopping as a V-to-I movement for Chinese; in view of Pollock's (1990) argument, that rule should still be kept in the form of an Infl lowering (affix hopping) rule.

3 The hypothesis that verb movement exists in Chinese is not new, and has been proposed in earlier studies couched within the framework of generative semantics or Fillmorean Case grammar (cf. S.-F. Huang (1974), among others). The earlier studies were primarily concerned with predicate raising of the sort proposed in McCawley (1968), by which a lower verb raises and combines with a higher verb to form a resultative compound. The cases of verb movement discussed here have not been reported before in this earlier literature, and the analysis is based on facts beyond those considered earlier.

2. Event Quantification

One type of syntax-semantics mismatch is illustrated by the (b) examples of the following pairs of sentences:

- (10) a. ta kan shu kan-le san tian.
he read book read-Perf three day
He read (books) for three days.
- b. ta kan-le san tian shu.
he read-Perf three day book
He read (books) for three days.
- (11) a. ta chang ge chang-le liang ci.
he sing song sing-Perf two times
He sang (songs) twice.
- b. ta chang-le liang ci ge.
he sing-Perf two time song
He sang twice.

The sentences in (10) each contain a quantity expression indicating the duration over which he read, and in (11) the sentences contain an expression indicating the frequency with which the event of singing has occurred. In traditional descriptions of Chinese grammar, these expressions are called "measure phrases of verbs" (*dong-liang* 動量). This seems quite appropriate from the semantic point of view, as duration and frequency expressions seem to quantify over actions or events in much the same way that normal prenominal quantifier phrases quantify over objects. These are the "measure phrases of nouns" (*ming-liang* 名量), illustrated by *yi-ben*, *wu-ge* in the following examples:

(12) ta mai-le yi-ben shu.

he buy-Perf one-CL book

He bought one book.

(13) ta chi-le wu-ge pingguo.

he eat-Perf five-CL apple

He ate five apples.

In an equally appropriate way, Chinese grammarians have described certain quantity expressions as "measure phrases of adjectives" (*xing-liang* 形量):

(14) Zhangsan liu ci gao.

Zhangsan six foot tall

Zhangsan is six feet tall.

(15) zhe-kuai bu ba ci chang.

this-piece cloth eight foot long

This piece of cloth is eight feet long.

This treatment captures, in a rather insightful way, a cross-categorical generalization about the structure of major phrase categories: like NPs, VPs and APs may contain measure phrases as well. In each case a measure phrase contains a numeral expression followed by a classifier of some sort, including *ben*, *ge*, etc., for nouns; *ci* 'time', *tian* 'day', etc., for verbs; and *ci* 'foot', *cun* 'inch', etc., for adjectives.

The main point of interest for our current purposes is the fact that, whereas the nominal and adjectival measure phrases occur in a position to modify their head nouns or adjectives (as must be the case in (12)-(15)), the frequency and duration expressions, as verbal quantifiers, need not occur in a syntactic position to modify their head verbs. In (10a) and (11a), the verbal measures occur in construction with the head verbs, and directly modify the latter. In the (b) sentences, however, the verbal measures clearly

occur in construction with the object noun following the verb, and in a position typically occupied by nominal quantifiers.

That the verbal measure occurs in a syntactic position to modify the postverbal object in (10b) and (11b) can be easily established by the fact that they each form a movable constituent with the object, as evidenced by sentences like the following, provided by Zhu Dexi (personal communication):

- (16) ta lian yi tian shu dou mei kan.
he even one day book all not read
He did not even for one day read a book.

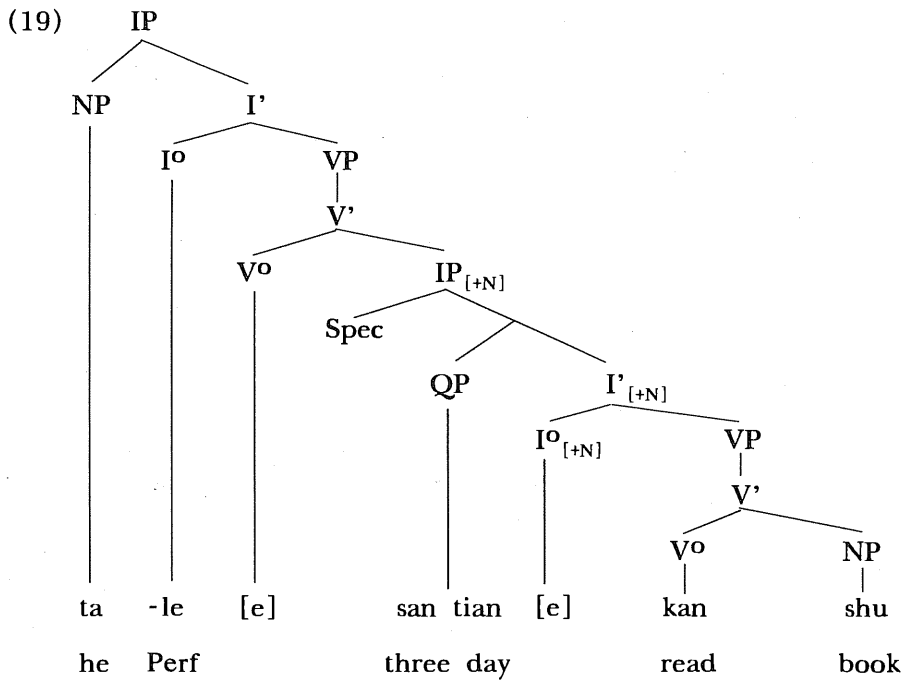
- (17) ta lian yi ci ge dou mei chang-guo.
he even one time song all not sing-Exp
He did not even sing once.

Here, then, is a case of syntax-semantics mismatch. In (10b), (11b) and (16)-(17), we have measure phrases that behave syntactically as nominal measure phrases, though semantically they really quantify over actions, given the synonymy of (10b) and (11b) with their counterparts in (a), and as the translation of (16)-(17) shows. That is, in each case we have a semantic *dong-liang* 動量 behaving syntactically as a *ming-liang* 名量. The normal rule of semantic interpretation would treat these measure phrases as quantifying over the nouns they modify, and these sentences would be literally interpreted as 'three days of books', 'twice of songs', etc., but books, cars, and languages denote objects but not events, and as such they cannot be quantified in terms of frequency and duration. Some other examples illustrating the same kind of mismatch are given below:

- (18) a. ta qu-le san ci Beijing.
he go-Perf three time Beijing
He went to Beijing three times.

- b. ta piping-le liang nian Zhangsan.
 he criticize-Perf two year Zhangsan
 He criticized Zhangsan for two years.
- c. ta sao-le wu tian cesuo.
 he clean-Perf five day toilet
 He cleaned the toilet five times.
- d. ta jintian zhi xiao-le yi ci bian.
 he today only take-Perf one time pee
 He urinated only once today.

I suggest that the key to solving this mismatch is to analyze these sentences as involving a structure of gerundive nominalization and a process of verb-raising. More specifically, I propose that (10b) has the following underlying structure:



In this structure, a VP containing the sequence *kan shu* 'read books' is

embedded within a nominal clause IP, as a complement to the nominal IP. In other words, the VP *kan shu* is treated as part of a gerundive construction, which is in turn embedded as the object of an empty verb meaning 'do'. This gerundive phrase is quantified by the numeral classifier phrase *san tian* 'three days'.⁴ According to this structure, the entire sentence means "he did three days of reading books."

As is well known from English gerundive constructions, a gerundive phrase behaves like a verb phrase in some respects, but like noun phrases in others--another instance of a mismatch. More specifically, gerund phrases behave externally as noun phrases because they occupy typical NP positions and their Spec's take the Genitive Case, but internally they behave as VPs because the verb may take a direct object, assigning Accusative Case to it, and is modified by adverbial but not by adjectival expressions. In English, this "mismatch" can be aptly explained by the assumption that gerundives are nominal IPs headed by *-ing*, which takes VP as its complement. The gerundive phrase in (20a) has the structure indicated in (20b):

- (20) a. John is angry at Bill's carelessly dismissing his argument.
b. [_{IP} Bill's [_{I'} [_I -ing] [_{VP} carelessly dismiss his argument]]].

The verb behaves internally as the head of VP, but the gerundive as a whole is a nominal clause, and behaves externally as an NP. (cf. Huang (1982), Reuland (1983).)⁵ In a similar way, I propose that sentence (10b) has the

4 An alternative is to follow Tang (1990), who, in the spirit of Chao (1948) and Chomsky's (1986) extended X' theory, proposed that a noun phrase containing a numeral classifier expression is in fact a "Classifier Phrase," i.e., a phrase headed by the numeral-classifier element. Under this assumption, the nominal IP would be a CLP, and the numeral specifier would be the head of CLP taking the VP as its complement.

5 Within X-bar theory categories like N, V, A, P are understood to represent bundles of features [α N] and [β V]. Extension of X-bar theory to the IP

structure of a gerundive construction. According to (19), (10b) is underlyingly a sentence with a transitive verb which is phonetically empty and semantically bleached (i.e., meaning 'do'). This transitive verb takes a gerund object meaning 'reading books', which is quantified by 'three days'. In this structure, the verb *kan* 'read' behaves as a verb within VP, taking the object *shu* 'book' and assigning ACC case to it. Externally, however, the whole VP is complement to an abstract nominal head, and is part of a nominal IP.

Given that the transitive verb is empty, the verb contained in the gerundive VP raises to fill it, enabling it to assign Case to the entire gerundive construction.⁶ This process of verb movement, plus other house keeping rules, results in the surface word order given in (10b). Thus, a D-Structure corresponding to something like "He did three days of book reading" is

system offers a nice way to categorize the various clausal types observed in English: tensed, gerundive, participial, and infinitival. Assuming all IPs are [+I], the features [α N] and [β V] aptly characterize these clause types as verbal, adjectival, and prepositional clauses:

Tensed clauses are verbal IPs: [+I, -N, +V]

Gerundives are nominal IPs: [+I, +N, -V]

Participials are adjectival IPs: [+I, +N, +V]

Infinitivals are prepositional IPs: [+I, -N, -V]

That tenses are verbal seems uncontroversial. Participials are adjectival since both present and past participants are used to modify nouns or to predicate on NPs. The prepositional nature of infinitival clauses is of course matched by *to* as their head. They also behave on a par with PPs with respect to Case Theory: like PPs and unlike NPs, they don't need Case; and like PPs and unlike tensed clauses, they do not resist Case (under Stowell's (1981) theory of Case Resistance).

- 6 I assume that the movement proceeds successive-cyclically, through the empty head of the gerund. I assume that although V cannot move into and stay within an I⁰ in Chinese, it can move through it as long as movement does not violate any general constraint of grammar.

turned into a surface string that literally translates as "*He read three days of books." Similarly, in (11b), an underlying structure corresponding to "He did two times of singing songs" surfaces in a form that literally translates as "*He sang two times of songs," etc.

According to the proposed analysis, then, the observed syntax-semantics mismatch reduces to a familiar case of nominalization. The frequency and duration expressions in (10b) and (11b) are appropriately analyzed as a nominal measure in the syntax quantifying over nominal categories (a nominal I'_0 in (19), analogous to an N-bar), but since the gerundive phrases they quantify over denote events or actions, these sentences are correctly interpreted as involving event quantification, as much as their (a) counterparts do.

The account we have provided for (10b) and similar sentences also extends to the following examples, where a frequency or duration expression is followed by the prenominal modifier marker *de*.

- (21) a. ta kan-le san tian de shu.
he read-Perf three day DE book
He read (books) for three days.
- b. ta xue-le liang ci de Yingwen.
he study-Perf two time DE English
He studied English twice.
- c. ta zhi kan-le san-ge zhongtou de dianying.⁷
he watch-Perf three-CL hour DE movie
He watched moves for only three hours.

7 This sentence is ambiguous between a reading according to which 'three hours' modifies a concrete noun 'movie' and one according to which it quantifies over an event of watching movies. According to the former reading the sentence means he watched only three-hour movies (i.e., only movies that last three hours, but not, say, movies that last two hours).

- d. ta yigong sao-le wu ci de cesuo.
he altogether clean-Perf five time DE toilet
Altogether he cleaned the toilet five times.

The possible addition of *de* to the measure phrase is not surprising, given our proposed analysis, since it is also often possible for a typical nominal measure to take *de*.

- (22) a. wo mai-le liang ben (de) shu.
I buy-Perf two volume DE book
I bought two books.
b. ta mai-le san bang (de) zhurou.
he buy-Perf three pound DE pork
He bought three pounds of pork.

It is obvious that the classifier originates as a noun, and the measure phrase may still behave like a full NP. The measure phrase, then, may appear in a determiner position (without *de*), or it may occur in a prenominal genitive position.

3. Possessive Agents

Another type of syntax-semantics mismatch is illustrated by examples of what we may call the "possessive agent construction":

- (23) a. ni zou ni-de yangguandao, wo guo wo-de dumuqiao.
you go your wide-avenue I pass my one-log-bridge
You walk your 'Champs Elyses' and I cross my one-log bridge.
b. ta nian ta-de shu, wo shui wo-de jiao.
he read his book I sleep my sleep
He read his book and I slept my sleep.

c. ni haohao jiao ni-de Yingwen ba.

you well teach your English Prt

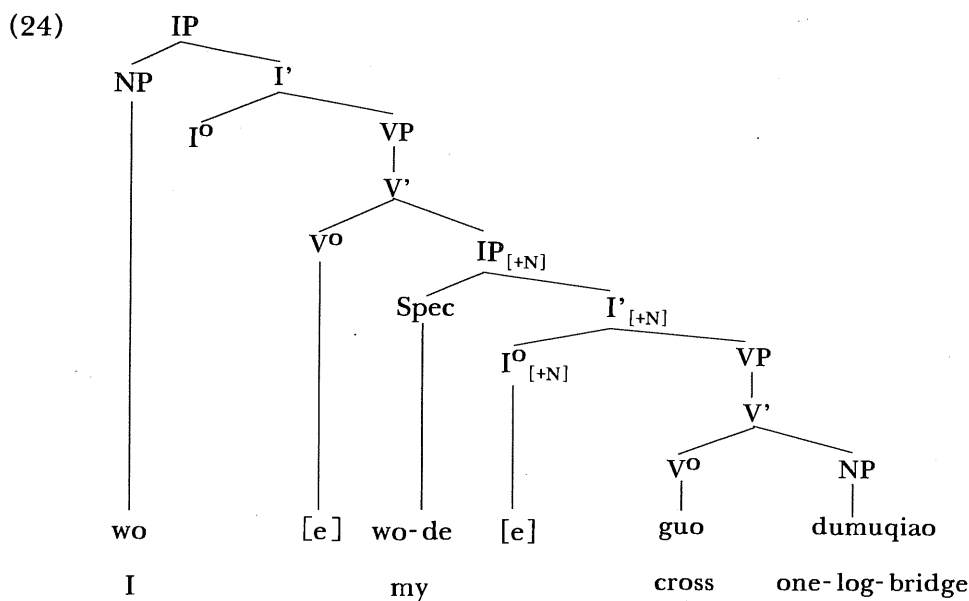
You better teach your English well.

In each of these sentences, the object has the form of an NP with a genitive modifier.⁸ However, the genitive NP is clearly not the possessor of the object denoted by its head. For example, *yangguandao* does not belong to you any more than the *dumuqiao* belongs to me. In the reading under consideration, the sentence (23b) does not entail that he owns the book, even with *ta* and *ta-de* co-indexed. Finally, 'sleep' and 'English' simply cannot be owned. Since these head nouns denote objects but not processes or actions, the genitive NP also cannot be construed as an argument (agent, theme, etc.) of the head noun.⁹

I propose, as before, that these sentences involve nominalization and that the genitive NP is an agent argument of an event nominal whose verbal head has moved up to a higher empty verb position. Thus the expression literally rendered as 'I cross my one-log bridge' really derives from one that means 'I do my crossing of the one-log bridge':

8 For convenience, I shall speak of the sequence NP *de* as a genitive NP on the basis of its English counterpart. It is of course a problem to treat *de* as a genitive case marker, since apparently the same morpheme is used with relative clauses and other categories that do not need cases.

9 See Grimshaw (1990) and the references cited there for the argument that only (certain) event-denoting nouns have argument structures.



After the verb *guo* 'cross' raises into the higher verb position, the surface string *wo guo wo de dumuqiao* in (23a) is obtained. In this analysis, the genitive NP is correctly represented as the subject of a gerundive phrase, or the agent of the action denoted by the gerundive, but not as an argument of the object head noun.

In the examples in (23), the verb undergoing raising is transitive. An intransitive action verb may likewise raise, resulting in sentences like the following:

- (25) ta ku ta-de, wo xiao wo-de.
 he cry his I laugh my
 He did his crying, and I did my laughing.

As in the case of the verbal measure phrases, a mismatch between what is syntactically a modifier of a concrete noun and what is semantically an argument of a verb disappears under the assumption that verb movement takes place out of a structure in which the genitive NP appears syntactically as the subject of a gerund.

I assume that the need for verb movement in these cases follows from general principles of grammar. In a structure like (24) or (19), verb raising is required because the main verb is phonetically empty, and unable to assign Case to its object. If the main verb is lexically filled, verb raising does not take place. The alternation observed below provides some evidence for our analysis:

- (26) a. ta gao ta-de gexin, ni gao ni-de fugu.
he do his innovation you do your renaissance
He did his innovation, and you did your renaissance.
- b. ta ge ta-de xin, ni fu ni-de gu.
he ge- his -xin you fu- your -gu.
(*gexin* 'to innovate', *fugu* 'to revive')

It might be suggested that the analysis we have proposed for the "possessive agent" constructions is not necessary, and that what is needed is simply an extension of the range of possible meanings of a genitive NP. In particular, instead of limiting the genitive NP modifying a non-process noun to its possessive meaning, one might allow for it to denote also the agent of an event with which the modified noun is somehow associated as a patient. It is of course true that a genitive NP modifying a non-process noun is not limited to denoting a possessor: *zuotian de chehuo* 'yesterday's accident', *Taipei de tianqi* 'Taipei's weather', etc. The expression *ni de Yingwen* 'your English' in *ni de Yingwen hen hao* 'your English is good', for example, does not mean the English language that you own, but the English that you speak. Given this, one might suggest directly extending the meaning of *ni de Yingwen* 'your English' to 'the English that you teach' in (23c), and eliminate the need to appeal to an analysis involving raising and nominalization.

However, such a view has fundamental difficulties. For one thing, the interpretation of *ni de Yingwen* as 'the English you speak' is context-independent, but its interpretation as 'the English that you teach' is completely limited to specific contexts like (23c), e.g., when the verb is 'teach'. No theory that attempts to interpret a genitive NP compositionally solely within the local domain of modification can capture this distinction. More importantly, it is in fact a mistake to interpret (23c) as meaning 'you better teach well the English that you are teaching'. More precisely, (23c) means 'you better do your job of teaching English well'. *ni de Yingwen* does not refer to the language, but to the job of teaching the language.

Our analysis is further supported by an important prediction it makes: that only transitive action sentences may have the agentive interpretation under consideration for the genitive NP. Thus, in the stative sentences below, the genitive NPs *ta de*, *wo de* can only have a possessive interpretation:

- (27) *ta xihuan ta de shubao, wo xihuan wo de bitong.*

He likes his bookbag, and I like my pen holder.

- (28) *wo kanjian-le wo de shu, ta kanjian-le ta de bi.*

I saw my books, and he saw his pens.

In our analysis, the lack of ambiguity of these sentences is predicted because stative predicates cannot be analyzed as a nominalization that is a complement to the action verb 'do' or 'perform'. If I teach English, then I do or perform the teaching of English; but if I like a backpack or see a book, I do not do or perform an action. Now, the lack of ambiguity in these sentences does not follow from a theory that interprets (23c) by simply extending the range of possible meanings of a genitive NP. If the interpretation of *ni de Yingwen* can be stretched to 'the English that you

teach', then there seems to be no reason why *wo de shu* in (28) must mean 'my books', but cannot somehow be stretched to mean 'the book that I saw'.

In view of the analysis proposed, the following sentences are also examples of the "possessive agent" construction:

- (29) *ta de laoshi dang de hao.*
his teacher serve-as DE well
He serves well as a teacher.
- (30) *ta de toufa li de bu cuo.*
his hair cut DE not bad
- a. His hair was cut quite well.
b. He cuts hair quite well.

