行政院國家科學委員會專題研究計畫 成果報告

從優選理論及語料庫觀點研究台灣北、中、南地區民俗唸謠的節律語法

研究成果報告(精簡版)

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計 畫 主 持 人：蕭宇超

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行政院國家科學委員會補助專題研究計畫 ☑ 成 果 報 告 □期中進度報告

（計畫名稱）

從優選理論及語料庫觀點研究台灣北、中、南地區民俗唸謠的節律語法

An optimality-theoretic and corpus-based approach to the metrical grammars of folk verses in Northern, Central, and Southern Taiwan

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成果報告類型(依經費核定清單規定繳交)： ☑精簡報告　□完整報告

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執行單位： 國立政治大學語言學研究所

中　華　民　國　94　年　10　月　2　日

從優選理論及語料庫觀點
研究台灣北、中、南地區
民俗唸謠的節律語法

An optimality-theoretic and corpus-based approach to the metrical grammars of folk verses in Northern, Central, and Southern Taiwan

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1. Introduction

This paper discusses the rhythm of modern folk verse in Taiwan, which is traditionally passed down by oral recitations. Its rhythm follows from clapping, which consists of two beats: a downbeat falls on a clap, and an upbeat follows as the hands open. A trochaic meter can be comprehended in this fashion.

The rest of this paper is organized as follows. Section 2 introduces the nature of Taiwan folk verse. Section 3 discusses some relevant statistics of the corpus. Section 4 raises some questions and presents some observations of the folk verse rhythm. Section 5 provides an Optimality Theory account for the questions raised earlier. Section 6 incorporates the idea of floating constraint and offers a generalization of the corpus. Finally, section 7 gives the closing remarks.

2. The Nature of Taiwan Folk Verse

In terms of the clapping, the verse lines can be characterized with a trochaic meter. Namely, the downbeat falls on the clap, and the upbeat follows as the hands open. Also based on the clapping, we can distinguish two types of rhythm, the masculine rhythm and the feminine rhythm. As in (2), a masculine rhythm has an odd

number of beats, followed by a silent beat. And (3) is a feminine rhythm, which has an even number of beats, followed by no silent beat.

(2) S W S W S W S W
SL-186-07 tsit pui ho te lai sio-ts^{h}iã 一杯好茶來相請
one cup good tea to treat
'A cup of good tea for you.'

(3) S W S W
TC-042-013 liong hong siong sui 龍鳳相隨
Dragon phoenix mutual follow
'The dragon and the phoenix follow each other.'

3. Relevant Statistics

This paper constructs a corpus of folk verses from the six areas, Ta-chia, Ta-an, Chang-hua, Shi-kang, Sha-lu and Wai-pu, in central Taiwan (CBC 1994, Hu 1992, 1994a,b, 1999, Hu and Wang 1999), including 603 verses in this corpus, with a total of 4762 lines. Eight Southern Min informants are consulted: among them, two are professional oral artists, in their late 70s, and the other six are regular college students, between 22 and 28. In addition, the author is also a native speaker of Southern Min.

The table in (4) shows that almost 88% of the lines are masculine, while only about 12% of them are feminine. In other words, there is a preference of a masculine rhythm in the corpus. For example, in (5), the verse line has 8 syllables, but it breaks into a 5-beat line and a 3-beat line. Both are masculine.

(4)

Rhythm Types	# of Lines	Percentage
Masculine	4186	87.91%
Feminine	576	12.09%
Total	4762	100.00%

(5) S W S W S W S W S W (Masculine)
WP-119-09 a-ko li bo boo u lao-pe 阿哥你無某有老爸
man you no wife have father
*S W S W S W S W (Feminine)
'Young man, you have no wife but a father.'

In the corpus, I distinguish content words and function words. As in (6), over 50% of the lines have function words. In fact, the function word is a key to the rhythmic diversity of Taiwan folk verse. The table in (7) shows that there are two types of function words. The small g refers to prenominal classifier, preverbal quantifier, and suffix. It does not receive a stress in non-final position. On the other hand, the big G can receive a stress like a content word.

(6)

Word Categories	# of Lines	Percentage
F	2385	50.08%
-F	2377	49.92%
Total	4762	100.00%

(7)

Word Categories	# of Lines	Percentage
g	132	2.77%
G	2153	45.21%
G+g	100	2.10%
-F	2377	49.92%
Total	4762	100.00%

A function word sometimes shares a beat with an adjacent syllable in the folk verse, unlike the Chinese classical verse, where every syllable receives a single beat. The table in (8) shows that over 11% of the lines must have beat-sharing, while about 5% of the lines may have either a one-to-one reading or a beat-sharing reading. The example in (9) is a line that has either reading.

