Chapter 6 *Ci* sub-grammar

6.1 General description of the raw corpus

Ci is the last major genre of classical Chinese verse[1]; it was first developed in the late *Tang* dynasty and *Five Dynasties* (907 - 960) which witnessed the co-existence of *Jinti* and *Ci* at its early stage (cf. Appendix I). By the beginning of the *Song* dynasty (960 ñ 1279) *Ci* had grown into a full-fledged poetic genre with distinct features of its own, and continued to flourish throughout the *Song* dynasty, which is hailed as the apogee of *Ci*.

Ci originated from composing lyrics to the musical tunes of court and folk songs and as such was originally meant to be sung. However, under the influence of some pioneering poets such as *Su Shi* (1036-1101), it gradually shook off its link to music and by the 11th century had developed into a form of art verse which could be recited independently of tunes. As the tunes subsequently became lost and only words have survived into contemporary times, recitation is the only viable form of performance for the modern speaker. Still, its intimate link with musical tunes has clearly left its stamp. For one thing, *Ci* poems are characterized by a strong irregularity in the length of lines, stanzas and poems, which was dictated by the rather arbitrary configuration of corresponding tunes; for another, each tune also imposed a rigid scheme of rhyming and tones[2]. At the same time *Ci* shares with *Jinti* the exclusive use of lexical syllables.

The *Song* dynasty gave birth to a large quantity of well-written and well-recited poems, most of which centered around two favorite themes: love and nostalgia. These poems have been collected in several influential anthologies, a most popular one being ë*Bai Xiang Ci Pu*í (literally ëWhite Fragrance *Ci* Anthologyí), which was compiled by *Shu Menglan* in the *Qing* dynasty (1644 ñ 1911 AD) and contains 100 *Ci* poems by a great number of preeminent poets, each composed to a distinct tune. All these poems continue to enjoy great popularity today with the modern speaker, and together with *Jinti* poems, are among the best-cited classical Chinese verse. As such this anthology is well suited to serve as the empirical basis for the current study: the present corpus is composed of the randomly selected 50 poems out of these 100 poems collected therein, with the randomness being achieved by virtue of the selection of the odd-numbered ones.

These 50 poems consist of altogether 753 lines, and it is noteworthy that of all the five genres, *Ci* displays the greatest diversity in its line length, ranging from 2 to 9

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[1] This, of course, does not mean that verse became non-existent after *Ci* ñ only that no distinct new genre such as the five discussed so far was developed. The verse composed during the *Ming* and *Qing* dynasties that followed the *Song* dynasty mainly imitated the earlier genres, in particular *Jinti* and *Ci* (Yang and Yang 1983).

[2] The tonal patterns for *Ci* verse differ from, and are in fact much more rigid than those for *Jinti* in the sense that every single position in a poem written to a given ëtuneí, which was referred to as ëmelodic tonal patterní (Levy 2000: 91) and indicated in the first part of the title, is specified for the tone that is allowed to occur there. The *Ci* tonal pattern is highly irregular and artificial ñ arguably much more so than that in the *Jinti* genre, which proves more revealing in further breaking down the myth of 'tonal meter', as discussed in Section 5.5.3 of the previous chapter.

syllables, albeit mostly from 3 to 7 syllables[3]. As is to be seen below, the diversity in the length of *Ci* lines partly leads to the variety in their scansion, which bears directly on the sub-grammar.

6.2 Methodological issues and preview of the sub-grammar

This chapter follows the same analytical approach and organizational principle as previous ones. In developing the modern sub-grammar, constraints from the constraint pool are invoked and ranked on the basis of the *Ci* data. The section is organized according to the line types, and analytically non-crucial lines are also illustrated alongside the crucial ones.