In (29), *laoshi* 'teacher' is semantically the object of *dang* 'serve as'. Although the surface string translates literally as 'his teacher serves well', the sentence really means he serves well as a teacher or, in terms of our analysis, his service as a teacher was performed well. (30) is ambiguous. On one reading, *ta de toufa* refers to his hair; on the other reading, it refers to his performance as a barber, so the sentence means that his job of cutting hair is well performed. The analysis proposed here will treat *dang* and *li* (for the reading (30b)) as having raised out of a nominalized phrase that means 'his serving as a teacher' and 'his cutting hair', respectively.

This analysis differs from earlier analyses of the same sentences. In Mei (1978) and Huang (1982), for example, these examples are analyzed as involving object preposing followed by a process of *de*-insertion. Thus, from the d-structure (31a) object preposing gives (31b), which is turned into (31c) after *de*-insertion:

- (31) a. *ta li toufa de hao.*
he cut hair DE well

- b. ta toufa li de hao.
 he hair cut DE well
- c. ta de toufa li de hao.
 he 's hair cut DE well

Assuming that *de*-insertion takes place as a surface phenomenon, the surface NP that results from it, *ta de toufa*, is not interpreted as an NP constituent, and the analysis correctly interprets (31c) as 'he cuts hair well', without appealing to nominalization and verb raising. Although this seems to work well as far as these sentences are concerned, the analysis involves an overly permissive rule of *de*-insertion, which inserts *de* into a string that does not form a constituent (e.g., *ta toufa* consists of a subject and a preposed object). According to this analysis, sentences like (32c) should be well-formed on a par with (31c) and (32a)-(32b):

- (32) a. ta hen xihuan shuxue.
 he very like mathematics.
 He likes math very much.
- b. ta shuxue hen xihuan.
 he mathematics very like
 He likes math very much.
- c. *ta de shuxue hen xihuan.
 he 's mathematics very like

Notice that the crucial difference between (31c) and (32c) is that between action and stative sentences. Both action and stative sentences allow their objects to be preposed, but only action sentences trigger *de*-insertion. This generalization does not follow from anything under the insertion approach. On the other hand, our proposal that (31c) arises from nominalization and verb raising correctly rules out stative sentences like (32c), since stative

sentences cannot be analyzed as nominalized complements of the action verb 'do'.

4. Possessive Objects

The third type of mismatch to be dealt with under verb movement has to do with "possessive object" constructions like the following:

(33) *tamen bang-le wo-de piao.*

they tie-Perf my ticket

They kidnapped me.

(34) *qing ni bie kai Lisi de wanxiao.*

please you don't make Lisi's fun

Please do not joke with Lisi.

The expression *bang piao* is a V-O construction with the idiomatic meaning 'to kidnap', and the expression *kai wanxiao* means 'to joke about'. In both cases, we see that what is semantically the object of the idiomatic expression appears in genitive form in construction with the object of the V-O construction. Similar examples of this kind of mismatch abound in Chinese. Other examples include *da ta-de erguang* 'slap him', *ce ta-de houtui* 'pull his leg', *chi ta-de chu* 'be jealous of him', *dan ta-de xin* 'worry about him', *sheng ta-de qi* 'be angry at him', etc.

I propose, following Huang (1988), that these sentences derive from underlying structures in which the possessive NP appears in an "outer object" position of the idiomatic V' phrase (with a verb and an "inner object"), in the Spec of VP position.

(35) *tamen* [_{VP} [_V *e*] [_{VP} *wo* [_V *bang piao*]]]

they me tie ticket

(36) qing ni bie [vp [v e] [vp Lisi [v kai wanxiao]]]

please you don't Lisi make fun

I assume with Larson (1988) that the syntactic structure of a transitive sentence contains a VP embedded under a "VP shell" with a phonetically empty head. To such a structure verb movement may apply, resulting in the following sentences:

(37) tamen bang-le wo piao.

they tie-Perf me ticket

They kidnapped me.

(38) qing ni bie kai Lisi wanxiao.

please you don't make Lisi fun

Please do not joke with Lisi.

In these sentences the outer objects *wo* and *Lisi* appear immediately before the inner objects *piao* and *wanxiao* respectively. The juxtaposition of the two NPs enables them to be optionally reanalyzed as a single one, with the outer object as the modifier of the inner object. This causes *de* to be inserted, resulting in the surface NPs *wo-de piao*, *Lisi de wanxiao*, as in (33) and (34).

Note that the analysis proposed here for the possessive object construction differs from that proposed for the possessive agent construction and for the constructions involving event quantification in NP. Instead of postulating verb movement out of a gerundive phrase, I assume that the possessive object construction involves verb movement out of a lower VP. This explains a number of important differences between the possessive object construction and the possessive agent construction. First, whereas the possessive agent is typically coreferential with the subject of the empty matrix verb, the possessive object is required to be disjoint in reference from the matrix subject. Thus, in the examples in (23), the possessive agent

is clearly coreferential with the main clause subject. However, in (33)-(34) the possessive object is disjoint in reference from the subject. The following sentence, with the possessive object *ta-de* coindexed with Zhangsan, is unacceptable:

- (39) Zhangsan_i changchang kai ta_i-de wanxiao.

Zhangsan often make his fun

Zhangsan often made fun of him.

This difference follows from the proposed analysis. In the possessive agent construction, the possessive agent appears in the subject position of an NP. A pronoun in such a position can easily corefer with an NP outside, as is in the case of *John saw his book*. In the possessive object construction, however, the possessive object pronoun appears in Spec of VP prior to the application of the surface rule of reanalysis. In this position it has the main clause as its governing category, and disjoint reference is required.

A second difference between possessive object and possessive agent constructions is that the morpheme *de* is obligatorily required only in the latter but not in the former constructions. Thus, both the examples with *de* in (33)-(34) and those without *de* in (37) and (38) are well formed. But in contrast to the sentences in (23), the following are ungrammatical:

- (40) *ta nian ta shu, wo shui wo jiao.

he read he book, I sleep I sleep

- (41) *ni haohao jiao ni Yingwen ba.

you well teach you English Prt

This follows naturally from the assumption that the reanalysis rule is optional, and *de* is required in the possessive object construction only when reanalysis has applied. The possessive agent appears in an NP (nominal IP) at D-Structure and continues to stay there at surface structure, however, and *de*

is therefore obligatory.

The ambiguity of the following sentence provides a further argument for the need to systematically distinguish between the possessive agent and possessive object constructions. The sentence has the meanings of both these constructions, each associated with its unique properties regarding coreference and the occurrence of *de*. The expression *ge-ming* is a V-O phrase meaning 'to revolutionize'. In the example below, the verb is separated from the object by verb movement:

- (42) Zhangsan hai zai ge ta-de ming.
Zhangsan still at *ge* his *ming*
a. Zhangsan is still doing his revolutionizing.
b. Zhangsan is revolutionizing against him.

Under the first reading, the verb *ge* raises out of a gerundive phrase. The possessive agent corefers with *Zhangsan* and the genitive marker *de* cannot be deleted. Under the second reading, the pronoun starts out in Spec of VP, and takes the genitive marker only after verb movement and reanalysis have taken place. Coreference is impossible, and *de* is optional. The ambiguity shows that both analyses proposed here are needed.

5. Causative Sentences

The last case of mismatch to be discussed here is illustrated by certain kinds of resultative constructions (also considered in Huang (1988)):

- (43) zhe-ping jiu zui-de ta zhan-bu-qilai.
this-CL wine drunk-DE he cannot-stand-up
This bottle of wine got him so drunk that he could not stand up.

- (44) zhe-zhi wu tiao-de ta man-tou da-han.

this-CL dance dance-DE he whole-head big-sweat

This dance got him to dance until he sweated all over.

- (45) zhe-ge xiaoxi le-de ta shui-bu-zhao jiao.

this-CL news happy-DE he cannot-sleep sleep

This news got him so happy as to be unable to sleep.

In these sentences the matrix verb appears in a position higher than what is apparently its logical subject. In (43), for example, *zui* is a stative expression that predicates on the pronoun *ta*, but this pronoun clearly does not occur in a subject position of the predicate for predication to be possible. Instead, what appears in the subject position of the predicate is an NP that, on other grounds, is clearly incapable of being its subject: a bottle of wine cannot be drunk, a dance cannot dance, and a piece of news does not get happy. In Huang (1988), I proposed that these are causative sentences containing an empty causative verb which is filled by a verb raised out of an inchoative clause:

- (46) [_{IP} zhe-ping jiu [_{VP} [_v e] [_{IP} ta [_{VP} zui-de [_{Result} zhan-bu-qilai]]]]].

this-CL wine he drunk-DE can't-stand-up

For more details and arguments, see Huang (1988, 1991).

6. Concluding Remarks

In this paper we have seen that a head movement rule that moves a verb out of a gerundive phrase, a verb phrase, or an inchoative clause provides an explanation for a number of otherwise unexpected word order facts and apparent syntax-semantics mismatches. We conclude therefore that, although Chinese does not move a main verb or an auxiliary verb into I⁰, it

does move a verb into a higher verb position in a variety of constructions. Chinese does not differ from English and French, then, in whether the verb can move or not, but where it can move to. The languages differ with respect to whether I^0 can be the ultimate landing site of verb movement.

A theoretical question that arises is what makes these languages differ in this way. A plausible answer to this question would presumably lie in how the languages differ in the nature of I^0 . In Pollock (1989), the relevant differences between French and English are related to the fact that French has a fuller inflectional system of agreement than English. The ability to host a raised verb is related to whether or not a given Agr^0 is sufficiently rich to transmit the theta-role assignment properties of the raised verb. In French tensed clauses, the Agr^0 is sufficiently rich in content, so it can host a raised verb. In English, the Agr^0 in tensed clauses is not rich enough to transmit the theta-roles of the raised verb, so only the auxiliary verb *have* and *be*, which do not enter into theta-role assignment, may raise into I^0 in this language. This explanation also explains why V to I also does not occur in French infinitival clauses. Since the Agr^0 in the French infinitival clause is no richer than that in English tensed or tenseless clauses, the non-occurrence of V to I in such clauses is expected.

The case of Chinese seems to fall readily along the same line. As is well known, in Chinese there is no verb-subject agreement. One natural assumption is that Chinese IPs lack the node Agr^0 altogether, though they may contain other I^0 categories, such as Asp^0 , etc. (cf. Cheng (1990)). Suppose further that V moves to I only if it is hosted in Agr^0 , then it follows that in Chinese, neither main verbs nor auxiliaries move to I^0 at all.

(Accepted for publication 19 November 1992)

REFERENCES

- Chao, Yuen-Ren. 1948. *Mandarin Primer*. Cambridge, Massachusetts: Harvard University Press.
- Cheng, Lisa L.-S. 1990. Aspect Licensing of Pro in Mandarin Chinese. Ms., MIT.
- Chomsky, Noam. 1986. *Barriers*. Cambridge, Massachusetts: MIT Press.
- Emonds, Joseph. 1978. The Verbal Complex V'-V in French. *Linguistic Inquiry* 9.151-175.
- Grimshaw, Jane. 1990. *Argument Structure*. Cambridge, Massachusetts: MIT Press.
- Huang, Shuanfan. 1974. Mandarin Causatives. *Journal of Chinese Linguistics* 2.
- Huang, C.-T. James. 1982. *Logical Relations in Chinese and the Theory of Grammar*. PhD dissertation, MIT.
- Huang, C.-T. James. 1988. *Wo pao de kuai* and Chinese Phrase Structure. *Language* 64.274-311.
- Huang, C.-T. James. 1990. *Shuo shi he you*. *Bulletin of the Institute of History and Philology* 59.43-64.
- Huang, C.-T. James. 1991. Complex Predicates in Control. J. Higginbotham, U. Lahari, S. Iatridou, and R. Larson (eds.), *Control and Grammar*. Dordrecht: Kluwer Academic Publishers.
- Larson, Richard. 1988. On the Double Object Construction. *Linguistic Inquiry* 19.335-391.
- Mei, Kuang. 1978. Hanyu yufa zhong de dongci zhu buyu [On VP Complements in Chinese]. *A Festschrift for Professor Chu Wan-Li*. Taipei: Lianjing Publishers.

- McCawley, James D. 1968. Lexical Insertion in a Transformational Grammar without Deep Structure. *Papers from the 4th Regional Meeting of the Chicago Linguistic Society* 71-80.
- Pollock, Jean-Yves. 1989. Verb Movement, Universal Grammar, and the Structure of IP. *Linguistic Inquiry* 20.365-424.
- Reuland, Eric. 1983. Governing -ing. *Linguistic Inquiry* 14.101-136.
- Stowell, Timothy. 1981. *Origins of Phrase Structure*. PhD dissertation, MIT.
- Tang, C.-C. Jane. 1990. *Chinese Phrase Structures and the Extended X-bar Theory*. PhD dissertation, Cornell University.
- Wang, William S.-Y. 1965. Two Aspect Markers in Mandarin. *Language* 41.457-470.

Wh-words as Polarity Items*

Lisa Lai-Shen Cheng

University of California at Irvine

This paper examines different readings of Wh-words (i.e. question-words) in Mandarin Chinese. Following Heim's (1982) proposal on indefinites and Nishigauchi's (1986, 1990) work on wh-words in Japanese, it is proposed that wh-words in Mandarin are indefinite NPs which lack inherent quantificational force. In addition, it is claimed that wh-words in Mandarin are polarity items and thus require the presence of polarity licensors. This analysis leads to an explanation to the lack of indefinite subjects in Mandarin, assuming Diesing's (1990) theory of indefinite NPs and the VP-domain of existential closure.

1. Introduction

In this paper, I discuss different readings that wh-words can have in Mandarin Chinese. Following Nishigauchi's (1986, 1990) work on wh-words in Japanese and Heim's (1982) work on indefinites, I propose that wh-words in Mandarin Chinese are indefinite NPs, which do not have inherent quantificational force. Further, based on the environments in which the indefinite reading of wh-words appears, I propose that wh-words in Mandarin

* This paper comes out of a section on my dissertation. I would like to thank audience in University of Pennsylvania, University of Victoria, Northwestern University as well as audience in ICLL2 for comments and suggestions. I would like to also thank an anonymous reviewer for his/her comments.

are polarity items; they need a trigger. Assuming Diesing's (1990) theory of indefinite NPs, I show how each reading of the wh-words can be obtained. I then correlate the lack of indefinite subjects in Mandarin Chinese with the impossibility of interpreting a subject wh-word as a non-interrogative existential quantifier.

2. Lexical Ambiguities of Wh-words

Wh-words in Mandarin Chinese can be interpreted as interrogative words, existential quantifiers and universal quantifiers. I will discuss the environments in which each reading arises in turn.¹

2.1. Interrogative Reading of Wh-words

Wh-words are interpreted as interrogative, with or without the particle *ne*, as shown in (1) (see Chao 1968 for a discussion of the particle *ne*) (I will call the particle *ne* a wh-particle since it appears in wh-questions):²

1 I will not discuss cases such as (i) and (ii) (from R. Cheng 1984).

(i) wo xiang chi yidianr sheme.

I want eat one-little what

'I want to eat a little something.'

(ii) you yige shei yao lai kan ni.

have one who want come see you

'There is someone who wants to see you (but I cannot remember his name).'

These cases are not the same as the cases mentioned here. See Li (1992) for other data which appear to have indefinite readings for wh-words but without polarity contexts.

2 The wh-particle *ne* in Mandarin has rarely been mentioned in the literature. See Aoun and Li (1993), whose theory crucially relies on the wh-particle *ne*. For the wh-particle Cantonese, as well as other particles, see Law (1990) for a detailed discussion.

(1) hufei chi-le sheme (ne)

Hufei eat-ASP what Q_{WH}

'What did Hufei eat?'

In (1), the wh-word only has an interrogative reading; any other readings are unavailable. I propose that in wh-questions which do not have the overt wh-particle *ne*, there is a non-overt wh-particle present (see Cheng 1991 for details).

2.2. Wh-words as Existential Quantifiers

As noted by Huang (1982) and R. Cheng (1984) among others, wh-words in Mandarin Chinese can be used as polarity items in affective contexts. I follow Ladusaw (1979) in assuming that a polarity item is an existential quantifier. (2) gives a list of wh-words and the equivalent polarity/existential reading.

(2) (Huang's 108, p. 241)³

| examples | as question words | as quantifiers |
|----------|--------------------|------------------------------|
| shei | 'who' | 'anybody' |
| sheme | 'what' | 'anything' |
| na | 'which' | 'any' |
| heshi | 'when' | 'any time' |
| nali | 'where' | 'any place' |
| zeme | 'how' | 'any way' |
| weisheme | 'why' | 'any reason' |
| A-not-A | 'whether A or not' | 'no matter whether A or not' |

Wh-words are interpreted as existential quantifiers either optionally or obligatorily in the following contexts: under the scope of negation, in yes-no questions (including A-not-A questions) and conditionals:⁴

- (3) ni xiang chi sheme ma (= Huang's 112, p. 243)
you want eat what Q_{YN}
'Would you like to eat anything?'
*For what thing such that you will eat it or not?'
(4) ni xiang-bu-xiang chi sheme (= Huang's 113, p. 243)
you want-not-want eat what
'Would you like to eat anything?'
*Which of eating or not eating will you do to what?'
(5) ta bu xiang chi sheme (= Huang's 109, p. 242)
he not want eat what
a. 'He didn't want to eat anything.'
b. 'What didn't he want to eat?'

As shown in (3) and (4), wh-words are obligatorily interpreted as existential quantifiers in yes-no questions. In contrast, in sentences with negation, a wh-word can be interpreted either as an existential quantifier or as an

3 It should be noted that the list in (2) includes the wh-demonstrative *na* 'which', and wh-adjuncts *zeme* 'how' and *weisheme* 'why'. However, a wh-phrase with *na* 'which' cannot be interpreted as an existential quantifier, as we can see in (i):

(i) *hufei hui mai na-yi-ben-shu ma
Hufei will buy which-one-CL-book Q_{YN}
'Will Hufei buy any book?'

Similarly, wh-adjuncts *zeme* 'how' and *weisheme* 'why' cannot be interpreted as an existential quantifier either. See Li (1992) for examples.

4 See Klima (1964) for a discussion on affective environments. For ease of exposition, I use negation and yes-no questions in this discussion. It should be noted that conditionals work the same way. See Huang (1982) and R. Cheng (1984) for examples of conditionals and wh-words.

interrogative word, as shown in (5).

In addition, as Huang (1982) points out, subjects cannot be interpreted as existential quantifiers, as shown in (6) and (7).⁵

- (6) **shei xiang chi pingguo ma?* (= Huang's 115, p. 244)

who want eat apple Q

'Does anyone want to eat apples?'

- (7) **shei xiang-bu-xiang chi pingguo?*

who want-not-want eat apples

'Does anyone want to eat apples or not?'

Huang (1982) maintains that subjects in (6) and (7) cannot be interpreted as existential quantifiers because they are not in the scope of an affected element. I will discuss examples such as (6) and (7) in detail later.

2.3. Wh-words as Universal Quantifiers

Besides being able to be interpreted as interrogative and existential quantifiers, wh-words can also be interpreted as universal quantifiers when they occur with the adverb *dou* 'all', as shown in (8) and (9).⁶

- (8) *botong sheme dou chi*

Botong what all eat

'As for Botong, he eats everything.'

5 See Li (1992) for different judgements. In Li (1992), sentences like (6) are in fact grammatical.

6 The object NP *sheme* 'what' in (8) is not in the object position. (8) consists of an aboutness topic, *Botong*, and a typical topic *sheme* 'what'. See Lee (1986), Chiu (1990) and Cheng (1991) among others for detailed discussions of the element *dou* 'all'.

- (9) shei dou kan-guo zhe-ben-shu
who all read-ASP this-CL-book
'Everyone has read this book.'

In (8), the wh-word *sheme* 'what' can only be interpreted as *everything* and similarly, *shei* 'who' in (9) can only be interpreted as *everyone*.

In sum, wh-words in Mandarin Chinese can be interpreted as interrogative words, existential quantifiers or universal quantifiers. I will propose below that wh-words in Mandarin Chinese are indefinite NPs as well as polarity items. I will also argue that there are different binders which determine different quantificational force of the wh-words.

3. Wh-words as Indefinites

Based on the data above, it appears that wh-words in Mandarin Chinese can have different quantificational force: interrogative, existential and universal. They are thus similar to wh-words in Japanese. Nishigauchi (1986, 1990) shows that the quantificational force of wh-words in Japanese varies according to the affix that is attached to the wh-word or to the sentence containing the wh-word, as shown in (10):

- (10) a. Dare-ga ki-masu-*ka*
who N come-Q
'Who's coming?'
- b. Dare-ga ki-te *mo*, boku-wa aw-a-nai
who-N come Q I-T meet-not
'For all x, if x comes, I would not meet (x).'

- c. Dare-*ka*-kara henna tegami-ga todoi-ta
 who from strange letter-N arrived
 ‘A strange letter came from somebody.’