(8)

Beat Association Types	# of Lines	Percentage
One-to-one	3977	83.52%
Beat-sharing	531	11.15%
Either	254	5.33%
Total	4762	100.00%

(9)

	S	W	S	W	S	W	S	W	(Pattern 1: one-to-one)
CH155-004	si	ni	*-e*		be	kiã-lo			四年的未行路
	4	grade-Sf			not	walk			

S W S W S W (Pattern 2: beat-sharing)
'The fourth grade can not walk.'

4. Some Observations

Given the statistics above, there are several questions. The first question is: when does beat sharing occur? Consider example (10). Here, the one-to-one reading results in a feminine rhythm. Therefore, beat-sharing occurs to achieve a masculine rhythm.

(10) *S W S W (Pattern 1: one-to-one)
SL-86-02-1 ho ts^{h}at-*a* ts^{h}iũ 予賊仔搶
by thief-Sf rob
S **W** S W (Pattern 2: beat-sharing of -*a*)
'robbed by the thief.'

The second question is: when is beat sharing suspended? Example (11) shows that beat-sharing is not possible, because a feminine rhythm would be derived otherwise.

(11) S W S W S W S W (Pattern 1: one-to-one)
SL-126-12 pah *li* tsit-ts^{h}ieng *ko* tsit-ban 拍你一千擱一萬
hit you 1-thousand and 10-thousand
***S** W S W S W (Pattern 2: beat-sharing of *li*)
***S** W S W S W (Pattern 2: beat-sharing of *ko*)
'Hit you one thousand and ten thousand times.'

The third question is: how is a g adjoined? Let's consider example (12) and look at the classifier *e*. Pattern 2 is bad because here the classifier *e* is adjoined to a strong beat. But pattern 3 is good, for now the classifier *e* is adjoined to a weak beat.

(12) *S W S W S W (Pattern 1: one-to-one)
WP067-025 kong ka u tsit *e* li 講到有一个理
talk till have one CL truth
*S W S W **S** W (Pattern 2: right-adjoined)
S W S **W** S W (Pattern 3: left-adjoined)
'Convincingly talked.'

The fourth question is: how is a G adjoined? In example (13), please look at the pronoun *li*. It can be either adjoined to a strong beat or adjoined to a weak beat. So all

the readings in (13) are good.

(13) S W S W S W S W S W (Pattern 1: one-to-one)
TC027-011-001 tat tio *li* tsit e si lo-tsai 踢著你這个死奴才
kick to you this CL damned servant
S W S W S W S W (Pattern 2: *li* not adjoined)
S W **S** W S W S W (Pattern 3: left-adjoined of *li*)
S **W** S W S W S W (Pattern 4: right-adjoined of *li*)
'Kicked you, the damned servant!'

5. An OT Analysis

With the patterns above in mind, I propose an OT analysis below. The constraints are in (14) thru (19), and the constraint ranking is given in (20).

(14) Uniformity: a beat is associated with a single syllable.
(15) Align-F: align a F-syllable with an edge of a beat.
(16) Align-g: align a g- syllable with an edge of a non-final weak beat.
(17) Align-S(R): align the right edge of a verse line with the right edge of a strong beat.
(18) Align-W(R): align the right edge of a verse line with the right edge of a weak beat.
(19) *Complex(L): a verse line consists of a single metrical line.
(20) Constraint Ranking (Tentative):
Align-S(R) >> Align-g >> Align-F >> Uniformity, *Complex(L) >> Align-W(R)

In (21), candidate (b) ends in a weak beat and violates the highest constraint, Align-S(R); therefore, candidate (a) is chosen as the optimal output.

(21) SL-86-02-1 ho ts^{h}at-*a* ts^{h}iũ 予賊仔搶 = (10)
by thief-Sf rob

	Align-S(R)	Align-g	Align-F	Uniformity	Align-W(R)
☺ a. S W S W ho ts^{h}at-*a* ts^{h}iũ				*	*
b. S W S W ho ts^{h}at-*a* ts^{h}iũ	*!				

In (22), candidates (b) and (c) also end in weak beats and violate Align-S(R);

candidates (d) has beat-sharing, so it is ruled out by Uniformity. As a result, candidate (a) is chosen as the optimal output.