As shown in (10a)-(10c), the wh-word *dare* ‘who’ can be interpreted as interrogative, universal or existential. It is interpreted as an interrogative when there is a sentential *-ka* particle; a universal when there is *-mo* and existential when there is a non-sentential *-ka*.

Assuming Heim’s (1982) theory of indefinite NP, Nishigauchi argues that Japanese wh-words are like indefinite NPs in that they do not have inherent quantificational force. Their quantificational force is determined by different binders. I will now briefly review Heim’s proposal, as well as Diesing’s modification of Heim’s theory.

3.1. Heim's Theory of Indefinites

Following Lewis (1975), Heim (1982) argues that indefinites do not have inherent quantificational force. Instead, their quantificational force is determined by other elements with inherent quantificational force including adverbs of quantification, or an interpretive rule. (11) and (12) illustrate that an indefinite can be interpreted as either an existential or a universal quantifier. (11) and (12) are from Heim (1982).

(11) If a man owns a donkey he always beats it.

(12) Sometimes, if a cat falls from the fifth floor, it survives.

(11) and (12) have the paraphrases in (13) and (14).

(13) For every man and every donkey such that the former owns the latter, he beats it.

(14) Some cats that fall from the fifth floor survive.

In (11), both indefinites are interpreted as universal and in (12), the

indefinite NP *a cat* is interpreted as existential. To account for the different interpretation of indefinites in sentences such as (11) and (12), Heim proposes that an indefinite is a variable in the logical sense and that it "never contributes anything more than this variable-reading to the meaning of the sentences in which it occurs,..." (p. 130). Adverbs of quantification (acting as unselective binders, binding more than one element at a time) such as *always* in (11) and *sometimes* in (12) are the ones that bind the variables and determine their quantificational force (cf. Lewis 1975). For indefinites which appear in sentences without overt binders or invisible necessity operators (see Heim (1982) for details), a rule of "existential closure" applies. Existential closure introduces a non-overt existential quantifier to a sentence. For instance, given a sentence such as (15), though there is no adverb of quantification, the indefinite NP *a cat* still gets interpreted existentially.

(15) Every man saw a cat.

Heim proposes that in sentences such as (15), a rule of existential closure introduces a non-overt existential quantifier. Thus *a cat* can be bound by it and be interpreted existentially. For Heim, the rule of existential closure applies to both the sentence as a whole or the text.

Nishigauchi extends Heim's theory of indefinites to account for the interpretation of wh-words. He proposes that wh-words in Japanese are indefinite NPs; they do not have inherent quantificational force. Their quantificational force is determined by the particles. If a wh-word is suffixed with the particle *-ka*, it is interpreted as existential. If the wh-word is in the scope of the particle *-mo*, then it is interpreted as universal. And lastly, if the sentence is marked with the wh-particle *-ka*, then the wh-words are interpreted as interrogative. Hence, the particles are the binders which

determine the quantificational force of the wh-words.

3.2. Diesing (1990)

Diesing's (1990) theory of indefinite NPs differ from Heim's theory in two ways. First, Diesing (1990) argues that indefinites cannot be treated uniformly. That is, it cannot be maintained that indefinites are uniformly without quantificational force. Instead, she proposes that there are two types of indefinites based on two types of readings. I will discuss these two readings shortly below. Second, she follows Kadmon (1987) among others and assumes that the rule of existential closure only applies to the domain of VP and thus existential closure applies only to the elements inside VP in this theory.⁷ See Diesing (1990) for a detailed discussion of the VP domain.⁸ Thus, an indefinite NP in the Spec of IP, for instance, is not in the scope of the rule of existential closure (I will come back to indefinite subjects in English shortly below).

Let us now turn to the two types of readings associated with indefinite NPs in Diesing's theory. Diesing proposes that one reading is a cardinal reading, which is equivalent to the indefinites that Heim discusses. This is the type that has no inherent quantificational force, and it can be bound by the existential quantifier introduced by existential closure. The other reading

7 Kadmon (1987) notes that if existential closure applies to text, then sentences like (i) will yield the wrong reading: Oscar owns sheep that Otto vaccinates, indicated in (ii):

(i) Oscar owns sheep. Otto vaccinates them.

(ii) $\exists x [\text{sheep}(x) \wedge \text{own}(\text{Oscar}, x) \wedge \text{vaccinate}(\text{Otto}, x)]$

8 For Diesing, the VP-domain corresponds to the 'Nuclear Scope' in Heim's terminology. See both Heim (1982) and Diesing (1990) for the tripartite logical form of a quantified sentence.

is a presuppositional reading, which is equivalent to typical quantifiers and hence is subject to Quantifier Raising (QR). In other words, this is the type that has independent quantificational force. She further correlates these two types of indefinites with Milsark's (1974) semantic distinction between strong and weak quantifiers. The presuppositional reading correlates with strong quantifiers and the cardinal reading correlates with the weak quantifiers.

Consider an example that Diesing uses to argue for the two types of indefinites.

- (16) Every violinist plays some variations.

Diesing argues that given a sentence such as (16), there are three possible readings: (a) the indefinite NP has wide scope presuppositional reading; (b) the indefinite NP has narrow scope presuppositional reading; and (c) the indefinite NP has cardinal reading. (17a)-(17c) indicate each reading:

(17)

Presuppositional readings:

- a. There is a pre-established list of variations and the violinists all play the same variations. (indefinite NP: wide scope)
[some_y [vars. (y)] every_x [violinist (x)] x played y]
- b. There is a pre-established list of variations and each violinist picks a set of variations from this list. (indefinite NP: narrow scope)
[every_x [violinist (x)] some_y [vars. (y)] x played y]

Cardinal reading:

- c. Every violinist plays some variations and they are not from a pre-established list of variations. (indefinite NP: narrow scope)
[every_x [violinist (x)] \exists _y vars. (y) \wedge x played y]

In Diesing's theory, the above readings are derived as follows:

In (17a), the first step is to adjoin the subject NP to IP (by QR) and then the object NP undergoes QR and adjoins to IP. Thus, we have the representation in (17d):

(17) d. [_{IP} some vars._y [_{IP} every violinist_x [_{IP} t_x [_{VP} t_x played t_y]]]]

The reading in (17b) is derived similarly with the object NP raised to IP first. The reading in (17c) differs from (17a) and (17b) in that the indefinite NP does not undergo QR. Recall that according to Diesing, indefinite NPs can be either quantificational or non-quantificational. The readings in (17a) and (17b) are readings associated with a quantificational indefinite. In both cases, the indefinite NP has a presuppositional reading and the difference between (17a) and (17b) is that in the former, the indefinite has wider scope than the universal, while in the latter, the indefinite has narrower scope than the universal. In (17c), the indefinite has a cardinal reading. Thus, it is associated with the non-quantificational use of the indefinite NP. Since the indefinite in (17c) is non-quantificational, it does not undergo QR. The rule of existential closure applies and introduces a non-overt existential quantifier which in turn binds the indefinite NP; the latter receives existential force from the existential quantifier.

3.3. Wh-words as Polarity Items

Now we can turn to Mandarin Chinese wh-words. As we have seen, wh-words in Mandarin Chinese are similar to wh-words in Japanese we have seen earlier in that they can be interpreted in three different ways. They can be interrogative words, existential quantifiers and universal quantifiers. From the discussion above on indefinites, it is clear that the behavior of wh-words in Mandarin Chinese is similar to indefinites. Let us consider now how wh-words in Mandarin are similar and different from wh-words in Japanese.

Let us first summarize the data in Mandarin as follows:

- (18) a. $Q_{wh} \dots wh$ (interrogative reading)
 b. $Q_{yes/no} \dots wh$ (polarity/existential reading)
 c. $Neg \dots wh$ (interrogative or polarity/existential reading)
 d. $wh \dots dou$ (universal reading)

The interpretation of a *wh*-word varies depending on another element in the sentence. The elements which can determine the reading of a *wh*-word are: a *wh*-particle (*ne* or its null counterpart), a yes-no particle (or A-not-A question), a negative marker and *dou* 'the universal marker'. There are no affixes on the *wh*-words. The *wh*-particle is associated with the interrogative reading of the *wh*-words; the yes-no particle and negation are associated with the existential reading while *dou* is associated with the universal reading.

Consider first the existential reading. The environments in which this reading arises fall within the standard polarity environments. The contrast shown in (19a) and (19b) illustrates that the *wh*-words are polarity items needing a trigger (i.e. they need to be licensed by a polarity trigger).

- (19) a. *botong kan-wan-le yi-ben wuxia-xiaoshuo*
 Botong read-finish-ASP one-CL Kungfu-novel
 'Botong finished reading a Kungfu novel.'
 b. *botong kan-wan-le sheme*
 Botong read-finish-ASP what
 'What did Botong finish reading?'
 '*Botong finished reading something.'

(19a) shows that an indefinite NP can appear in the object position and it can be interpreted as existential by being bound by existential-closure. In contrast, an existential reading of the *wh*-words is not possible when a *wh*-word appears without a negative marker or a yes-no question morpheme, as

in (19b). In (19b), only an interrogative reading is possible.

Comparing (19a) and (19b), it is clear that wh-words are not simply indefinites. It is clear that they differ from indefinites in that they always need to have triggers (e.g. yes-no markers or negation). In other words, they are polarity items. Since they are similar to indefinites in that they lack inherent quantificational force, the question which arises is what contributes quantificational force to the wh-words when they are interpreted as existential quantifiers? Given that the domain of the rule of existential closure is VP, the source of existential force can be due to the rule of existential closure. Thus, when a wh-word is interpreted as an existential, the yes-no particle or negation serves as a trigger and existential closure as the binder.⁹ In this analysis, a wh-word in Mandarin Chinese, being a polarity item and an indefinite NP, requires both a trigger (to license it as a polarity item) and a binder (to determine the quantificational force). (20a) and (21a) show examples of wh-words with the yes-no particle *ma* and the negative

9 A question which arises here is why the yes-no marker or negation cannot be the binder for wh-words. Note if the yes-no marker or negation marker serves as binders, the scope of the wh-words will be the same as the yes-no marker or the negation. Take (i) as an example. (i) has a universal quantifier, negation and an indefinite.

(i) Everyone didn't buy a book.

(a) It is not the case that everyone bought a book.

(b) No one bought a book.

Now consider the existential reading of 'a book'. Taking the cardinal reading, the indefinite will be bound by the existential binder that existential closure introduces. However, if negation serves as a binder (e.g. no x, such that x....), then the indefinite 'a book' should have the scope that the negation marker has. But this is simply not the case. This is the same with yes-no questions. Hence, it appears that yes-no markers and negation markers simply cannot serve as binders. It is unclear why they are different from markers for wh-questions, which can serve as binders.

marker. (20b) and (21b) show how they are interpreted.¹⁰

- (20) a. *jialuo mai-le sheme ma*
 Jialuo buy-ASP what Q
 ‘Did Jialuo buy anything?’
- b. $Q_{\text{yes/no}}$ $[jialuo_x]$ $\exists y$ (y a thing) [x bought y]
- (21) a. *jialuo mei-you mai sheme*
 Jialuo not-have buy what
 ‘Jialuo did not buy anything.’
- b. $\neg [[jialuo_x]$ $\exists y$ (y a thing) [x bought y]]

Note that the existential reading of wh-words do not come from an overt binder such as *-ka* in Japanese.

Now consider the interrogative reading. As mentioned earlier, the wh-particle *ne* in Mandarin Chinese is used optionally and when the overt wh-particle *ne* is not present, there is a non-overt one present. Following Nishigauchi’s analysis of the interrogative reading, I propose that in cases where the wh-words are interpreted as interrogative, the wh-particle (overt or null) serves as the binder and contributes interrogative force to the wh-words. Thus, the wh-particle (overt or null) in Mandarin Chinese is similar to the wh-particle *-ka* in Japanese. The question which arises here is if wh-words are polarity items, is there a trigger in wh-questions? I suggest here that the wh-particle is both a trigger and a binder for the wh-words. That is to say, given the wh-particle, there is no need to have another trigger. Furthermore, the wh-particle is an unselective binder, just like the Japanese wh-particle *-ka*. It can bind more than one wh-word at a time, as (22) shows:

10 Here, I do not indicate how a yes-no question is in fact interpreted. I keep the yes-no Q-morpheme so that it is clear what the trigger of the wh-word is. See Karttunen (1977) among others for how yes-no questions should be interpreted.

- (22) *shei mai-le sheme (ne)*
 who buy-ASP what Q_{WH}
 'Who bought what?'

In (22), both *shei* 'who' and *sheme* 'what' are interpreted as interrogative words.

Recall that when a wh-word appears under the scope of negation, it can be interpreted either as a polarity item or as an interrogative word (if there is no overt wh-particle). This can be accounted for based on the analysis proposed here. Since a wh-word is a polarity item, the negative marker can be the trigger with existential closure binding the wh-word and thus we have an existential reading. On the other hand, the presence of a negative marker does not preclude the presence of a null wh-particle, thus it is also possible to have a null wh-particle as the trigger. Since a wh-particle is both a trigger and a binder, a wh-word in a negative sentence can also be interpreted as an interrogative word. Consider the contrast exhibited between (23) and (22) (repeated below):

- (22) *shei mai-le sheme (ne)*
 who buy-ASP what Q_{WH}
 'Who bought what?'
- (23) *shei bu xiang mai sheme (ne)*
 who not-want buy what
- a. 'Who didn't want to buy what?'
 - b. 'Who didn't want to buy anything?'

In (22), both wh-words have to be interpreted as interrogative. But in (23), it is possible for the second wh-word to be interpreted as an existential/

polarity quantifier.¹¹ The lack of ambiguity in (22) may look surprising at first. If the *wh*-particle is a trigger (for polarity items), why can't the *wh*-particle act as the trigger for the *wh*-words while the existential closure binds the *wh*-word (and therefore contributes existential force to the *wh*-word)? Given the contrast between (22) and (23), it appears that when the *wh*-particle is the trigger for a *wh*-word, it also serves as the binder of that *wh*-word. On the other hand, if it is not the trigger of a *wh*-word, existential-closure can bind the *wh*-word. Thus, a *wh*-particle is always a binder for the *wh*-words it licenses as a polarity item. This can be derived from the Principle of economy of derivation (Chomsky 1989). Consider the situation in which the particle is both the trigger and a binder, then the presence of a *wh*-particle is sufficient for polarity licensing and for determining the quantificational force of the *wh*-word. On the other hand, if the *wh*-particle is present but existential closure introduces a binder, it means that the rule of existential closure applies. Assuming that applying the rule of existential closure is on a par with Move α , then the derivation in which existential closure applies is more costly than the one which involves only the *wh*-particle. Hence, the rule of existential closure applies only when no other binder is available. In other words, the rule of existential closure applies only as a last resort.¹²

11 An anonymous reviewer notes that (27) can only be an echo question. However, this is not the case. My judgement and other speakers that I consulted with show two readings, as indicated.

12 A anonymous reviewer notes that if the lack of ambiguity in (26) is explained by the Last Resort Principle, then for examples such as (24), the yes-no marker *ma* should also be used both as a binder and as a trigger since it is more costly to have *ma* as the trigger and existential closure as the binder. However, it should be noted that since *ma* and negation cannot be binders due to their particular properties (see footnote 9), the Last Resort Principle will not preclude a

Lastly, since wh-words in Mandarin Chinese are polarity items, the adverb *dou* ‘all’ which contributes universal quantification to wh-words has to be both a trigger and a binder also because there is no other trigger in the sentence when *dou* binds a wh-word. Hence, *dou* is similar to the wh-particle in being able to license the wh-words as a polarity item and in determining their quantificational force.

To summarize, wh-words in Mandarin Chinese do not have any inherent quantificational force. In this aspect, they are like indefinites. However, they always need to have a trigger. Thus, they are not simply indefinites. They are polarity items.¹³

4. Indefinites in Mandarin Chinese

Let us now turn to the reason why subject wh-words cannot be interpreted as polarity items, as Huang (1982) points out. Sentences (6) and (7) are repeated below.¹⁴

- (6) **shei xiang chi pingguo ma?* (= Huang’s 115, p. 244)
 who want eat apple Q
 ‘Does anyone want to eat apples?’

derivation in which the yes-no marker is the trigger and existential closure is the binder.

- 13 One question which arises given this analysis is whether wh-words in Mandarin still undergo LF wh-movement or not. See Reinhart (1990) and Cheng (1991) for arguments that in-situ wh-words still need to undergo wh-movement at LF to be interpreted properly.
- 14 An anonymous reviewer notes that there are contexts which allow indefinite subjects. However, it should be noted that in certain contexts, an indefinite subject is really an embedded subject in certain respects. So given the account here, some indefinite subjects can indeed be bound by existential closure introduced to an upper VP, as long as the relationship is local.

(7) **shei xiang-bu-xiang chi pingguo?*

who want-not-want eat apples

'Does anyone want to eat apples or not?'

Huang (1982) claims that subject wh-words are not in the scope of a polarity licenser. However, following Tang, T.C. (1989), I assume that question particles such as *ma* and *ne* are generated in C⁰. Both the subject and the object of the sentence should be in the scope of the question particles. The same applies to the A-not-A question in (7), assuming that the A-not-A operator is in either Spec of CP or C⁰ at LF (see Huang 1989).

Recall that a polarity reading is an existential reading. The generalization here thus is: subjects cannot have an existential reading even when there is a trigger. This is reminiscent of the fact that subjects in Mandarin Chinese cannot be indefinite (Li and Thompson 1981, Duanmu 1988). I will now turn to subjects in Mandarin Chinese and propose an account of why indefinite subjects are not allowed in Mandarin Chinese. This proposal in turn explains why subject wh-words cannot have a polarity/existential reading.

4.1. Indefinite Subjects

Li and Thompson (1981) among others have claimed that Mandarin Chinese subjects are topics. In particular, an indefinite NP cannot appear in the subject position. An unmarked NP (i.e. an NP without a numeral marker) is interpreted as generic. This is shown in (24) and (25).

- (24) a. *nei-ge-ren lai-le*
that-CL-person come-ASP
'That person came.'

- b. *yi-ge-ren lai-le
one-CL-person come-ASP

‘A person came.’

- c. you yi-ge-ren lai-le
have one-CL-person come-ASP

‘A person came/there came a person.’

- (25) gou xihuan chi dan

dog like eat egg

‘Dogs like to eat eggs.’

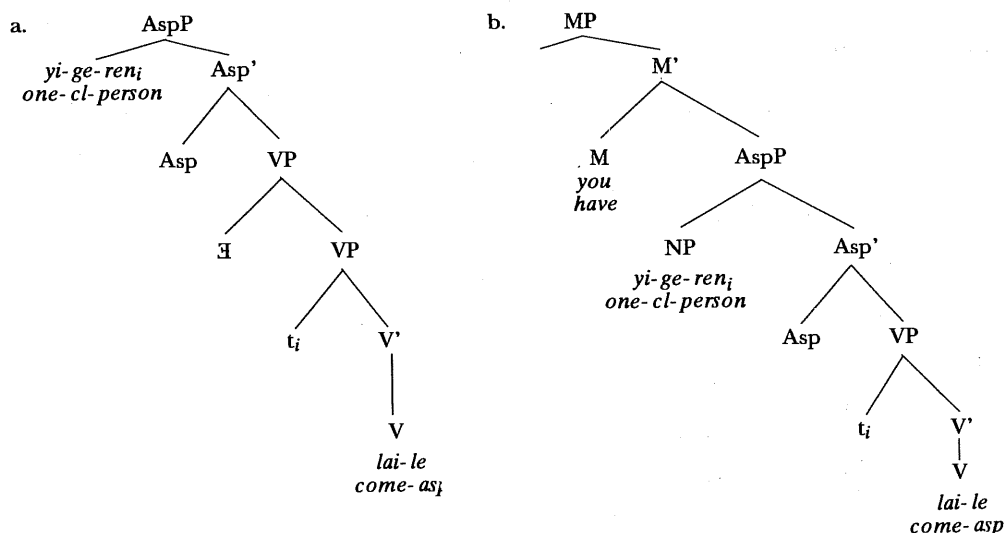
(24b) shows that an indefinite NP cannot be in the subject position. (24c) shows that the indefinite subject is allowed if *you* ‘have’ is present (I will come back to (24c) shortly below). In (25), we can assume, following Wilkinson (1986) that there is a generic operator which binds the NP and thus the subject NP in (25) is interpreted as a generic NP.

Now why can’t there be an indefinite subject in Mandarin Chinese? Recall that Diesing (1990) claims that there are two types of indefinite NPs: one is non-quantificational and one is quantificational. The former can be bound by existential-closure while the latter can undergo QR. Further, Diesing argues that existential-closure applies only in the domain of VP. Elements which are outside of VP cannot be bound by existential-closure. Assuming this analysis of existential closure, I propose that indefinites in Mandarin Chinese are never quantificational. Thus, an indefinite NP in Mandarin Chinese can never undergo QR. The only way for an indefinite to be interpreted in Mandarin Chinese is to be bound by existential-closure or other overt binders. However, if an indefinite appears in the subject position (outside of VP), it cannot be bound by existential closure since the latter is mapped onto VP. Thus, the ungrammaticality of (24b) follows.

- c. you yi-ge-ren lai-le
 have one-CL-person come-ASP
 'A person came/there came a person.'

I suggest that in (24c), *you* 'have' is comparable to an existential quantifier. It is the binder for the indefinite subject. I follow Huang (1988) in assuming that *you* is a modal which takes an IP (=AspP, in the structure of Mandarin Chinese that I am assuming,) as its complement.¹⁶ Consider the structure of (24b) and (24c) below:

(26)



Following Cheng (1989), Huang (1990) and Tang C.-C. (1990), I assume that a subject NP in Mandarin is base-generated in Spec of VP and then raised to Spec of AspP.¹⁷ Given (26a), if lowering of the subject at LF does

16 I differ from Huang in that I assume the modal *you* 'have' to be generated as a modal head while Huang assumes that it is generated as INFL.

17 See Fukui and Speas (1985), Kitagawa (1985), Kuroda (1989) and Koopman and Sportiche (1988) among others for discussions of the VP-internal subject hypothesis.

not take place, the existential closure cannot bind the indefinite NP. (26b) is the structure of (24c). The modal *you* 'have' heads a modal phrase and it selects an AspP.^{18, 19} Given that (24c) is grammatical, the indefinite subject in the sentence receives existential quantificational force. I suggest that the force is contributed by the modal *you* 'have' which is equivalent to an existential closure. In addition, I propose that the availability of sentences such as (24c) precludes lowering of subject NPs in Mandarin Chinese. The lowering of subject NPs is ruled out by the Economy of Derivation: generating a structure such as (24c) with a modal is costless (just as generating any sentence), in contrast with lowering of the subject at LF. Note that the lowering of the indefinite subject, if it were to take place, is to get into the scope of existential closure, thereby receiving existential force. The presence of modal *you* 'have' serves the same purpose, i.e. the indefinite subject can receive existential force from the modal *you*.

In short, indefinite subjects in Mandarin Chinese cannot lower at LF to

-
- 18 One might argue that *you* is in fact an Aspect and it selects a VP. This is however not possible because elements which normally occur between the subject and the VP still appear between the subject and the VP in sentences such as (28c). (i) and (ii) illustrate this.

- (i) *you yi-ge ren manmande xie-le yi-fong xin*
have one-CL person slowly write-ASP one-CL letter
'There is a person who wrote a letter slowly.'
- (ii) *you yi-ge ren ti wo mai-le yi-ben shu*
have one-CL person for me buy-ASP one-CL book
'There is a person who bought a book for me.'

Adverbs such as *manmande* 'slowly' and PP's such as *ti wo* 'for me' appear adjoined to the VP. Hence, given sentences such as (i) and (ii), it is clear that the indefinite subject in these cases cannot be in Spec of VP.

- 19 Some modals like *you* can appear with verbs which has aspectual markings while some modals cannot. See Tang C.-C. (1990) for a discussion of the difference between epistemic and deontic modals in Mandarin.

Spec of VP and therefore they are not generated under the modal *you* 'have'. They cannot be interpreted, due to the lack of quantificational force.

4.2. Subject Wh-words

Assuming the analysis of indefinites in Mandarin Chinese given above, the impossibility of interpreting subject wh-words as polarity/existential quantifiers follows. As we have seen earlier, wh-words in Mandarin Chinese do not have inherent quantificational force. Thus, they always need a binder. Now consider wh-words appearing in the subject position. A wh-particle can bind a subject wh-word; it is thus legitimate to have a subject wh-word interpreted as interrogative. *Dou* 'all' can also bind a subject because *dou* can serve as a trigger and a binder, as we have seen. Thus, subject wh-words can be interpreted as universal. Can subject wh-words be interpreted as existential? The answer is no because (a) wh-words in Mandarin Chinese are like indefinite NPs; they do not have inherent quantificational force; (b) assuming that indefinite NPs in Mandarin Chinese cannot undergo QR, wh-words in Mandarin Chinese also will not undergo QR, and (c) existential closure applies to the VP domain and lowering of the subject NP to VP is not possible in Mandarin Chinese. Thus subject wh-words cannot be bound by existential-closure.

Hence, even though there are triggers in sentences such as (6) and (7) (in yes-no questions), subject wh-words cannot be interpreted. Thus subject wh-words cannot have a polarity/existential reading.

(Accepted for publication 19 November 1992)

REFERENCES

- Aoun, J. and A. Li (1993) "Wh-elements in-situ: syntax of LF?," *Linguistic Inquiry* 24:2, 199-238.
- Chao, Y.-R. (1968) *A Grammar of Spoken Chinese*. University of California Press, Berkeley and Los Angeles.
- Cheng, L. L.-S. (1989) "Aspectual licensing of pro," ms., MIT.
- Cheng, L. L.-S. (1991) *On the Typology of Wh-Questions*. PhD Dissertation, MIT.
- Cheng, R. (1984) "Chinese question forms and their meanings," *Journal of Chinese Linguistics* 12:1, 86-145.
- Chiu, B. (1990) "A case of quantifier floating in Mandarin Chinese," presented in Northeast Conference on Chinese Linguistics 1990.
- Chomsky, N. (1989) "Some notes on economy of derivation and representation," *MIT Working Papers in Linguistics*, Vol. 10, *Functional Heads and Clause Structure*, (eds) I. Laka and A. Mahajan.
- Diesing, M. (1990) *The Syntactic Roots of Semantic Partition*. PhD Dissertation, University of Massachusetts, Amherst.
- Duanmu, S. (1988) "The lack of scope ambiguity in Chinese," ms., MIT.
- Fukui, N. and M. Speas (1985) "Specifiers and Projection," in Naoki Fukui, Tova R. Rappoport, and Elizabeth Sagey (eds), *MIT Working Papers in Linguistics* Vol. 8, MIT.
- Heim, I. (1982) *The Semantics of Definite and Indefinite Noun Phrases*. PhD Dissertation, University of Massachusetts, Amherst.
- Huang, C.-T. J. (1982) *Logical Relations in Chinese and the Theory of Grammar*. PhD Dissertation, MIT.

- Huang, C.-T. J. (1989) "Shuo 'shi' he 'you': jiantan zhongwen de dongci fenlei (A discussion of 'be' and 'have': with verb classification in Chinese)," ms., Cornell University.
- Huang, C.-T. J. (1989) "Modularity and explanation: the case of Chinese A-not-A questions," in Chan, M. and T. Ernst (eds), *Proceedings of the Third Ohio State University Conference on Chinese Linguistics*, Indiana University Linguistic Club Publications.
- Huang, C.-T. J. (1990) "Reconstruction and the structure of VP: some theoretical consequences," *NELS* 21.
- Kadmon, N. (1987) *On Unique and Non-Unique Reference and Asymmetric Quantification*. PhD Dissertation, University of Massachusetts, Amherst.
- Karttunen, L. (1977) "Syntax and semantics of questions," *Linguistics and Philosophy* 1, 3-44.
- Kitagawa, Y. (1986) *Subjects in Japanese and English*. PhD Dissertation, University of Massachusetts, Amherst.
- Klima, E. (1964) "Negation in English," in J. Fodor and J. Katz (eds), *The Structure of Language*, Prentice Hall, Englewood, N.J.
- Koopman, H. and D. Sportiche (1988) "Subjects," ms., UCLA.
- Kuroda, S.-Y. (1988) "Whether we agree or not: a comparative syntax of English and Japanese," to appear in *Linguisticae Investigationes* 12.
- Ladusaw, W. (1979) *Polarity Sensitivity as Inherent Scope Relations*. PhD Dissertation, University of Texas at Austin.
- Law, S.-P. (1990) *The Syntax and Phonology of Cantonese Sentence-final Particles*. PhD Dissertation, Boston University.
- Lee, T. (1986) *Studies on Quantification in Chinese*. PhD Dissertation, University of California, Los Angeles.

- Lewis, D. (1975) "Adverbs of quantification," in E. Keenan (ed.), *Formal Semantics of Natural Language*. Cambridge University Press.
- Li, A. (1992) "Indefinite Wh in Mandarin Chinese," *Journal of East Asian Linguistics*. 1.2.
- Li, C. and S. A. Thompson (1981) *Mandarin Chinese: A Functional Reference Grammar*. University of California Press, Berkeley.
- Milsark, G. (1974) *Existential Sentences in English*. PhD Dissertation, MIT.
- Nishigauchi, T. (1986) *Quantification in Syntax*. PhD Dissertation, UMass.
- Nishigauchi, T. (1990) *Quantification in the Theory of Grammar*. Kluwer Academic Publishers.
- Reinhart, T. (1990) "Interpreting wh-in-situ," ms.
- Reuland, E. (1988) "Indefinite subjects," *NELS* 18, 375-394.
- Tang, C.-C. J. (1990) *Chinese Phrase Structure and the Extended X'-Theory*. PhD Dissertation, Cornell University.
- Tang, T.-C. C. (1989) *Studies on Chinese Morphology and Syntax: 2*, Student Book Co., Taipei.
- Wilkinson, K. (1986) "Generic indefinite NPs," ms., University of Massachusetts, Amherst.

Conditions on the Distribution of Postverbal Duration and Frequency Phrases in Chinese Revisited*

Chih-Chen Jane Tang

Academia Sinica

With respect to duration and frequency phrases in Chinese, two observations have been given in the literature: (a) they cannot co-occur postverbally with direct objects, and (b) their syntactic behavior parallels that of descriptive and resultative expressions. The purposes of this paper are, on the one hand, to show that neither observation mentioned above is correct, and, on the other hand, to present certain conditions governing the postverbal occurrence of duration and frequency phrases with direct objects. These restrictions include Carlson's (1978) conditions on the activity reading of the verb, Huang's (1982) General Scope Principle, conditions on the interaction between phrase structure and the rule Reconstruction α , the pragmatic principle of 'From Old to New', conditions on the co-occurrence of duration and frequency phrases with various verb types, etc. Under these restrictions, the word order difference between English and Chinese may be properly explained in the distribution of postverbal objects and duration, frequency phrases. Our proposed analysis of postverbal duration and frequency phrases also indicates that Chinese lacks the LF lowering of indefinite non-specific object NPs.

0. Introduction

The study of duration and frequency phrases in natural languages has

* For the discussion of some of the issues addressed in this paper, we are grateful to Y.-H. Audrey Li, Jo-wang Lin, Waltraud Paul, Lisa L.-S. Cheng, C.-T. James Huang, Ting-chi Tang and one reviewer.

been one of the major interests of linguists. One important topic about duration and frequency phrases in Chinese has to do with descriptive and resultative expressions. In the literature, Chinese duration and frequency phrases as well as descriptive and resultative expressions have been all treated as complements. The ill-formedness of sentences like (1)-(4) below has thus been assumed to fall under certain identical principles and constraints.

- (1) *ta kan-le shu liang-ge xiaoshi.
he read-LE book two-CL hour
- (2) *ta mai-le cai yi-ci.
he buy-LE vegetable one-CL
- (3) *wo xie zi de hen man.
I write character DE very slow
- (4) *ni da qiu de hen lei.
you play ball DE very tired

However, does the syntactic behavior of duration and frequency phrases really parallel that of descriptive and resultative expressions?

Another major issue is concerned with the postverbal distribution of duration and frequency phrases in Chinese. In particular, can they, like the English data in (5) show, co-occur postverbally with direct objects?

- (5) a. He read books for two hours/three times.
- b. He read a book for two hours/three times.
- c. He read that book for two hours/three times.

Also, do they exhibit the same word order as the English examples?

This paper attempts to answer the above-mentioned questions by studying the morphological, syntactic and semantic structure of Chinese duration and frequency phrases. Section 1 points out that duration and frequency phrases are morphologically and syntactically different from

descriptive and resultative expressions. Morphologically speaking, duration and frequency phrases do not contain the bound morpheme *de*, but descriptive and resultative expressions do. With respect to the syntactic structure, duration and frequency phrases may be projected as adjuncts, whereas descriptive and resultative expressions cannot. We show in the discussion that these two morphological and syntactic differences may properly account for their distinct co-occurrence and distributional behavior. In section 2, we are devoted to scope relations between direct objects and duration, frequency phrases. It is illustrated that while, like their English counterparts in (5), Chinese duration and frequency phrases may co-occur postverbally with direct objects, the ordering between direct objects and duration, frequency phrases in Chinese is different from that in English. This difference in word order may be attributed to a difference between English and Chinese in phrase structure. Section 3 presents certain other conditions governing the postverbal co-occurrence of Chinese direct objects and duration, frequency phrases. In section 4, we conclude this paper by giving some consequences of our analysis with respect to Larson's (1988) Principle of Argument Realization, Huang's (1982) Phrase Structure Constraint and Li's (1985, 1990) case requirements on postverbal elements.

1. Duration and Frequency Phrases as Adjuncts

1.1 Adjuncts vs. Complements

We have mentioned previously that in Chinese duration and frequency phrases have been analyzed as complements on a par with descriptive and resultative expressions. An analysis along this line, however, fails to explain the grammaticality contrast as demonstrated in the following sentences, to be

compared with (1)-(4):

- (6) a. ta zhao-le nei-ge ren yi-ge xiawu/liang-ci.¹
he look-for-LE that-CL man one-CL afternoon two-CL
He looked for that man for the whole afternoon/twice.
- b. ta zhao-le yi-ge xiawu/liang-ci nei-ge ren.
he look-for-LE one-CL afternoon two-CL that-CL man²
He looked for that man for the whole afternoon/twice.
- (7) a. *ta xie nei-ge zi de hen kuai.
he write that-CL character DE very fast
- b. *ta xie de hen kuai nei-ge zi.
he write DE very fast that-CL character
- (8) a. *ta da nei-ge xuesheng de hen tong.
he beat that-CL student DE very painful
- b. *ta da de hen tong nei-ge xuesheng.
he beat DE very painful that-CL student

The above data suggest that while duration and frequency phrases may co-occur postverbally with direct objects definite in reference, descriptive and resultative expressions cannot. Note further that grammatical cases such as (6) also indicate that one should not attribute the ill-formedness of sentences like (1)-(2) and that of sentences like (3)-(4) to the same principles and conditions.

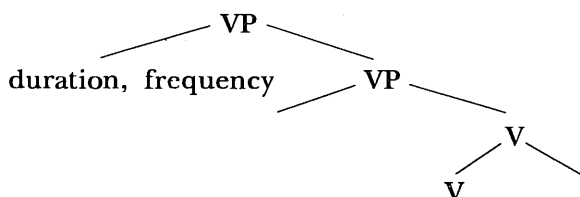
1 See Liu (1987) and Tang (1990) for discussion of syntactic differences between cases like (6a) and those with the duration and frequency phrase as the complement of the verb *you* 'have'.

2 Note that the element following the duration and frequency phrase can be a sentential complement, as shown in (i) below:

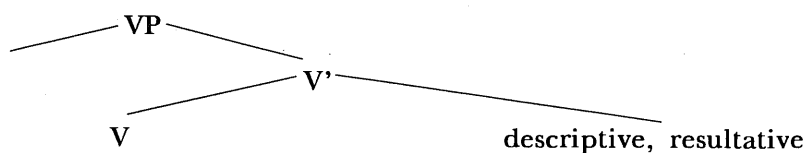
(i) ta yijing shuo-guo liang-ci [ni bu hui lai].
he already say-GUO two-CL you not will come
He mentioned two times that you would not come.

Recently, Bowers (1988) and Larson (1988) both proposed that direct objects may be projected in the SPEC of VP and that the verb may be moved via head-movement to a higher empty Pr(edicate)/V(erb) node. Following these two assumptions, Tang (1990) assigned the structures (9) and (10) to duration, frequency phrases and descriptive, resultative expressions, respectively:

(9)



(10)



Consider first the structure (9). In (9) duration and frequency phrases are projected under the recursive VP as adjuncts; after the operation of Verb-movement, examples like *wo zhao-le yi-ge xiawu/liang-ci nei-ge ren* are derived. We may also get cases with duration and frequency phrases following direct objects, by assuming with Larson (1988) that oblique expressions like duration and frequency adjuncts may be generated under the minimal V'.³ In the structure (10), on the other hand, descriptive and resultative expressions are projected under the minimal V' as complements. This postulation then correctly predicts that descriptive and resultative expressions

3 For discussion of case-assignment to direct objects and duration, frequency phrases, see Tang (1990, 1993a).

cannot appear under the recursive VP, as shown in the ill-formed b sentence of (7) and (8).⁴ Moreover, Tang (1990) claimed that the *de* morpheme associated with descriptive and resultative expressions needs to be attached to the verb at PF under the adjacency condition, thereby ruling out ungrammatical sentences like (7a) and (8a).

By resorting to the different generation of adjuncts and the idiosyncratic bound property of the morpheme *de*, structures like (9) and (10) may thus explain in a principled way the well-formedness contrasts found in cases like (6)-(8).⁵

1.2 Some Further Evidence

In addition to the above-given co-occurrence and distributional differences between duration, frequency phrases and descriptive, resultative expressions, our VP-adjunct approach to postverbal duration and frequency phrases may also capture the following two observations. The first observation is that duration and frequency phrases may occur with more than one postverbal elements. Sentences like (11) and (12) are of this sort:

(11) wo ji-le san-ci ni-de shu gei Zhangsan.

I send-LE three-CL you-DE book to Zhangsan

I sent your books to Zhangsan three times.

4 Tang (1990) pointed out that, unlike duration and frequency adjuncts, complements do not allow the considered distributional variation:

(i) a. ta gaosu wo ni-de fenshu.

he tell I you-DE grade

He told me your grade.

b. *ta gaosu ni-de fenshu wo.

he tell you-DE grade I

5 The reason that descriptive and resultative expressions cannot be projected as VP-adjuncts may be attributed to the assumption that V-*de* can be analyzed as a compound verb taking a clause as its complement.

(12) ta gaosu-guo wo hao ji-ci ni-de zhuzhi.

he tell-GUO I many several-CL you-DE address

He told me your address several times.

Assuming with Larson (1988) and Aoun & Li (1993), respectively, that in the dative construction (11) and the double object construction (12) the NP's *ni-de shu* and *ni-de zhuzhi* are located in the SPEC of VP, it follows naturally from (9) that examples like (11) and (12) are well-formed.⁶

6 Note that if the frequency phrases in (11) and (12) are projected under the recursive V', the resulting sentences seem to become unacceptable:

(i) *wo ji-le ni-de shu san-ci gei Zhangsan.

I send-LE you-DE book three-CL to Zhangsan

(ii) *ta gaosu-guo hao ji-ci nei-ge ren ni-de zhuzhi.

he tell-GUO many several-CL that-CL man you-DE address

This fact seems to indicate that duration and frequency phrases may not be projected as V'-adjuncts (cf. Tang (1990)). In her Mahajan (1990)-type of analysis of some of the data discussed here, Kung (1992) also treats duration and frequency phrases as VP-adjuncts.

Note also that the ungrammaticality of cases like (iiib) and (ivc) suggests that duration and frequency phrases are blockers to the incorporation of *zhu* 'live' / *gun* 'roll' and *zai* 'at' / *dao* 'to':

(iii) a. *ta zhu le zai Taipei.

he live LE at Taipei

b. *ta zhu san-nian zai Taipei.

he live three-CL at Taipei

c. ta zhu-le san-nian Taipei.

he Live-LE three-CL Taipei

He lived at Taipei for three years.

(iv) a. *qiu gun-le dao chuangxia.

ball roll-LE to bed-below

b. qiu gun-dao-le chuangxia.

ball roll-to-LE bed-below

The ball rolled to the below of the bed.

c. *qiu gun san-ci dao chuangxia.

ball roll three-CL to bed-below

The second observation is that, as pointed out in Tang (1990), duration and frequency phrases do not behave as a constituent with direct objects, as opposed to numeral-classifier phrases modifying head nouns:

- (13) a. ta du-le san-ci ni-de xin.
he read-LE three-CL you-DE letter
He read your letter three times.
- b. *ta du-le ni-de san-ci xin.
he read-LE you-DE three-CL letter
- (13)' a. ta du-le san-feng ni-de xin.
he read-LE three-CL you-DE letter
He read three of your letters.
- b. ta du-le ni-de san-feng xin.
he read-LE you-DE three-CL letter
He read your three letters.
- (14) a. wo ma-le nei-ge ren yi-ge xiaoshi.
I scold-LE that-CL man one-CL hour
I scolded that man for an hour.
- b. *nei-ge ren yi-ge xiaoshi bei wo ma-le.
that-CL man one-CL hour BEI I scold-LE
- c. nei-ge ren bei wo ma-le yi-ge xiaoshi.
that-CL man BEI I scold-LE one-CL hour
That man was scolded by me for an hour.
- (15) a. ta qu-guo liang-ci wo-de jia.
he go-GUO two-CL I-DE home
He went to my house twice.
- b. *liang-ci wo-de jia, ta qu-guo.
two-CL I-DE home he go-GUO

c. wo-de jia, ta qu-guo liang-ci.