(22) SL-126-12 pah *li* tsit-ts^{h}ieng *ko* tsit-ban 拍你一千擱一萬 = (11)
hit you 1-thousand and 10-thousand

	Align-S (R)	Align-g	Align-F	Uniformity	Align-W (R)
☺ a. S W S W S W S W pah *li* tsit-ts^{h}ieng *ko* tsit-ban					*
b. S W S W S W pah *li* tsit-ts^{h}ieng *ko* tsit-ban	*!			*	
c. S W S W S W pah *li* tsit-ts^{h}ieng *ko* tsit-ban	*!			*	
d. S W S W S W pah *li* tsit-ts^{h}ieng *ko* tsit-ban				*!*	*

In (23), beat-sharing is necessary. But candidate (b) is ruled out by Align-g, because the classifier *e* is adjoined to a strong beat. Candidate (a) is chosen as the optimal output, where the classifier *e* is adjoined to a weak beat.

(23) WP067-025 kong ka u tsit *e* li 講到有一个理 = (12)
talk till have one CL truth

	Align-S(R)	Align-g	Align-F	Uniformity	Align-W(R)
☺ a. S W S W S W kong ka u tsit *e* li				*	*
b. S W S W S W kong ka u tsit *e* li		*!		*	*
c. S W S W S W kong ka u tsit *e* li	*!				

In (24), none of the higher-ranked constraints are violated, and there is a tie among the candidates, so all the four candidates surface as optimal outputs.

(24) TC027-011-001 tat tio *li* tsit e si lo-tsai 踢著你這个死奴才 = (13)
kick to you this CL damned servant

	Align-S (R)	Align-g	Align-F	Uniformity	*Complex(L)
☺ a. S W S W S W S W S W					*

tat tio *li* tsit e si lo-tsai					
☺ b. S W S W S W S W tat tio *li* tsit e si lo-tsai				*	
☺ c. S W S W S W S W tat tio *li* tsit e si lo-tsai				*	
☺ d. S W S W S W S W tat tio *li* tsit e si lo-tsai				*	

6. Floating Constraint

Another question is: does beat sharing occur when no function word is involved? The example in (25) shows that a pair of IC-syllables may share a beat. And the relevant constraint is given in (26).

(25) *S W S W (Pattern 1: one-to-one)
SL-161-05-1 ts^{h}i tsa-bo kiã 飼查某子
feed female child
S **W** S W (Pattern 2: beat-sharing of *-a*)
'Raise a girl.'

(26) Align-IC: align both edges of a pair of IC-syllables with both edges of a beat.

In (27), I incorporate the idea of floating constraint. This idea is developed from Reynolds (1994), which allows certain constraints to move within a range, in order to account for stylistic variations.

(27) Constraint Ranking (Final):
…>> Align-S(R) >> Align-g >> Align-F >> Align-IC >> Uniformity, *Complex(L) >> …
↑ ↑
Align-W(R),

I suggest that Align-W(R) is a floating constraint. And we can see that the various rankings in (28) predict very close percentages to the statistics in the corpus.

(28)	Constraint Sub-rankings	Output	Predicted %	Observed %
a.	Align-S(R) >> Align-g >> Align-F >> Align-IC >> Uniformity, *Complex(L) >> **Align-W(R)**			

b.	Align-S(R) >> Align-g >> Align-F >> Align-IC >> Uniformity, *Complex(L), **Align-W(R)** >> …	Masculine	85.72%	87.91%
c.	Align-S(R) >> Align-g >> Align-F >> Align-IC, **Align-W(R)** >> Uniformity, *Complex(L) >> …			
d.	Align-S(R) >> Align-g >> Align-F, **Align-W(R)** >> Uniformity, *Complex(L) >> …			
e.	Align-S(R) >> Align-g, **Align-W(R)** >> Align-F >> Align-IC >> Uniformity, *Complex(L) >> …			
f.	Align-S(R), **Align-W(R)** >> Align-g >> Align-F >> Align-IC >> Uniformity, *Complex(L) >> …			
h.	**Align-W(R)** >> Align-S(R) >> Align-g >> Align-F >> Align-IC >> Uniformity, *Complex(L) >> …	Feminine	14.28%	12.09%

7. Closing Remarks

This paper has shown that some of the folk verse lines may have alternative readings: one derived by one-to-one mapping, while the other by beat sharing. I have posited a set of constraints to govern the beat assignments under the framework of Prince and Smolensky's (1993) Optimality Theory, which considers UG as consisting of universal constraints that are ranked language-specifically. In particular, Align-W(R) requires that a W category be aligned with the right edge of a weak beat, while One-to-One requires that a syllable be aligned with a single beat. Reranking of these constraints correctly accounts for the alternative readings (as proposed by Reynolds 1994, Anttila and Cho 1998). Taiwan folk verse is an intermediate linguistic art between poetry and speech. This paper has engaged in the study of the peculiar metrical patterns and variations, and made possible to explore a general theory of meter.