I-DE home he go-GUO two-CL

(lit) My house, he went to twice.

The above distinction in grammaticality between (13) and (13)' as well as between (14b), (15b) and (14c), (15c) indicates two important things. One thing is that duration and frequency phrases are not contained in direct object NP's. Another thing is that duration and frequency phrases cannot move together with direct objects. The first observation is already reflected in our postulated structure (9). It can be easily seen from (9) that object NP's located in the SPEC of VP do not dominate duration and frequency phrases generated under the recursive VP. However, something more needs to be said as to why direct objects and duration, frequency phrases cannot move as a constituent by their dominating VP node. According to Huang (1990) and Rizzi (1990), a trace left by head-movement cannot undergo reconstruction at LF to meet the conjunctive version of the ECP, which requires a non-pronominal empty category be antecedent- and head-governed. In (9), the dominating VP node contains a trace resulting from the operation of Verb-movement, to which LF reconstruction is not applicable; consequently, direct objects and duration, frequency phrases cannot form a movable constituent.⁷

7 However, there are cases where direct objects seem to form with duration and frequency phrases a constituent. Examine, for instance, the following grammatical sentences, the first two of which are from Ma (1986):

(i) a. san-tian *shu* kan de wo toufennaozhang.

three-CL book read DE I headache

b. san-tian *rou* chi de wo dou ni le.

three-CL meat eat DE I all sick LE

(ii) ta lian yi-tian *shu* dou bu ken kan.

he even one-CL book all not willing read

(lit) He is not willing to read even one-hour's book.

2. Scope Relations

2.1 Activity vs. Non-activity Interpretation

Having studied the structure of postverbal duration and frequency

The well-formed sentences (ia-b) and (ii) differ from the ill-formed ones (14b), (15b) in that the former contain a bare NP, but the latter do not. In view of this distinction, we posit that, by analogy with numeral-classifier-noun sequences like *san-ben shu* 'three books', duration/frequency phrase-NP sequences may also be reanalyzed as a single phrase, by which the trace of the verb becomes invisible to the ECP. This claim about the relation between reanalysis and the ECP has also been made in Aoun & Li (1993).

A reanalysis approach to cases like (i) may be supported by the syntactic behavior of the modifying marker *de*. Tang (1991) pointed out that certain numeral-classifier sequences in Chinese may optionally take the bound morpheme *de* when they are adjacent to an overt head noun:

- (iii) a. *ta mai-le san-ben (de) shu.*
 he buy-LE three-CL DE book
 He bought three books.
- b. *shu, ta mai-le san-ben *(de).*
 book he buy-LE three-CL DE
 As for books, he bought three.

In contrast, modifying expressions like AP's and relative clauses must co-occur with *de*:

- (iv) a. *ta mai-le youqu *(de) shu.*
 he buy-LE interesting DE book
 He bought interesting books.
- b. *shu, ta mai-le youqu *(de).*
 book he buy-LE interesting DE
 (lit) As for books, he bought interesting ones.
- (v) a. *ta mai-le ni xie *(de) shu.*
 he buy-LE you write DE book
 He bought books that you wrote.
- b. *shu, ta mai-le ni xie *(de).*
 book he buy-LE you write DE
 (lit) As for books, he bought those that you wrote.

Based on the distinction on the presence of *de* between (iii) and (iv)-(v), Tang (1991) suggested that *de* in (iv)-(v) is base-generated at D-S, whereas *de* in (iii) is inserted by analogy at PF.

phrases in Chinese, we may now turn to the second issue concerning the ordering between direct objects and duration, frequency phrases. Before going into the relevant Chinese data, let us consider more the English examples in (5), repeated below as (16):

- (16) a. He read books for two hours/three times.
 b. He read a book for two hours/three times.
 c. He read that book for two hours/three times.

As discussed in Carlson (1978), (16a) has an activity reading, whereas (16b-c) do not. In the activity reading, the object NP is interpreted as indefinite non-specific (non-referential); on the other hand, in the non-activity reading, the object NP is definite or indefinite specific (referential). In his analysis of cases like (16a), Carlson claimed that the bare plural object NP *books* cannot have wider scope than the *for* time adverbial *for two hours*, which, according

Like (iii), duration and frequency phrases preceding direct objects may take *de* only when they are adjacent to one another:

- (vi) a. ta kan-le san-tian/ci (de) shu.
 he read-LE three-CL CL DE book
 He read books for three days/three times.
 b. shu, ta kan-le san-tian/ci (*de).
 book he read-LE three-CL CL DE
 (lit) Books, he read for three hours/three times.
 (vii) a. ta mai-le yi-ci (de) cai, danshi wo mai-le liang-ci (de) cai.
 he buy-LE one-CL DE vegetable but I buy-LE two-CL DE vegetable
 He went to the market once, but I went to the market twice.
 b. ta mai-le yi-ci (de) cai, danshi wo mai-le liang-ci (*de).
 he buy-LE one-CL DE vegetable but I buy-LE two-CL DE
 He went to the market once, but I went to the market twice.

Note also that the insertion of *de* does not seem to be allowed when the object is not a bare NP:

- (viii) ta kan-le san-tian (*de) ni-de shu.
 he read-LE three-CL DE you-DE book
 He read your book for three days.

to Dowty (1972), involves universal quantification over a given range of points of time.⁸

2.2 Chinese vs. English

With the view that in the activity reading a bare plural object NP in English must have a narrow-scope interpretation over a duration and frequency expression, examine again the ungrammatical Chinese sentences (1)-(2), in which duration and frequency phrases follow direct bare NP's. In these sentences, the direct bare NP's *shu* and *cai*, like the *books* in (16a), are non-referential. However, while (16a) is well-formed, (1)-(2) are not, though in each instance the non-referential direct object precedes the duration and frequency expression. To get the activity reading under consideration, in Chinese the duration and frequency phrase needs to precede the non-referential direct object:

- (17) ta kan-le liang-ge xiaoshi shu.⁹

he read-LE two-CL hour book

He read books for two hours.

- (18) ta mai-le yi-ci cai.

he buy-LE one-CL vegetable

He went to the market once.

Why is it that, with respect to the activity interpretation, Chinese and English exhibit a rather different ordering between direct objects and duration, frequency expressions? We propose that this distinction may be

8 In Paris (1988), she also analyzed Chinese duration phrases as universal quantifiers in the relevant sense.

9 Alternatively, as proposed in Huang (1991), in cases like (17) and (18) the duration and frequency phrases may also be analyzed as occurring in a gerundive construction. See also Tang (1991) for discussion of such an approach.

ascribed to their difference in phrase structure. Huang (1982) argued for a General Scope Principle as given below:

(19) General Scope Principle

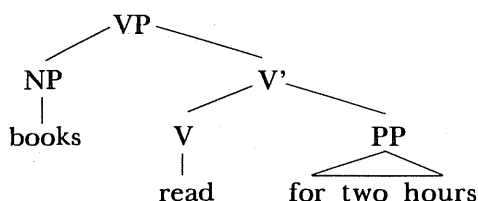
Where α and β are both scope-bearing elements,

if α c-commands β at S-S, then α also c-commands β at LF.

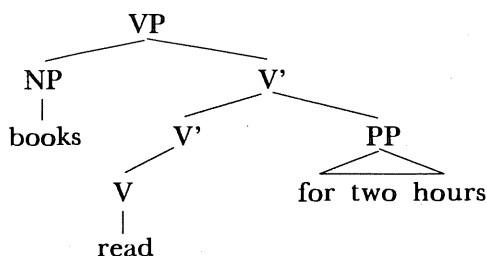
The General Scope Principle (19) says that the c-command relation between two scope-bearing elements remains the same at S-S and LF. In other words, if α c-commands β at S-S, then α has wider scope than β at LF. This condition coupled with the posited structure (9) may then explain why Chinese sentences like (1) and (2) are ungrammatical, whereas those like (17) and (18) are not.

With respect to the English sentence (16a), the object bare plural NP and the *for* time adverbial may be of the following five different structures:

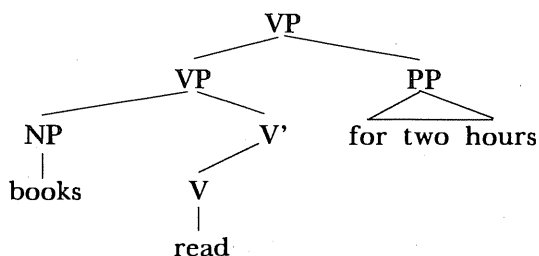
(20) a.



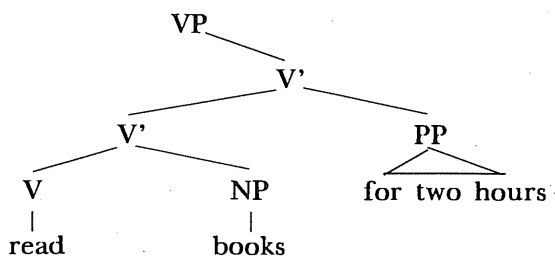
b.



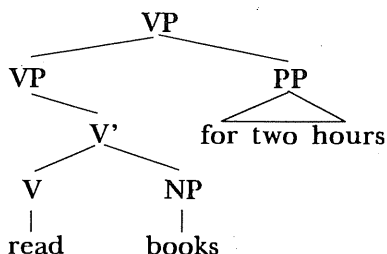
c.



d.



e.



If (16a) has a structure as in (20c-e), then no problems are raised for the General Scope Principle (19), because *for two hours* c-commands *books*. If (20a-b) are the right structures, in which *books* c-commands *for two hours*, they also pose no problems for (19). As, in addition to the General Scope Principle (19), Huang (1982) also postulated the rule Reconstruction α , which may vacuously extrapose the sentence-final QNP rightward and Chomsky-adjoin it to IP. The result is that, for instance, in (20a-b) *books* will be c-commanded by *for two hours* at S-S and thus the former will yield

the required narrow-scope interpretation at LF.

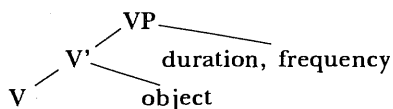
A natural question to ask at this point is why structures like (20a-b) and the newly posited Reconstruction α rule cannot be applied to Chinese so as to save the ill-formed sentences like (1) and (2)? The answer is that, as stated in Huang (1982), the structure of VP and IP in Chinese, not English, is head-final except in the lowest level of projection. Therefore, neither the rule Reconstruction α nor the structures (20b-e) may be permitted in Chinese.¹⁰

So far we have only discussed the word order difference between English and Chinese with respect to the activity reading. A closer examination of the English sentences (16b-c) and the Chinese sentences (6a-b) points out another ordering difference between these two languages. In Chinese, duration and frequency phrases may co-occur postverbally with direct objects specific in reference, in addition to definite direct objects as given in (6a-b).

- (21) a. ta zhao-le yi-ge xuesheng yi-ge xiaowu/liang-ci.
 he look-for-LE one-CL student one-CL afternoon two-CL
 He looked for a particular student for the whole
 afternoon/twice.

10 Liu (1987) also analyzed cases like (1) and (2) in terms of quantification. She, however, adopted Lee's (1986) Condition on Scope Interpretation, in which scope relations at S-S and LF are determined by the notions of command and precedence. In addition, she proposed the structure as in (i) for such sentences:

(i)



As just pointed out, this structure not only does not conform to the phrase structure of Chinese, but also is unable to capture the well-formedness contrast between the Chinese examples (1)-(2) and the English example (16a).

- b. ta zhao-le yi-ge xiaowu/liang-ci yi-ge xuesheng.
he look-for-LE one-CL afternoon two-CL one-CL student
He looked for a particular student for the whole
afternoon/twice.

While English duration and frequency expressions may also co-occur postverbally with referential objects, the former generally follow the latter unless the so-called Heavy NP Shift applies.¹¹ Recall that our approach to Chinese descriptive and resultative expressions has assumed that they are complements and hence cannot be projected under the recursive VP. If this analysis is on the right track, it seems that English duration and frequency expressions may be best analyzed as complements, a view that is also argued for in Larson (1988) (cf. note (13)). This structure then correctly predicts that the distributional variation of English postverbal duration and frequency expressions may result from extraposition under certain pragmatic conditions (cf. Larson (1988)).¹²

Summarizing, we have shown in this section that Chinese differs from English in the ordering of postverbal direct objects and duration, frequency expressions. Such a difference may in fact be attributed to a difference between them in phrase structure. No arbitrary parameters need to be imposed on the scope requirement on the activity reading in question, the

11 We assume with Liu (1987) that referential expressions are not scope-bearing elements and hence the General Scope Principle (19) is not applicable to cases like (6a-b) and (21). Also, like the rule Reconstruction α , the rule Heavy NP Shift cannot be applied to Chinese.

12 Unlike Chinese, English generally may have its adjuncts projected to the right and/or left of the head. Thus, an alternative is to hypothesize that while in English duration and frequency expressions may act as adjuncts, they are projected rightward only.

General Scope Principle and the rule Reconstruction α .¹³

2.3 LF Lowering of Indefinite (Non-specific) Object NP's

So far we have focused our discussion on the semantic and syntactic behavior of duration and frequency phrases interacting with postverbal direct objects. Direct objects are not restricted to a postverbal position, however, as the following examples (22c-e) illustrate:

- (22) a. ta ma-le nei-ge ren liang-ci.
he scold-LE that-CL man two-CL
He scolded that man twice.
- b. ta ma-le liang-ci nei-ge ren.
he scold-LE two-CL that-CL man
He scolded that man twice.
- c. ta ba nei-ge ren ma-le liang-ci.
he BA that-CL man scold-LE two-CL
He scolded that man twice.
- d. nei-ge ren bei ta ma-le liang-ci.
that-CL man BEI he scold-LE two-CL
That man was scolded by him twice.
- e. nei-ge ren, ta ma-le liang-ci.
that-CL man he scold-LE two-CL
That man, he scolded twice.

With this possibility of preposing the direct object in question, now let us

13 Alternatively, the issue in question may also be approached in terms of the Minimal Binding Requirement and the Scope Principle proposed in Aoun & Li (1993). Under this analysis, English phrase structures like (20c-e) seem to be preferred, all of which are however disallowed in Chinese. Hence, the observed word order difference between English and Chinese.

compare cases like (23) with those like (24):

- (23) a. *ta mai-le chezi liang-ci.
 he sell-LE car two-CL
 b. ta mai-le liang-ci chezi.
 he sell-LE two-CL car
 He sold cars twice:
- (24) a. ta ba chezi mai-le liang-ci.
 he BA car sell-LE two-CL
 He sold a particular car twice.
 b. chezi bei ta mai-le liang-ci.
 car BEI he sell-LE two-CL
 A particular car was sold by him twice.
 c. chezi, ta mai-le liang-ci.
 car he sell-LE two-CL
 (lit) A particular car, he sold twice.

Two points are worth mentioning here. First, in both (24b-c) and (23a) the NP *chezi* c-commands the frequency phrase *liang-ci*; yet, the former are well-formed, but the latter is not. Second, in the grammatical (24b-c) the preposed NP *chezi* is referential, whereas in the ungrammatical (23a) the non-preposed NP *chezi* is non-referential. Consequently, only cases like (23a) violates the General Scope Principle (19).

The observed grammaticality contrast between (23a) and (24a-c) seems to indicate that Chinese does not permit LF lowering of non-specific object NP's. In Heim (1982), non-specific indefinites are variables, which are unselectively bound by abstract operators such as Existential Closure. Diesing (1990, 1992) proposed further that the domain of Existential Closure is restricted to VP. Movement at S-S, however, may or may not affect the

interpretation of the non-specific object. For languages like German, for instance, indefinite objects may be moved out of VP and adjoined to IP by scrambling. As pointed out in Diesing (1990, 1992), while the interpretation of the unscrambled indefinite object is the Existential Closure interpretation, that of the scrambled indefinite object is not. This interpretational contrast is demonstrated in (25) below.

- (25) a. [CP daβ [IP Otto immer [VP Bucher uber Wombats liest]]].
 that Otto always books about wombats reads
 that Otto always reads books about Wombats.
- b. [CP daβ [IP Otto Bucher uber Wombats immer [VP liest]]].
 that Otto books about wombats always reads

Given this distinction in the availability of the Existential Closure interpretation, Diesing claimed that German lacks the LF lowering of indefinite objects.

On the other hand, for languages like English non-specific NP's may be forced to move down to their original positions at LF. In Enc (1991), as an example, she pointed out that some English non-specific NP's are raised at S-S to positions where they have scope over operators, as in (26) and (27):

- (26) A worthless candidate may win the election.
- (27) Some unicorns seem to be approaching.

According to Enc, subjects in (26) and (27) can be non-specific, and when they are interpreted as non-specific, they have narrow scope with respect to *may* and *seem*. To give another example, Diesing (1990, 1992) argued that for individual-level predicates as in (28), the subject is generated in the SPEC of IP, while for stage-level predicates as in (29), the subject is generated within VP and may later move to the SPEC of IP.

(28) Linguists are intelligent.

(29) Firemen are available.

With the availability of LF lowering of indefinite subjects in English, it is explained why only in (29) may the subject NP have the existential reading.

In view of the claims given above, if Chinese parallels languages like English, which may move non-specific objects to their original positions at LF, then cases like (24a-c) should be as ill-formed as those like (23a). This prediction however is not borne out in (24a-c). Thus, we suggest that Chinese is like German in that both languages lack the LF lowering of indefinite non-specific objects.¹⁴

3. Some Other Conditions

We have shown in the previous discussion that the distribution of Chinese postverbal duration and frequency phrases with respect to direct objects is determined jointly by the syntactic structure (9), the semantic requirements on the activity/non-activity reading, the General Scope Principle (19), and the lack of LF lowering of indefinite non-specific objects. In the following, we present three other conditions governing the occurrence of postverbal duration and frequency phrases in Chinese.

14 Note that our account of the grammaticality contrast between cases like (23a) and those like (24a-c) remains intact even if the empty object positions in (24a-c) are represented by *pro*'s rather than traces. Because, according to May (1985) and Diesing (1990), the considered operation of LF lowering is accessible only to traces.

Here, we will not go into the issue why languages like English, but not German and Chinses, allow LF lowering of indefinite NP's. See also Cheng (1990, 1991) for the claim that Chinese does not permit LF lowering of indefinite subject NP's.

First, it has been claimed that definite direct objects may freely co-occur postverbally with duration and frequency phrases. But sentences like (30) and (31), with direct objects in the form of pronouns, do not conform to this prediction.

- (30) a. *wo zhao-le ta yi-ge xiauw.*
I look-for-LE he one-CL afternoon
I looked for him for the whole afternoon.
- b. **wo zhao-le yi-ge xiauw ta.*
I look-for-LE one-CL afternoon he
- (31) a. *ta ma-le wo liang-ci.*
he scold-LE I two-CL
He scolded me twice.
- b. **ta ma-le liang-ci wo.*
he scold-LE two-CL I

To account for the unexpected ill-formedness of (30b) and (31b), we propose that the pragmatic principle of 'From Old To New' plays a role here, which requires the old-information carrying object pronouns *ta* and *wo* not appear in sentence-final position when they are adjacent to duration and frequency phrases.¹⁵

This result is somewhat similar to the well-known English facts about the so-called Particle Movement under the principle of 'From Old To New' as sentences (32) and (33) below demonstrate:

- (32) a. I called that man up.
b. I called up that man.

15 As has been discussed in section 1.1., we have assumed that both (30a), (31a) and (30b), (31b) are base-generated at D-S, thereby all being sensitive to the considered pragmatic/functional condition at LF/PF.

- (33) a. I called him up.
b. *I called up him.

As the 'From Old To New' principle is pragmatic/functional in nature, cases like (30b), (31b) and (33b) may be improved if the information load in question is strengthened. This is exactly what is found in examples such as (34) and (35).

- (34) wo zhao-le yi-ge xiaowu ni, ta he ni-de meimei.
I look-for-LE one-CL afternoon you he and you-DE sister
(lit) I looked for for the whole afternoon you, him and your sister.
(35) I called up him, her and their children.

Second, as the function of duration and frequency phrases is to be predicated of a particular action or state, the verb modified by them cannot be in a form which denotes the uncertainty of the action or state itself. Sentences like (36) and (37), for instance, are violations of this sort:

- (36) *ni deng-bu-deng nei-ge ren yi-ge xiaoshi?¹⁶
you wait-not-wait that-CL man one-CL hour
(37) *ni xian kan (yi) kan san-ci shu.
you first read one read three-CL book

In contrast, cases like (38) and (39) are well-formed:

- (38) ni ke-bu-keyi deng nei-ge ren yi-ge xiaoshi?
you can-not-can wait that-CL man one-CL hour
Can you wait for that man for an hour?
(39) ni xian kan san-ci shu.
you first read three-CL book
(lit) You read books three times first.

16 Ernst (1992) claims that the interaction between adjuncts and A-not-A questions may be resorted to the ECP. See, however, Tang (1993b) for discussion of problems raised for such an account.

Third, the syntactic and semantic properties of verbs themselves also attribute to the well-formedness of cases with duration and frequency phrases (see also Dowty (1979)). It appears that, as the following examples illustrate, achievement verbs cannot take duration phrases, though state, activity and accomplishment verbs can:

- (40) a. *wo kandao-le nei-ge ren san-tian.
I see-arrive-LE that-CL man three-CL
b. ta ai-le zhei-ge ren san-nian.
he love-LE this-CL man three-CL
She loved this man for three years.
c. wo zhao-le ta yi-ge xiawu.
I look-for-LE he one-CL afternoon
I looked for him for the whole afternoon.
d. jingcha guan-le ta san-nian.
police jail-LE he three-CL
The police jailed him for three years.

With respect to frequency phrases, it seems that only state verbs cannot co-occur with them, as exemplified in (41) below:

- (41) a. wo kandao-le nei-ge ren liang-ci.
I see-arrive-LE that-CL man two-CL
I saw that man twice.
b. *wo ai-le zhei-ge ren yi-ci.
I love-LE this-CL man one-CL
c. wo zhao-le ta san-ci.
I look-for-LE he three-CL
I looked for him three times.

- d. jingcha guan-le ta si-ci.
 police jail-LE he four-CL
 The police jailed him four times.

In view of the three conditions discussed above, it should be clear by now that conditions that govern the co-occurrence of postverbal duration and frequency phrases with direct objects in Chinese are in fact very complicated. They include syntactic, semantic and pragmatic/functional constraints, to which all levels of representation (i.e. D-S, S-S, LF and PF) are sensitive.

4. Conclusion

In this paper we have shown that given the VP structure (9), with the duration and frequency phrase projected as VP-adjunct, and the Verb-movement hypothesis proposed in Bowers (1988) and Larson (1988), the distribution of the postverbal duration and frequency phrase in Chinese may be properly explained by certain independently motivated principles and conditions. In addition, on the basis of the difference in head-position, such an analysis may also account for in a principled way the ordering distinction between the postverbal duration, frequency phrase and the direct object for languages like Chinese and those like English.

If our approach to the postverbal duration and frequency phrase is on the right track, it has the following desirable consequences, as pointed out in Tang (1990, 1993a). First of all, it follows from our postulation of the duration and frequency phrase as VP-adjunct and the operation of Verb-movement that in Chinese only adjuncts projected within VP may appear

postverbally.¹⁷ As a result, cases like (42) are ill-formed.¹⁸

- (42) a. *ta da-le ta-de didi henhen-de.
 he beat-LE he-DE brother cruel-cruel-DE
 b. *wo qu ni-de jia mingtian.
 I go you-DE home tomorrow
 c. *ta chi fan zai canting.
 he eat rice at restaurant

Note also that the ungrammaticality of Chinese sentences like (42) clearly indicates that not all adjuncts may be projected as innermost arguments of verbs, a fact that is opposite to what Larson (1988) claimed in terms of the Principle of Argument Realization in accordance with the Thematic Hierarchy.

Secondly, well-formed sentences like (6), where direct objects and duration, frequency phrases co-occur postverbally, have been problematic to Huang's (1982) Phrase Structure Constraint as a PF filter in Chinese, which says that Chinese cannot have the co-occurrence of postverbal adjuncts and direct objects (cf. Huang (1991)). Our posited structure (9) suggests that the Phrase Structure Constraint may be best treated as an S-S constraint derivable from general principles like the condition of binary branching, Verb-movement, the Principle of Argument Realization and the theory of adjunct licensing (see also Huang (1991) for a similar claim).

Finally, like the Phrase Structure Constraint, Li's (1985, 1990)

17 As mentioned before, in Larson's (1988) theory the node VP may be recursive: the verb is first generated under the lowest VP and then moved to the head of the highest VP, which is called in Larson's term an 'empty VP shell' (cf. Bowers (1988)). Here, the VP in question refers to the minimal VP.

18 See Tang (1990, 1993a) for the discussion of a theory of adjunct licensing, by which adjuncts in Chinese may be generated.

thematic-case account of Chinese word order also runs into problems in face of examples like (6). A phrase structure like (9) together with the assumed principles and conditions enables us to capture Chinese word order facts about postverbal constituents without resorting to conditions such as the directionality requirements on θ -role and case assignment in Chinese (see also Huang (1992)).

(Accepted for publication 19 November 1992)

REFERENCES

- Aoun, J. and Y.-H. A. Li. (1993) *Syntax of Scope*, MIT Press.
- Bowers, J. (1988) " A Structural Theory of Predication, " ms., Cornell University.
- Carlson, G. N. (1978) *Reference to Kinds*, PhD dissertation, University of California, Irvine.
- Cheng, L. L.-S. (1991) *On the Typology of Wh-questions*, PhD dissertation, MIT.
- Cheng, L. L.-S. (1991) " Wh-words as Polarity Items, " paper read at IsCCL 2, Academia Sinica.
- Diesing, M. (1990) *The Syntactic Roots of Semantic Partition*, PhD dissertation, University of Massachusetts, Amherst.
- Diesing, M. (1992) " Bare Plural Subjects and the Derivation of Logical Representations, " *Linguistic Inquiry* 23, 353-380.
- Dowty, D. R. (1972) *Studies in the Logic of Verb Aspect and Time Reference in English*, PhD dissertation, University of Texas at Austin.
- Dowty, D. R. (1979) *Word Meaning and Montague Grammar*, D. Reidel Publishing Company.
- Enc, M. (1991) " The Semantics of Specificity, " *Linguistic Inquiry* 1, 1-25.
- Heim, I. (1982) *The Semantics of Definite and Indefinite Noun Phrases*, PhD dissertation, University of Massachusetts, Amherst.
- Huang, C.-T. J. (1982) *Logical Relations in Chinese and the Theory of Grammar*, PhD dissertation, MIT.
- Huang, C.-T. J. (1988) " *ma pao de kuai* and Chinese Phrase Structure, " *Language* 64, 274-311.

- Huang, C.-T. J. (1990) "Reconstruction, the A/A' Distinction, and the Structure of VP," paper read at NACCL2, University of Pennsylvania, Philadelphia.
- Huang, C.-T. J. (1991) "Verb-movement and Some Syntax-semantics mismatches in Chinese," paper read at IsCLL 2, Academia Sinica.
- Huang, C.-T. J. (1992) "More on Chinese Word Order and Parametric Theory," to appear in eds. B. Lust, M. Suner and J. Whitman, *Syntactic Theory and First Language Acquisition: Crosslinguistic Perspectives*, Lawrence Erlbaum Associates, Inc.
- Kung, H.-Y. (1992) "Specificity and NP Postitions in Mandarin Chinese," Paper read at ICCL 1, Singapore.
- Larson, R. (1988) "On Double Object Constructions," *Linguistic Inquiry* 19, 335-391.
- Lee, T. (1986) *Studies on Quantification in Chinese*, PhD dissertation, University of California, Los Angeles.
- Li, Y.-H. A. (1985) *Abstract Case in Chinese*, PhD dissertation, University of Southern California.
- Li, Y.-H. A. (1990) *Order and Constituency in Mandarin Chinese*, Kluwer, Dordrecht.
- Liu, F.-S. (1987) "A Note on Word Order in Chinese," *CLS* 23.
- Ma, Q.-Z. (1986) "dongci houmian shiliangchengfen yu mingci de xianhou cixu" *yuyanxueluncong* 13, 40-56.
- Mahajan, A. (1990) *The A/A-bar Distinction and Movement Theory*, PhD dissertation, MIT.
- May, R. (1985) *Logical Form*, MIT Press.
- Paris, M.-C. (1988) "Durational Complements and Verb Copying in Chinese," *Tsing Hua Journal of Chinese Studies New Series* 2, 423-439.

- Rizz, L. (1990) *Relativized Minimality*, MIT Press.
- Tang, C.-C. J. (1990) *Chinese Phrase Structure and the Extended X'-Theory*, PhD dissertation, Cornell University.
- Tang, C.-C. J. (1991) "Chinese *de* and English 's,'" paper read at the Third International Conference on Chinese Teaching and Linguistics, Taipei; also appears in *BIHP* 63.4, 733-757.
- Tang, C.-C. J. (1993a) "hanyu donghou chengfen de fenbu yu xianzhi," *BIHP* 63.2, 269-300.
- Tang, C.-C. J. (1993b) "Adjunct Licensing and Wh-in-situ in Chinese," paper read at ICCL 2, Paris.

Discourse Explanations for the Choice of *Jiu* and *Cai* in Mandarin Conversation*

Mei-chun Liu

Dept. of Linguistics, University of Colorado

In recent studies of discourse and grammar, linguistic choices are explained as arising from their characteristic discourse functions. Adopting such an approach, this paper looks into the uses of *jiu* and *cai* in Mandarin on the basis of naturally-occurring conversational data. It is suggested that the choice of the two markers is interactionally determined to code distinct 'perspectives' in response to perceived expectations. Occurrences of *jiu* and *cai* are first categorized according to their grammatical roles: while *jiu* has a wider range of uses, the two share three types of adverbial functions: antecedent-consequent linking, temporal linking, and limiting. The basic distinction between *jiu* and *cai* as linking elements is that *jiu* may be used either to report events in dependency relationship, or to counter a temporal/conditional/causal expectation established in prior discourse or evoked by the semantic schema, but *cai* is only used to counter an expectation. When countering an expectation, they mark opposing orientational directions: *jiu* marks an event/state as 'earlier/sooner/easier than expected', while *cai* marks 'later/harder than expected'. Their functional distinctions are further discussed in terms of presuppositionality, propositional status, and degree of focusedness. As limiting particles, *jiu* marks a linguistic element as the selected one out of a larger scope of possibilities, while *cai* signals scalar contrast between the asserted and the expected value. In their limiting uses, they mark a contrastive focus in distinct ways: *jiu* singles one entity out of a generally assumed set, while *cai* signals the marked end

* I would like to thank Dr. Barbara Fox, Dr. Susana Cumming, and Dr. Yung-O Biq for their helpful comments on an earlier version of this paper.

in a scalar contrast. Their semantic diversity is considered to be emerging from the combination of their discourse functions with various co-occurring constituents. The two markers are further contrasted in terms of pragmatic markedness and distributional compatibility with some sentence-final particles. This study aims to show that an understanding of the discourse-level distinctions of the two markers is crucial for explaining their respective grammatical behavior.

1. Introduction

1.1 Goal of the paper

The semantic diversity of the two adverbs *jiu* and *cai* has drawn substantial attention in the study of Chinese adverbs. They are of particular linguistic interest for the following reasons: 1) *Jiu* and *cai* share the same grammatical functions, as either an adverbial modifier or a clause-linking element (cf. Li and Thompson 1981); 2) Although relatively fixed in their syntactic position, they both display a wide range of uses in combination with various kinds of constituents; 3) Most importantly, the two markers encode *contrastive* perspectives in some of their uses, but are *synonymous* in other uses (cf. Biq 1988, Paris 1987). In order to understand how *jiu* and *cai* are actually used in contemporary Mandarin Chinese, this paper examines instances of the two markers in naturally-occurring conversations and characterizes their respective discourse functions. It aims to show that discourse-level explanations based on the whole communicative situation may give a full account of the multiple senses of *jiu* and *cai* as well as the systematic contrast between them.

1.2 Scope and framework

Earlier studies of *jiu* and *cai* were preoccupied with the goal of

differentiating their 'meanings' (cf. Li and Thompson 1981, Ma and Chang 1980, and Alleton 1972). Recent work is more concerned about the potential correlation of their different senses. In search of a unified explanation for the semantic diversity, researchers have turned to various contextual or pragmatic notions that go beyond sentence boundaries. Tsao (1976) examines the role of 'expectation', and claims that *cai* carries an implication pertaining to the speaker's anticipation. Paris (1987) extends the notion of 'relational values' to a contrastive study of *jiu* and *cai*, and suggests that *jiu* signals increasing/positive relations, while *cai* signals decreasing/negative relations. Biq (1988) further contrasts the two markers in terms of scalar implicature and conversational/conventional principles in the Gricean paradigm, and concludes that *jiu* marks a simple focus, while *cai* marks a denying-expectation focus.

The fact that all the above work, in pursuing a systematic explanation, makes use of non-structural notions which involve the role of the language user indicates that a principled analysis of *jiu* and *cai* requires incorporation of discourse-pragmatic considerations. However, the discourse-pragmatic considerations should not be understood only in the Gricean sense, it actually represents, as Givon (1989) points out, various facets of the speaker's attitude, perspective, or point of view that are relevant to how the propositional contents are to be integrated into coherent communication. While working in the right direction, most previous works are based on elicited data lacking for real communicative contexts, which is in some sense incompatible with their ultimate goal.

Adopting a discourse approach, this paper follows the theoretical view in recent studies of discourse and grammar that linguistic choices are shaped by various interactional and cognitive constraints inherent in the communicative

situation (Cf. Chafe 1976, 1987, Du Bois 1987, Givon 1979, 1989, Fox 1987, Fox and Thompson 1990). I will show in this paper that the choice of *jiu* or *cai* has to do with how people attend to each other's state of knowledge to manage the flow of information. I first introduce in Section 2 the grammatical roles of the two markers and their distribution in the database. Section 3 focuses on their functional distinctions as linking elements. Section 4 deals with their respective discourse functions as quantifying/limiting elements. Also included is a discussion of the functional convergence of the two uses of *jiu*, and the 'counter-expectational' function of *cai*. Section 5 concerns the distributional correlations of the two markers with other discourse elements. Finally, section 6 summarizes the theoretical implications that can be drawn from this work.

1.3 The database

The data used in this paper come from three naturally-occurring conversations, each about 90 minutes in length. These conversations were recorded and transcribed in the U.S. within the past 4 years. All participants are native speakers of Mandarin, who were born and raised in Taiwan or Mainland China. Their respective stays in the U.S. before the recording were relatively short, ranging from one month to four years. Among the three conversations, one involves 3 graduate students from Mainland China, all in their mid-30s. The other two took place when a student couple from Taiwan had their parents visiting them. Instances of *jiu* and *cai* were culled from the transcripts of the conversations¹ for the analysis in this paper.

1 I am grateful to my fellow student, Zengzeng Zhang for sharing her transcripts with me. Two sets of the data were transcribed by myself.

2. Distribution of *Jiu* and *Cai* in the Database

This study generally takes *jiu* and *cai* as adverbial markers and recognizes two major grammatical functions for them. As adverbial markers, they may serve either as a linking element that relate two adjacent propositions, or as a limiting element that quantifies/modifies a following element.² In addition to adverbial uses, *jiu*, but not *cai*, may serve other grammatical functions.³ In the database, the total number of occurrences of adverbial *jiu* by far exceeds that of *cai*, as shown below:

2 Biq (1988) treats both *jiu* and *cai* as quantifying adverbs that place four types of focus: parametric, limiting, emphatic, and temporal. The parametric use corresponds to the linking function discussed in this paper. Biq's limiting and emphatic usages are grouped under the limiting function. And her temporal usage is taken as a sub-type of the temporal linking function.

3 *Jiu* may also be used as a concessive conditional marker, as in (1) below, a preposition as in (2), or even a verb as in (3):

(1) *jiushi yao zai kai... ye bushi banfa.*

Even-if will again operate also NEG-BE solution

'Even if she undergoes operation again, it is still not the solution.'

(2) *jiu quan guo lai shuo, gongye de*

JIU entire country to speak industry POSS

fazhan shi bu pingheng-de.

development BE NEG balanced

'Talking ABOUT the entire country, the industrial development is not well-balanced.'

(3) *xianzai shi nin qu jiu tamen, er bushi tamen*

now BE you go JIU them but ENG-BE they

lai jiu ninde xuyao.

come JIU your needs

'Now the situation is that you go to comply with them, but not that they come to attend to your needs.'

- (1) Total number of occurrences of adverbial *jiu* & *cai* in the corpus

| | N |
|------------|-----|
| ----- | |
| <i>jiu</i> | 287 |
| <i>cai</i> | 29 |

The uses of the two markers are discussed in detail below.

2.1 Antecedent-consequent linking

When used as linking devices, *jiu* and *cai* are termed 'backward-linking elements' in Li & Thompson (1981), since they serve to signal the relational dependence of the second clause on the previous one, as in an antecedent-consequent relation. And they always occur with the consequent clause, as shown in (2) and (3):

- (2) *women shi juede chi renjia tai-duo le,*
 we BE feel eat theirs too-much PRF
women jiu shuo women baba mama yao lai,
 we JIU say our father mother will come
women qing nimen chi-fan.
 we invite you eat-meal.
 'We felt that we'd been invited by them too many times;
 therefore, we said: "Our parents are coming, we'd like to invite
 you for dinner."'

 (3) *ba fan chi wan cai keyi xia-lai.*
 BA rice eat finish CAI can get-down
 'You may get down ONLY AFTER you finish your food.'

The above examples illustrate the antecedent-consequent linking function of the two markers. The relationship between the antecedent and consequent may be of any semantic type: temporal, sequential, conditional, purpose, or

causal. Although occupying the same position, *jiu* and *cai* have contrastive interpretations:

- (4) a. *Jiu*: IF A, THEN (as a consequent) B
WHEN
AFTER
BECAUSE
FOR THE PURPOSE OF
- b. *Cai*: ONLY IF A, THEN is B achieved.
WHEN
AFTER
BECAUSE
FOR THE PURPOSE OF

Jiu basically signals a reasoning process where B is considered to be resultative of A. But *cai* circumscribes B with a necessary condition.

2.2 Temporal linking

In the second type of their linking usage, they relate an event/state to a temporal frame, as the *jiu* in (5) and the *cai* in (6):

- (5) *liang-dian duo zhong shi, jingcha jiu*
two-M more o'clock time police JIU
yijing qu nar cha le.
already go there investigate CRS
'The police had already been there to investigate as early as two o'clock.'
- (6) *youdeshihou wo tai lei, jiu shui a,*
sometimes I too tired JIU sleep PRT
liu dian wo cai chuqu.
six o'clock I CAI go-out
'Sometimes, I was too tired, then I would go on sleeping. I wouldn't go out until six o'clock.'

In this temporal linking use, they do not just report the temporal frame of the event, since the unmarked form of temporal coding would simply be the juxtaposition of the event and the time. The use of *jiu* here actually marks the event as happening 'early' or 'soon' by relating it to an earlier-than-expected reference time, and the use of *cai* signals a 'later-than-expected' temporal frame. This temporal linking may also be expressed in terms of temporal sequencing, as in (7) and (8):

- (7) *women yi huilai jiu guoqu.*
 we once return JIU go-over
 'As soon as we come back home, we'll go over (to your place).'
- (8) *meiyou...tamen xian qu Iowa, cai lai zhe.*
 No they first go Iowa CAI come here
 'No,... they went to Iowa first and then came here.'

In (7), *jiu* marks the desired action as immediately following the precedent and being sooner/earlier than expected. In (8), *cai* circumscribes the presumed action with a precedent and thus marks it as 'later-than-expected'. Their temporal linking uses may be interpreted as:

- (9) a. *Jiu:* AS EARLY/SOON AS A, B
 b. *Cai:* AS LATE AS A, B

2.3 Limiting

In addition to the two types of linking functions, they can also be used as sentential particles to *limit*, in an emphatic way, a subsequent constituent:⁴

4 According to Li and Thompson 1981, when used as an emphatic particle, the two markers are usually stressed. However, in real conversation, the stress is not always clear.