計畫成果自評

此項專題原本提出三年計畫，擬建立台灣北中南民俗唸謠的語料庫。不過由於後來經費只核定一年，因此本研究著重於分析中部地區民俗唸謠的節律語法。

本研究之理論貢獻如下：

1. 首次建立一個大型的閩南語童謠電子語料庫，共計四千七百餘行，成果如預期。
2. 此次建立之語料庫標注句法、詞類、音節與音板，並使用十分普及的 Excel 軟體建立語料庫，可方便流通。代本計畫之相關論文出版後，即可將語料庫掛於網頁上提供學者進一步利用。
3. 首次以對整理論及游動制約觀點分析閩南語民謠的節律，驗證一套普遍語法制約，從非派生角度提出一個新的理論分析模式。

本報告已有其完整性，擬投稿國外期刊。

本研究之階段性成果曾發表於以下兩個研討會：

蕭宇超。2007. “An OT Approach to the Metricality of Taiwan Folk Verse.” Paper for the 15th IACL and the 19th NACCL Joint Conference. University of Columbia,

蕭宇超。2007. “The Rhythmic Structure of Taiwan Folk Verses.” Paper for the LSA 2007 Annual Meeting. Los Angeles, USA.

人才培育方面，參與碩士生包括黃婷，宋凱琳，王曉晴，吳妃容，陳元翔，以及賴秋龍。在本計畫的薰陶下，碩士生黃婷已完成漢語手指謠之語料庫建立、頗具心得。

References

Culture Bureau of Chang-hua (CBC), ed. 1994 *Chang-hua Folk Ballads*. Chang-hua: Cultural Bureau of Chang-hua.

Hsiao, Yuchau E. 1991a. *Syntax, Rhythm and Tone: A Triangular Relationship*. Ph.D dissertation, University of California, San diego. Taipei: Crane Publishing Co.

Hsiao, Yuchau E. 1991b. "The Syntax-Phonology Interface as the Key to Metricality: Evidence from Taiwanese Folk Songs." *Kansas Working Papers in Linguistics*. 16: 1-20. University of Kansas.

Hsiao, Yuchau E. 2006. “The Metrical Structure of Changhua Folk Verse.” *Concentric: Studies in Linguistics*. 32.1:1-29.

Hu, wan-chuan, ed. 1992. *Southern Min Folk Verse of Shi-kang*. Fong-yuan: Cultural Bureau of Taichung County.

Hu, wan-chuan, ed. 1994a. *Southern Min Folk Verse of Ta-chia*. Fong-yuan: Cultural Bureau of Taichung County.

Hu, wan-chuan, ed. 1994b. *Southern Min Folk Verse of Sha-lu*. Fong-yuan: Cultural Bureau of Taichung County.

Hu, wan-chuan, ed. 1999. *Southern Min Folk Verse of Ta-an*. Fong-yuan: Cultural Bureau of Taichung County.

Hu, wan-chuan, and Cheng-hsiung Wang, eds. 1999. Southern Min Folk Verse of Wai-pu. Fong-yuan: Cultural Bureau of Taichung County.

Reynolds, B. 1994. Variation and Optimality Theory. Ph.D. dissertation, University of Pennsylvania.

出席國際學術會議心得報告

計畫編號	NSC 95-2411-H-004-025
計畫名稱	從優選理論及語料庫觀點研究台灣北、中、南地區民俗唸謠的節律語法
出國人員姓名 服務機關及職稱	蕭宇超　　國立政治大學語言學研究所
會議時間地點	5/24-29/2007　美國哥倫比亞大學
會議名稱	第十五屆國際漢語語言學會議及第十九屆北美漢語語言學研討會
發表論文題目	An OT Approach to the Metricality of Taiwan Folk Verse

參加會議經過及與會心得

本人於 5 月 24-29 日赴紐約出席「第十五屆國際漢語語言學會議及第十九屆北美漢語語言學研討會」及發表論文，此次會議由美國哥倫比亞大學主辦，規模十分龐大，有數百人與會。本人發表的論文題目爲：An OT Approach to the Metricality of Taiwan Folk Verse，屬於國科會計畫 NSC#95-2411-H-004-025。會中獲得熱烈討論，吸收不少珍貴意見。此外，有不少會議論文頗具啓發性，特別令我注意的是端木三、林華等教授之報告。

本人與隨行看護搭乘長榮飛機，去時經西雅圖到紐約，共 17 小時，回程由洛杉磯回台北，共 13 小時。由於本人行動不便，在交通上要特別感謝外交部北美司高秘書的安排，及我國駐紐約文化組之接送機、設宴招待，使我此行得以圓滿，並感受到一股濃濃的台灣情。