- JIU: (10) *qing ren dai, hai bu jiu na*
ask others take-care still NEG JIU that
ji xiaoshi.
several hours
‘Even though she had someone else take care of (the baby),
it was ONLY those several hours.’
- (11) *wo jiu xihuan chang-de.*
I just like long-NOM
‘I JUST like the long ones (sweaters).’
- CAI: (12) *Qishi wo cai chi le yi bao.*
Actually I CAI eat PRF one packet
‘Actually, I ONLY ate one dosage (of medicine).’
- (13) *wo cai mei namo chan ne.*
I CAI NEG that gluttonous PRT
‘I’m NOT THAT gluttonous.’

In the above examples, *jiu* is used to limit the referential/predicational scope of the following element, while *cai* indicates a scalar contrast between the asserted and the presumed⁵ (For detailed discussion, see Section 4 below).

In sum, the frequency of occurrences of adverbial *jiu* and *cai* over different grammatical roles in the corpus can be summarized as follows:

5 In previous studies, (12) and (13) would be considered to be two separate usages of *cai* (cf. Cao 1976, Big 1988). However, I group them together because in both examples, *cai* indicates a scalar contrast between the asserted and the presumed (For detailed discussion, see sec. 4 below).

(14) Distribution of *jiu* and *cai* in the database

| Gram. categories | | <i>JIU</i> | <i>CAI</i> |
|------------------|---------------|------------|------------|
| <hr/> | | | |
| Adverbial | A-C linking | 117 (41%) | 10 (34%) |
| | Temp. linking | 49 (17%) | 6 (21%) |
| | limiting | 121 (42%) | 13 (45%) |
| <hr/> | | | |
| Total | | 287 (100%) | 29 (100%) |

In the following, I will discuss the discourse functional distinction between the two markers with respect to the different grammatical roles.

3. Functional Distinction between *Jiu* and *Cai* as Linking Elements

It has been proposed in previous studies that in their antecedent-consequent linking uses, *jiu* and *cai* mark different logical relations: *jiu* marks the antecedent as a sufficient condition for the actuation of the consequent, while *cai* marks a necessary condition (cf. Cheng 1983, Biq 1988). *Jiu* and *cai* are thus similar to logical operators in this view. However, language use is more than logic operations, and the obvious distributional skewing between the two markers also requires an explanation.

A careful examination of the discourse contexts of the data reveals that, although *jiu* and *cai* may occur in the same range of semantic relations (temporal, sequential, conditional, causal, or purpose), they have a fundamental distributional distinction: *cai* only occurs when an expectation is established and is used to counter that expectation. *Jiu*, on the other hand, may have a neutral event-reporting function besides its use to counter an

expectation. This contrast can be further discussed in terms of the following three aspects: 1) presuppositionality and propositional status of the consequent, 2) degree of focusedness regarding the antecedent, 3) expectational orientations.

3.1 Presupposition and propositional status

In his discussion of the pragmatics of propositional modalities, Givón (1989) suggests that the distinction between affirmative and negative modalities lies in the notion of 'presupposition'. In his view, presupposition is not to be defined in the traditional sense, i.e., in terms of the speaker's belief in the truth of a proposition, but should be treated pragmatically with two distinct senses (1989: 144):

- a) Presupposition is a matter of the speaker's belief about the hearer's state of mind, not about the truth of some proposition;
- b) Presupposition pertains not only to the hearer's strong beliefs, but also to the hearer's weaker beliefs, assumptions or even vague familiarity with a proposition.

In terms of presuppositional strength, affirmative realis assertions are expressed on the background of the hearer's relative ignorance,⁶ while negative-assertions are expressed on a much richer background of expectations (1989: 145). More specifically, negative-assertions are 'typically used in discourse contexts where the corresponding affirmative has either been mentioned, discussed, entertained, contemplated or raised as a possibility' (1989: 144).

6 As discussed in Givón (1984, ch. 7), communication is never carried out on the background of *total* ignorance or lack of presupposition. As any functional domain is scalar in nature, the notions of 'presupposition' or 'counter-expectation' are also contingent upon a continuum.

The linking use of *cai* is similar to negative-assertions in its presuppositional strength. It is typically used in discourse contexts where a temporal/conditional/causal expectation concerning the consequent proposition is mentioned, discussed, entertained, contemplated or raised as a possibility. On the background of such an expectation, *cai*-assertions characterize a different-than-expected demand for the actualization of the proposition. Consider the following utterance from a father denying the possibility for his daughter to be a famous star:

- (15) *wo jue-bushi zhege nuer youdeshi*
 I absolutely-not this daughter have-many
caihua, wo gei ni mosha le, bu shi la.
 talent I to you blot-out PRT, NEG BE PRT
wo shuo ni bushi na kuai liao ma...
 I say you NEG that piece fabric PRT
ni shuo ni xiang qu churentoudi, ni you
 you say you wish go come-forward you have
zhege tiaojian cai xing a.
 this qualification CAI O.K. PRT

'It's not the case that this daughter of mine has talent and I failed to recognize it. That's not the case. I said: you don't have that kind of talent. (lit. You are not that type of fabric.) ... You say that you wish to move forward to be a famous star, but ONLY IF you have the talent can you make it (and apparently you don't).'

Knowing that his daughter wishes to be a famous T.V. star, the father denies the wish by asserting with *cai* a conditional demand the daughter could not fulfill. The daughter's expectation is clearly mentioned in the text and provides a strong presuppositional basis for the *cai*-assertion.

Jiu-assertions, on the other hand, may or may not be presuppositional. When used in contexts where no expectation/familiarity concerning the consequent proposition is assumed, *jiu*-assertions serve to ‘report’ events in an antecedent-consequent relation, on the background of the hearer’s lack of information, as illustrated below:

(16) T: *nei-liang che zai gao-su-gong-lu shang*

that-CL *cai* at highways on

huai le, ba Meng-yan cong che shang

broken CRS BA NAME from car on.

shuai le xia-qu. ...

throw PFV down-go

M: *houlai ne? houlai zenme ban le ne?*

afterwards Q afterwards how handle PFV Q

T: *houlai, tamen chu-shi yihou jiu*

afterwards they have-accident after JIU

mashang ba nei-liang che gei mai le, you

soon BA that-CL car GEI sell PFV again

mai le yi-liang meiguo che.

buy PFV one-CL American *cai*

‘T: That car got stuck on the highways, and Meng-yan was thrown out to the ground....

M: What happened afterwards? What did they do afterwards?

T: After the accident, they sold the car right away and bought another American car.’

The assertion with *jiu* in (16) is not to counter an expectation, but to provide information on the basis of the hearer’s ‘relative ignorance’.

The degree of presuppositionality in the use of *jiu* or *cai* is correlated

with another functional aspect - the information status of the consequent proposition.

Similar to the coding of noun phrases, which is sensitive to the information status of the referent (cf. Chafe 1976, 1987), propositions in discourse may also be characterized in terms of their 'propositional status'.⁷ A proposition may be recently mentioned, thus has a 'given' status, or 'inferable' by a prior schema/frame, or totally 'new'. According to studies on NP information status (Chafe 1976, 1987; and Prince 1981), GIVEN information is usually established through explicit mentioning in the prior discourse; INFERRABLE information is presumed to be any relevant knowledge evoked by the discourse topic or the immediate situational context; NEW information is presumed not to be in the hearer's focal consciousness. If we apply these notions of information status to propositions, then we find that *cai* always occurs with a previously-established consequent proposition, be it GIVEN or INFERRABLE. It is relative to such a GIVEN/INFERRABLE proposition that the speaker asserts with *cai* a chunk of new information that is to be the necessary circumstance. The primary function of *cai* is therefore not to report events, but to *respond* to or *comment* on a background assumption about the actualization of the presupposed event. The GIVEN status of the consequent proposition can be seen clearly in example (15) above.

In (15), the goal of 'coming forward to be a successful TV star' is explicitly mentioned prior to the use of *cai* and is therefore a GIVEN proposition. *Cai*-assertion then serves to counter this expectation by presenting a necessary circumstance. The information status of (15) can be

7 For a discussion of the importance of information flow on grammatical coding, see Chafe 1987, Du Bois 1987, and Fow & Thompson 1990.

represented as:

GIVEN-background expectation: to be successful as a TV star

NEW-asserted condition: got to have talent/qualification

Jiu, on the other hand, does not impose any presuppositional or informational constraint on the part of the consequent proposition. The function of *jiu* as a linking element may be twofold: to characterize a proposition as directly related to some circumstance on a low/zero presuppositional background, or to comment on an expectation. Its use for countering expectation may in turn derive from its temporal linking function, as will be discussed in 3.3 below.

3.2 Degree of focusedness

The use of the two markers can be further analyzed in terms of their coding of focus. As mentioned earlier, both *jiu* and *cai* may contradict a background belief/expectation by asserting an other-than-expected antecedent. This contrastive assertion leads Biq (1988) to suggest that both *jiu* and *cai* are focusing adverbs. Biq further specifies that while *jiu* marks a simple focus, *cai* marks a denying-expectation focus. However, crucial though the term 'focus' is in her analysis, Biq fails to make it clear what a 'focus' is.

In Chafe (1976), the term 'focus' is used to refer to the asserted element in a contrastive sentence. The example of a contrastive sentence he gives is:

(17) RONALD made the hamburgers.

According to Chafe, with *Ronald* being stressed, (17) conveys the message that 'Ronald, as opposed to other possible candidates the addressee might have had in mind, is the right selection for this role' (1976: 33). And the

contrastiveness, as that in (17), involves three factors (1979: 33-34):

- a. an awareness assumed to be shared by the addressee that someone made the hamburgers;
- b. a set of limited possible candidates;
- c. the assertion of which candidate is the correct one. The asserted alternative is the 'focus' of contrast.

In all the counter-expectational uses of *cai* and *jiu*, the consequent propositions are assumed to be familiar to the hearer to varying extent, and thus they constituent the background knowledge required in a contrastive sentence.

With regard to the second requirement - a set of possible candidates in a limited number, the question is: How evident is the speaker's assumption that the hearer entertains or believes in other candidates for the assertion? In some instances of *cai*, there is indeed an overtly marked element that is in contrastive to the asserted antecedent. Consider the following example:

(18) T: ... *ni zhe you jiaodai ma?*

you here have tape Q

M: *sheme-yang-de? wo zhe you zege-yang-de.*

what-kind-NOM I here have this-kind-NOM

T: *zhe-yang de a, zhe-yang shi-bu-shi tai*

this-kind-NOM PRT this-kind BE-NEG-BE too

bao le a?

thin CRT PRT

M: *shemo-yang de jiaodai?*

what-kind NOM tape

T: *jiu nei-zhong xiang da xingli nei-zhong*

JIU that-kind like pack baggage that-kind

kuan-de cai neng zhan-de-zhu.

wide-NOM CAI able stick-well

zhe-yang-de wo juede tai zhai le.

this-kind-NOM I feel too narrow CRS

T: Do you have Scotch tape here?

M: What kind? I have this kind.

T: This kind! Isn't this kind too thin?

M: What kind of tape (do you want)?

T: Just like that kind of wide ones used for fastening baggage.

Only that kind of tape may stick to it. I think this kind is to narrow.'

In (18), there is a clearly coded 'contrast' between 'this kind' and 'that kind' of tape, and only the latter is asserted as the required parameter for the desired result. Here, 'focus' is established through an overt contrast between two candidates for the antecedent.

In some other instances of *cai*, the antecedent might be simply contrasted to an unstated, implicit set of choices:

- (19) K: *ta nei-tian huilai, erduo dui le*
she that-day come-back ear pile PFV
yi-dui de. wo shuo ni zhe erduo
one-pile NOM I say you this ear
shi zenmo la?
BE what/how Q
'*wo jian-fei la, zhenjiu jian-jei!*'
I reduce-fat PRT acupuncture reduce-fat

B: *wo shuo, women jiali mei-you da pangzi*
I say our family NEG-have big fatty
ma! mei da pangzi, qi-shi
PRT NEG big fatty How-could-that-be
xianzai cai jiuding.
now CAI decide

'K: That day when she came home, her ears was stuffed with
some pile of ... I asked: what happened to your ears?
- I'm simply trying to loose weight. I'm on acupuncture
weight-loosing.

B: I said (to her): Our family does not have any big fatties!

There are no fatties and that's not just determined NOW.'

In (19), the temporal antecedent 'now' is asserted against other temporal points in the past. According to speaker B, the fact that there are no fatties in the family is not determined NOW, but long time ago. The 'focus' here seems to be established through an implicit contrast between the asserted and the inferred opposing end along the same domain.

As presuppositions may be established with varying strength, by the same token, the candidate(s) in contrast to the asserted antecedent may be coded with varying explicitness.

The third factor for contrastiveness - the assertion of an alternative - underlines the actual effect of a contrastive sentence. In *cai*-assertions (as well as counter-expectational *jiu* assertions), the antecedent is presumably the focus of contrast.

And note again that while *cai* always marks the antecedent as focused or contrasted, *jiu* may have a neutral use without focus-marking, given its dual linking functions. Focus-marking is inherent in the use of *cai*, but not in the

use of *jiu*. In the database, all 16 instances of linking *cai* assert an antecedent that is contrastive to some other elements, but not all linking *jiu*'s mark a contrastive focus.

3.3 Expectational orientation

Besides their distinctions in propositional status and degree of focusedness, *jiu* and *cai* form an interesting orientational contrast as to the interrelation between the antecedent-consequent sequence. In the presence of a perceived expectation regarding the actualization of a certain event, *jiu* and *cai* represent two contrastive facets of the speaker's perspective. The choices of *jiu* and *cai* are interactionally determined and may both mark 'counter-expectation', but in opposite directions, as outlined below:

- A) In terms of the temporal/sequential relation, *jiu* signals that the lapse between two events, or the temporal frame for a particular event is earlier/sooner/shorter than expected; while *cai* signals that the time is later/longer than expected.⁸
- B) In terms of conditionality, *jiu* signals that the condition required for an event/state is perceived as less demanding, less restricted, or easier to obtain than expected; while *cai* signals that the

8 Although absent in my data base, *jiu* and *cai* be used to code temporal information even when there is no overtly-marked temporal frame, as shown below:

- (1) *wo jiu lai.* 'I'm coming.'
- (2) *wo cai lai.* 'I just got here.'

In (1), the speaker relates a future action to the unmarked speech time and thus characterizes it as sooner than expected. In (2), the speaker's arriving is assumed to have already happened, and by relating it to the more recent 'speech time', *cai* marks it as later than any possible point in the past. These examples can both be viewed as a sub-type of the temporal linking function. See also the analysis of 'the temporal usage' in Biq 1988.

condition is more demanding, more restricted, less straightforward or harder to obtain.

- C) In terms of causality, *jiu* signals that the causal relation between the two events is perceived as more predictable, less surprising than expected, while *cai* signals that the cause/reason is less predictable, more surprising than expected.

Among the three generalizations, the contrast in temporality is probably most obvious, as discussed repeatedly in previous works (e.g. Tsao 1976, Paris 1981, Biq 1988). And according to studies in metaphorization and grammaticalization (Lakoff 1981; Heine, Claudi, & Hunnemeyer 1991), the temporal domain usually provides the basis for the conceptualization of other semantic domains. As mentioned in section 2, the temporal linking uses of the two markers already entails a temporal expectation (earlier/sooner vs. later). Modeled upon the temporal linking use, other expectational coding might be borne out.

Previous studies also make a claim about quantity by suggesting that *jiu* indicates a 'less than expected' amount, while *cai* indicates 'more than expected'. However, in my view, the contrast in quantity actually derives from the contrast in conditionality. As postulated in (B) above, *cai* marks the antecedent as 'more demanding or harder to obtain'. Although 'more demanding' normally implies 'more in quantity', it is not necessarily true. Biq (1988: 92) gives an example of a bargain between a buyer and a seller. Relative to the expected price (\$10), the buyer said:

(20) *wu-kuai qian wo cai mai.*

five-M money I CAI buy

'I will buy it only if it's 5 dollars.'

The amount asserted (\$5) is less than the expected amount (\$10), contrary

to the common claim. This example shows that *cai* does not impose any fixed value on quantity per se. It is 'a more demanding condition' that underlines the use of *cai*.

The contrast in conditionality can be further illustrated with examples (21) and (22) below:

Jiu:(21) *wo zhiyao yi xiao kuai jiu guo le,*
I only-need one/a small piece JIU enough CRS
wo yao ni namo yi da kuai ganma?
I want you/r such one/a big piece Q
'I just need a small piece (of cloth), and it would be enough.
What do I do with such a large piece.'

Cai:(22) *Zhege haiyao qu mai neige deng cai xing ye,*
this also-need go buy that bulb CAI O.K. PRT
zhe zhishi ge zhaozi.
this only CL lamp-shade
'In addition, we need to buy a light bulb and only then will
it work; this is only a lamp shade.'

In (21), *jiu* follows the antecedent *zhiyao yi xiao kuai* 'ONLY need a small piece', which indicates a condition less demanding and easier to satisfy than getting a bigger one.

However, in (22), the use of *cai* relates to the assertion *haiyao* 'more is needed.' In addition to the already-obtained lamp shade, a light bulb is still needed. *Cai* indicates that additional efforts need to be made before the lamp can work.

The functional contrast between *jiu* and *cai* in marking an antecedent can be represented as below:

| | | |
|------|-----------------|-----------------|
| (23) | JIU | CAI |
| | -----> | |
| | earlier | later |
| | less demanding | more demanding |
| | less surprising | more surprising |

Along the separate domains of temporality, conditionality and causality, the use of *jiu* shows a clustering of the less marked/prominent ends of these domains and the use of *cai* a clustering of the more marked ends.

4. Discourse Functions of *Jiu* and *Cai* as Quantifying Particles

In their second grammatical role, i.e., when used as clause-internal particles, *jiu* and *cai* serve to quantify some following constituent in the same clause. In this quantifying use, they are not to signal an inter-clausal relationship, but serve to modify one subsequent constituent. Again, the choice of the two markers involves the interaction of the hearer and the speaker in terms of what is assumed and what is expected. As a quantifying element, the primary function of *jiu* is to mark the asserted element as more 'limited' than the general scope of expectation; the primary function of *cai* is to signal stronger scalar strength opposite to the expected value. Therefore, *cai* functions as a degree intensifier, while *jiu* as a scope quantifier. Their respective functions as quantifying particles are illustrated in the following sections.

4.1 The Scope-limiting function of *jiu*

In the data base, *jiu* occurs with almost all kinds of constituents. Although it renders slightly varied meanings when combined with different constituents, the basic function remains consistent: it marks the focused

element as 'limited' against a larger scope of choices.⁹

When used with a NP, *jiu* signals that the NP is quantitatively limited or contrastive to the majority. It picks one entity out of a set and thus gives rise to the meaning 'only':

- (24) *neige paizi ye hao, jiu [zheige] zuicha.*

that brand also good JIU this worst

'That brand is also good, only this one is the worst.'

- (25) *qita che baogao wan jiu zou le, ... guaibude*

other car report finish then leave PRT no-wonder

ta shuo jiu nimen yi liang che.

he say JIU your one CL car

'All other cars left after they reported (the incident). No wonder he said that there's only your car there.'

When used with locatives, it signals limited spatial scope or distance and marks the location as 'deictically easy to identify':

- (26) *ni zhidao Willard Hall zai na ma?*

you know PLACE at where PRT-Q

jiu [zai fu qian de pangbian].

JIU at pay money NOM side

'Do you know where Willard Hall is? It is just beside the building where we pay our rent.'

When used with a verbal or nominal predicate, *jiu* usually means 'simply' or '(doing) nothing but':

- (27) *wo jiu [zhege dexing], you shemo banfa?*

I JIU this appearance have what means

'I simply look this way, what can I do about it?'

9 In Lu 1984, *jiu* is analyzed as basically having a 'limiting' function.

(28) M: *ta zenmo hui xuan ni de?*

he how would choose you NOM

K: *wo jiu [jushuo] a, jiu [jiang] a...*

I JIU raise-hand PRT JIU speak PRT

'M: How come they picked you?

K: I simply raised my hand; I just spoke out...'

Jiu may also single out an adverbial or adjectival complement:

(29) *jiu [bu xiaoxin] jiu huaiyun le.*

JIU NEG careful then pregnant CRS

'Just mindlessly, she then got pregnant.'

It is interesting to note that in marking a constituent as limited in conceptual scope and easier to identify, *jiu* seems to 'locate' or 'point to' the constituent in the mental space. This might be the reason why *jiu* occurs frequently with deictic expressions such as *zhe* 'this' or *na* 'that'.

Moreover, *jiu* is often combined with *shi* (the copula) in its limiting use. As *shi* may be used in presentative sentences or signal a special affirmation that asserts a statement in the preceding discourse (Li and Thompson 1981, pp. 151-54), *jiu* and *shi* together serve to make an identification or affirmation with strong subjective certainty. *Jiushi* can actually be considered to be a lexicalized whole:

(30) W: *ni haoxiang shuo quo zhe jian shi ma?!*

you seem mention EXP this CL matter PRT

C: *jiushi a!*

JIUSHI PRT

'W: You seem to have mentioned this matter.

C: Yes, exactly!'

- (31) *wo jiu shuo ma, jiushi ren shao de yuangu.*

I JIU said PRT JIUSHI people few NOM reason

'I said exactly (this); it is exactly due to the small number of people.' (I think exactly so.)

4.2 Referential restricting function of *jiu*: When the limiting and linking functions converge

The 'limiting' function of *jiu* is usually associated with some element in its own clause; however, more compelling evidence can be found when we look at clause boundaries. In the following examples, the use of *jiu* (with *shi* 'be' or *shuo* 'say') extends across two clauses, as it serves to introduce an explanatory clause, whose primary function is to 'limit' the interpretational scope of a prior proposition:

- (32) *ta shuo ta jihu duo meiyou shenmo tiezhi le, jiushi*

he say she almost all NEG any iron PFV JIUSHI

pinxue pin de hen yanzhong.

lack-blood lack CSC very serious

'He said that she had almost no iron, which means she has very serious anemia.'

- (33) *Tong Sheng-Nan, ta hai keyi la, jiu shuo ta men zhe*

NAME he still O.K. PRT JIU-SHUO he hide DUR

tou zuo la, ren man qianxu de.

head do PRT person quite modest NOM

'As to Tong Sheng-Nan, he is O.K., I mean, he works hard and quietly, and is pretty modest.'

Furthermore, *jiu* may introduce a clause or a NP (modified by a relative clause or not) that identifies or characterizes the referent of a previously-

mentioned NP. *Jiu* functions like an equative or identifying copula in the sense that 'A IS B', but A and B belong to two separate syntactic units:

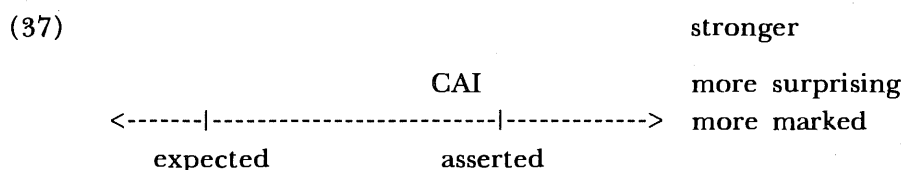
- (34) *[nage shemo Lin a]? ...jiu congqian chu zai women*
 that what PRT JIU before reside at we/our
houmian de.. jiushi gen Xiaodai jiebai jiemei de nage
 back NOM JIUSHI with NAME sworn sister NOM one
 '(What's his name?) That Lin something? just the one who lived
 behind us before, just the one who became a sworn sister of
 Xiaodai.'
- (35) *Peilan hai qu [lingyige jiaohui], jiu nage First Presbyterian*
 NAME also go-to another church JIU that NAME-CHURCH
Church
 'Peilan also goes to another church, the First Presbyterian
 Church.'
- (36) *lingwai hai you [yi qu], jiushi wanquan gongyu,*
 moreover also have one area JIU completely apartments
jiu xiang women yiqian zhu de na zhong.
 JIU like we before reside NOM that kind
 'There's another residential area, which is all apartments, just like
 the type we lived in before.'

In all cases, *jiu* (or *jiushi*) serves to provide the referential/interpretational basis for the preceding NP by identifying or characterizing its referent. It thus limits the referential/interpretational scope of the NP. But on the other hand, *jiu* also serve to signal a referential link between the following NP/ clause and the preceding NP. In this regard, *jiu* is a *linking* device that relates the two entities, both structurally and semantically. Therefore, *jiu* can be viewed as both a linking and limiting element. The two major functions

of *jiu* converge in the above examples as it serves to restrict the referential/interpretational scope of the preceding NP or proposition by connecting it to a following constituent.

4.3 The Scalar-contrasting function of *cai*

When used as a quantifying particle, *cai* is again more restricted in its distribution than *jiu*. In the data base, it only occurs with two types of constituents: measurable NPs (8 instances, 67%), and stative predicates (4 instances, 33%). As mentioned above, *cai* functions as an intensifier to add scalar intensity/strength to the asserted element as opposed to the expected value. It thus always exacts a scalar contrast between the asserted, more surprising end and the assumed, less surprising end. This gives a principled account for the restricted use of *cai* as a limiting particle: it only occurs with linguistic elements that can be scalarly perceived. A measurable NP implicates a quantitative scale, while a stative predicate implicates qualitative degrees. The contrastive function of *cai* can be schematized as below:



When used with a measurable NP (eg. money, time, etc.), *cai* signals a surprisingly low value as opposed to the expected normal amount, thus gives rise to the meaning 'no more than':

(38) *Qishi wo cai chi le [yi bao].*

Actually I CAI eat PFV one CL

'Actually I only ate one packet (of the medicine).'

When used with an adjectival, or nominal predicate, *cai* signals the scalarly stronger end:

(39) *zhege songgei meiguoren, na tamen CAI gaoxing ne.*

this give-to Americans then they CAI happy PRT

'I am sure if we give this to Americans, they would be extremely happy.'¹⁰

(39) was uttered as a response to a comment that the speaker should give something more formal to his advisor. The scalar contrast here is between 'VERY happy' asserted by the speaker and 'not so satisfactory' implied in the previous comment.

When used in making a comment/reply, it signals a contrastive attitude to the called-for response (cf. Tsao 1976):

(40) *che huai le, ren zenmo hui shuai xiaqu*

car break PFV person how will fall down

a, wo CAI bu xin ne.

PRT I CAI NEG believe PRT

'If (their) car broke down, how would they fall down from the car. I DON'T buy your story.'

(41) I: *Taitai, dengxia you dianhua, ni jiu dao*

WIFE later have phone you JIU go

waimian qu jie.

outside to answer

M: *wo cai bu-yao ne, wo yao sui jiao.*

I CAI NEG-want PRT I want sleep

10 When given without the context, this example seems to be ambiguous as to whether *cai* is a linking or limiting element. However, the immediate context (the antecedent being a given proposition, and the consequent being new) clearly indicates that *cai* is NOT a linking element here.

I: Sweet-heart, if there's a phone call, you can go to the
living room to answer it.'

M: I WON'T do it! I want to sleep.'

In (40) and (41), *cai* occurs in the second part of an utterance pair, and marks a non-compliant reaction.

Although playing two different roles at the structural level, the limiting and linking uses of *cai* share a similar function at the discourse level: they both serve to counter an expectation that is previously established.

4.4 Counter-expectation in the use of *cai*

Due to its contrasting function, *cai* is often considered as a negating marker. Tsao (1976) observes correctly that the use of *cai* requires a proper context where an expectation is established. He further specifies that *cai* indicates an emphatic refutation of the expected response. Biq (1988) also concludes that *cai* marks a denying-expectation focus. Their analyses are not incorrect since *cai*, in signaling a scalar contrast with a more surprising value, usually serves to deny the opposite end, and thus indicates a refutation, as in (40) and (41) above. However, their analyses are not complete, since *cai* may also mark a scalar contrast between a stronger point and a weaker point with the same polarity. One can easily imagine a situation like (42) below, where *cai* is used to confirm a previous assertion, while marking it with stronger scalar strength. *Cai* is used here to confirm, not to deny: (Note that *cai* has to be stressed.)

(42) A: *ta haoxiang hen xiaoqi.*
he likely very stingy

B: *dui a, ta CAI xiaoqi ne.*

Right PRT he CAI stingy PRT

'A: He seems to be pretty stingy.

B: Yes, indeed, he's VERY stingy.'

Refutation or denying-expectation is a discourse function that can be achieved by a number of means. The common ground, though, is the speaker's assumption of the hearer's belief in a background expectation, be it vague or strong, affirmative or negative. As long as such an expectation exists, various syntactic devices (lexical or structural) can be used to express a refutation. What is shown in (42) is that negation is not an inherent property of *cai*. As far as the context allows, both *jiu* and *cai* can serve to confirm or to deny an expectation. Given the analysis of *cai* in this paper, we can only say that *cai* is indeed used to 'counter' an expectation, but not necessarily to deny or negate it.

Another problem in analyzing the 'counter-expectation' function of *cai* is related to the marking of quantity. Previous studies have noted repeatedly that when *cai* is used with a measurement NP, it implies the amount/time is LESS/EARLIER than expected, while when it follows a measurement clause, it implies the amount/time is MORE/LATER than expected.¹¹ Consider the following:

(43) a. *cai san-dian.* (LIMITING)

CAI three o'clock

'It's only 3 o'clock.' (earlier than expected)

11 This problem is termed in Biq (1984) as the 'antionmy' problem.

- b. *ta san-dian cai lai.* (LINKING)

he 3-o'clock CAI come

'He won't come until three o'clock.'

(later than expected)

These seemingly contradictory uses of *cai* have not yet been sufficiently explained. However, given the analyses in this paper, we find a principled explanation for the two uses and we see no contradiction in the marking of quantity. When following a measurable NP, *cai* functions as a linking element and is viewed NOT as marking quantity per se, but marking a 'later-than-expected' time point or a 'greater/harder-than-expected' condition, which does not necessarily imply a larger amount, as explained in 3.3. When preceding a measurable NP, *cai* functions as a limiting element and is used to mark a scalar contrast by pointing to a more surprising value, opposite to the expected one. It happens that in marking a quantitative scale, it is the 'less-than-expected' value that is perceived as being more surprising and marked.¹²

5. Pragmatic Status and Compatibility with Other Functions

5.1 Pragmatic markedness

Having laid out the distinct functions of *jiu* and *cai*, we may further address the distributional skewing of the two markers: The number of occurrences of *jiu* is almost 10 times more than that of *cai*. The discrepancy in their frequency seems to suggest a difference in their pragmatic statuses.

12 The marking of a 'acalarly smaller element' in the use of limiting *cai* might be traced back to its grammaticalization source.

As a limiting element, *cai* is restricted to scalarly contrastive constituents; as a linking element, *cai* requires a high degree of presuppositionality and focusedness. In general, *cai* is only used to mark a counter-expectation. Compared with the neutral, cooperative, event-reporting norm of casual conversations, disagreement is usually highly marked. Givón (1979: 88) defines discourse markedness as 'the degree to which a discourse phenomenon constitutes a surprise, a break from the communicative norm'. It is therefore not surprising that *cai* has a very low frequency of occurrence.

The numerical preponderance of *jiu* should also be expected, given that in addition to its contrastive use with *cai*, *jiu* may also occur in neutral situations where the communicative norm is complied with. *Jiu* is therefore pragmatically less marked, as it may have a lower degree of presuppositionality/focusedness and a wider range of uses.

The unmarked status of *jiu* as a linking device can be further illustrated with another observation: It may function as a neutral sequential connective (or narrative connective), which can be inserted almost freely in the main-line, foregrounded events in narrative discourse. As a sequential connective, *jiu* may occur with or without *ranhou* 'afterwards, then':

- (44) *neige shi zuihaode, women dangchu ye bu xiaode,*
 which BE the best we then also NEG know
women jiu shenqing, ranhou jiu ganghao zhege youkong,
 we JIU apply then JIU happen-to this available
jiu lai le.

JIU come PFV

'We didn't know which (residential area) was the best, we just applied, and then this one happened to be available, and then we just came.'

The narrative connecting use of *jiu* is certainly resonant and coherent with its temporal or antecedent-consequent linking function. Concerning the way temporal sequence is coded in Chinese, Tai (1983: 50) observes that 'the relative word order between two syntactic units is determined by the temporal order of the states which they represent in the conceptual world. He further notes that when two sentences are conjoined by temporal connectives such as *zai*, *jiu*, and *cai* (all glossed by Tai as 'then'), the temporally earlier one always precedes the later one. It is true that both *jiu* and *cai* connect events in the order as they occur in the real world, but only *jiu* can be used freely as a narrative connective. This observation clearly reveals the unmarked status of *jiu* as a linking element, and is also related to its marking of 'earlier-than-expected' temporality and 'less surprising' causality, since narrative sequencing typically implies shorter intervals between events and the unmarked order of cause-effect.

5.2 Co-occurrence with sentence-final particles

Interesting correlations can be observed between the occurrence of the two markers and some sentence-final particles.

As a linking element, *cai* never occurs with a consequent clause that ends with the sentence-final perfect aspect marker *le*,¹³ which serves to 'report a current relevant state' (Li, Thompson, & Thompson, 1982), but this restriction does not apply to *jiu*, as illustrated below:

13 According to Li and Thompson 1981, the perfect aspect *le* is different from the 'perfective' *le* in that the perfect is to relate events/states to a Reference Time, while the perfective (or the punctual) is used to narrate an event from a viewpoint of its boundedness of completion.

- (45) a. *ta qi-dian jiu/cai lai.*
he 7-o'clock JIU come
'He will come in as early as/as late as 7 o'clock.'
- b. *ta qi-dian jiu lai le.*
he 7-o'clock JIU come CRS
'He will come (or came) in at seven.'
- c. **ta qi-dian cai lai le.*
he 7-o'clock CAI come

(45a) illustrates the counter-expectational use of *jiu* or *cai* in the same sentence without the perfect aspect marker *le*; (45b) shows that *jiu* may also be used with the marker to signal the relevance of the event to the time frame. Nevertheless, (45c) shows that *cai* does not have the alternative to be used with this particular marker. In the corpus, 60 of the 166 (36%) linking *jiu*'s occur with *le*, while none of the linking *cai*'s has *le* in the following clause.

The restriction signals a functional incompatibility between the use of *cai* and that of the perfect *le*. Being a marker that 'reports' or 'asserts' a current relevant state, *le* must play a crucial role in the 'asserted' portion in a sentence. The consequent proposition following *cai* fulfills a different function. It belongs to the 'assumed portion' of a sentence. It is highly presuppositional and provides the 'background information' of a sentence. The presuppositional status and backgroundedness of the consequent proposition following *cai* obviously conflict with the assertional nature of the perfect aspect marker *le*. Their functional incompatibility therefore prohibits the co-occurrence of the two markers.

In addition, *cai* occurs frequently with the attitudinal sentence-final particle *ne*. According to Li, Thompson, & Thompson (1982, p. 21), *ne*

signals ‘the speaker’s response to his perception of an expectation on the part of the hearer’. As pointed out above, *cai* is mainly used to respond to an expectation and signal a more demanding circumstance or stronger scalar strength. The counter-expectational function of *cai* is certainly compatible with the function of *ne*.

6. Conclusion

With the goal of studying how *jiu* and *cai* are actually used in Mandarin conversation, this paper has characterized the distinct discourse-pragmatic functions of the two markers with respect to their syntactic roles. Although quite limited in its research scope, this paper, nevertheless, bears some broader implications:

1. Meaning is in general non-discrete; it is contextually derived through use or pragmatic inference, as we see that the diverse senses of *jiu* and *cai* are best explained as arising from the combination of their primary discourse function with various contextual elements.

2. The traditional binary distinctions of sentence polarity, such as affirmative vs. negative, confirming vs. denying, as well as functional notions such as ‘focus’ or ‘presupposition’ may all be considered as scalar gradations, not as atomic notions. This is drawn from the observation that *cai* and *jiu* differ in terms of the DEGREE of ‘backgroundedness’ and ‘focusedness’, not in the absence or presence of these features. They can both be used to counter an expectation, but in different directions, to different extents, and with different conceptual frameworks.

3. Syntax is not autonomous or independent from semantics, pragmatics and human cognition. The co-occurrence compatibility of *jiu* and *cai* with

other constituents depends largely on their functional compatibility. This shows that discourse functions are often incorporated into, and to a certain extent, determine the grammatical structure.

4. Without looking at the distribution of the two markers in real conversation, We fail to recognize the discrepancy between their frequencies of occurrence, and as a consequent, we will not be able to capture their actual functional distinction.

(Accepted for publication 18 February 1993)

REFERENCES

- Alleton, Viviane. 1972. *Les adverbos en chinois moderne*. The Hague: Mouton.
- Biq, Yung-O. 1984. The semantics and pragmatics of *cai* and *jiu* in Mandarin Chinese. Ithaca, N.Y.: Cornell University Ph.D. dissertation.
- , 1988. From focus in proposition to focus in speech situation: *cai* and *jiu* in Mandarin Chinese. *Journal of Chinese Linguistics* 16: 72-108.
- , 1989. *Ye* as manifested on three discourse planes: polysemy or abstraction? In *Functionalism and Chinese Grammar*, ed. by James H-Y Tai and Frank F. S. Hsueh. South Orange, NJ: CLTA.
- Chafe, Wallace. 1976. Givenness, contrastiveness, definiteness, subjects, topics and point of view. *Subject and Topic*, ed. by C. Li, 25-55. NY: Academic.
- , 1987. Cognitive constraints on information flow. *Coherence and Grounding in Discourse*, ed. by Russell Tomlin, 21-51. Amsterdam: Benjamins.
- Chan, Stephen W. 1973. Review of 'Les adverbos en chinois moderne,' by Viviane Alleton. *Journal of Chinese Linguistics* 1: 493-505.
- Cao, Guangshun. 1987. Shi shuo 'jiu' he 'kuai' zai Song dai de shiyong ji youguan de duandai wenti. *Zhongguo yuwen* 4: 288-94.
- Du Bois, John W. 1987. The discourse basis of ergativity. *Language* 63: 805-55.
- Fox, Barbara. 1987. The Noun phrase accessibility hierarchy: Subject primacy or the absolutive hypothesis? *Language* 63: 856-70.

- Fox, Barbara, and Sandra Thompson. 1990. A discourse explanation of the grammar of relative clause in English conversation. *Language* 66: 297-316.
- Givon, Talmy. 1979. *On Understanding Grammar*. New York: Academic Press.
- . 1989. *Mind, Code and Context*. Hillsdale, NJ: Lawrence Erlbaum.
- Haiman, John, and Sandra A. Thompson. 1989. *Clause Combining in Grammar and Discourse*. Amsterdam: Benjamins
- Heine, Bernd, U. Claudi, and F. Hunnemeyer. 1991. *Grammaticalization: A conceptual framework*. Chicago: University of Chicago Press.
- Hopper, Paul. 1987. Emergent Grammar. *Berkeley Linguistics Society* 13: 139-57.
- Hopper, P. and S. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56: 251-299.
- . 1984. The discourse basis for lexical categories in universal grammar. *Language* 60: 703-752.
- Lakoff, George, and Mark Johnson. 1981. *Metaphors We Live By*. Chicago: University Chicago Press.
- Li, C. and S. Thompson. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley: University of California Press.
- Li, C., S. Thompson, and M. Thompson. 1982. The discourse motivation for the perfect aspect: the Mandarin particle LE. In *Tense and Aspect: between semantics and pragmatics*, ed P. Hopper. John Benjamins Publishing Co.
- Lu, Bingfu. 1984. Fuzi *jiu* de chaxiang fenhe wenti. *Hanyu xuexi* 1: 31-34.
- Ma, Xin-hua, and Jin-yu Chang. 1980. Tan *jiu*. *Yuwen Jiaoxue yu Yanjiu* 2: 55-62.

- Paris, Marie-Claude. 1987. A semantic analysis of *jiu* and *cai* in modern Chinese. *Chungkuo yuwen* 5: 390-398.
- Prince, Ellen F. 1981. Toward a taxonomy of given-new information. in *Radical Pragmatics*, ed. by Peter Cole. New York: Academic Press.
- Tai, James H-Y. 1983. Temporal sequence and Chinese word order. In *Iconicity in Syntax*, ed. by John Haiman. Amsterdam: Benjamins.
- Tsao, Feng-fu. 1976. "Expectation" in Chinese: a functional analysis of two adverbs. *Berkeley Linguistic Society* 2: 306-374.

中央研究院歷史語言研究所會議論文集之二

中國境內語言暨語言學 第二輯

歷史語言學

CHINESE LANGUAGES AND LINGUISTICS II
HISTORICAL LINGUISTICS

定價：精裝本新臺幣 950 元

（外幣定價按當時美金匯率換算，匯票每張另加匯兌費美金 10 元）

不准翻印

編輯者 李壬癸、黃居仁、湯志真

出版者 中央研究院歷史語言研究所
出版品編輯委員會

發行者 中央研究院歷史語言研究所
臺北市南港區

印刷者 福元印刷事業有限公司
臺北市雅江街 58 號

代售處 臺灣商務印書館
臺北市重慶南路一段 37 號

臺灣學生書局
臺北市和平東路一段 198 號

三民書局
臺北市重慶南路一段 61 號

中華民國八十三年五月出版

ISBN 957-671-231-9（精裝）