As mentioned earlier, *Ci* lines display a large variety of lengths and grammatical structures. Unlike *Jinti* lines which are scanned in a uniform way, *Ci* lines are also characterized by a rich pattern of scansion which invokes a wide array of constraints from the constraint pool. For one thing, the lack of uniformity in the scansions of lines of various grammatical structures indicates that the faithfulness constraint ANCHOR is operative, and indeed, as is to be seen below, the higher-level ANCHOR constraint, i.e. ANCHOR-$I_{SB}O_{PHP}$, also plays a critical role. For another thing, the core markedness constraints remain at work: the foot BINARITY preference and the ban of PhP-final monosyllabic feet respectively call for the ranking BINMAX >> BINMIN and the inviolable *PHP-FINAL-MONOFT, and the alignment between the right foot boundaries and the right IP boundary calls for ALIGNR (Ft, IP).

6.3 *Ci* sub-grammar

Ci lines in the present corpus range from 2 to 9 syllable long, even though the 2-, 8- and 9-syll lines are in the minority. The scansion of *Ci* lines of various lengths and structures also features diversity. Below, we present them according to the line type.

6.3.1 BINMIN: evidence from 2-syll lines

Ten 2-syll lines occur in the corpus, which all share the grammatical structure [SS] and the optimal scansion (SS), as illustrated below:

(1) (i) *[yan4 yan4]* → *(yan4 yan4)*
listless/redupl
ë(She feels) listlessí

(ii) *[tuan2 shan4]* → *(tuan2 shan4)*
round fan
ë(She holds a) round faní

[3] The shortest *Ci* line can contain only one single syllable and the longest as many as 11 syllables, though such lines, being rather rare, do not appear in our corpus. Regarding the one-syll line, it is interesting to note that the single syllable in such cases is either a lexical syllable or what was referred to as an ëexclamation syllableí back in Chapter 4.

(iii) *[yan2 chu4]* → *(yan2 chu4)*
prolong wait
ë(She) waits there for a prolonged timeí

(iv) *[ren2 qiao1]* → *(ren2 qiao1)*
people quiet
ëPeople have quieted downí

That the 2-syll lines are scanned as (SS) rather than (S)(S) shows that monary feet are dispreferred when binary feet are possible, which calls for BINMIN.

6.3.2 BINMAX >> BINMIN, and *IP-FINAL-MONOFT: evidence from 3-syll lines

Altogether 125 out of the total 753 *Ci* lines consist of 3 syllables. They exhibit two grammatical structures, namely, [SS]S and S[SS], and are all scanned as (S)(SS). Some examples are given below:

(2) (i) *[xiang1 wu4] bo2* → *(xiang1) (wu4 bo2)*
fragrant haze thin
ëThe fragrant haze is very thiní

(ii) *[ren2 san3] hou4* → *(ren2) (san4 hou4)*
people disperse after
ëAfter the crowd has dispersedí

(iii) *zui4 [fu2 rong2]* → *(zui4) (fu2rong2)*
intoxicate hibiscus
ëEven the hibiscus flowers are intoxicated (by our passion)í

(iv) *tou4 [chong2 mu4]* → *(tou4) (chong2 mu4)*
penetrate multiple curtain
ë(The fragrance) penetrates the multiple layers of curtainí

(v) *li3 [hai2 luan4]* → *(li3) (hai2 luan4)*
sort still messy
ë(I tried to) sort out (my confused thoughts), but they are still messyí

This uniform scansion of the 3-syll lines suggests two things. First, trisyllabic feet are unwelcome but monosyllabic feet are conditionally tolerable in verse scansion. This calls for BINMAX and its dominance over BINMIN. Second, that the monosyllabic foot, which is inevitable given the ban on trisyllabic feet, can only occur as the first foot, but not the final one in the IP calls for *IP-FINAL-MONOFT. Furthermore, it must be inviolable in the sub-grammar, together with BINMAX, as is evident from the loss of both (SS)(S) and (SSS). There is no crucial ranking between *IP-FINAL-MONOFT and BINMIN due to the lack of conflict between them. Thus the emergent sub-grammar now is *IP-FINAL-MONOFT, BINMAX >> BINMIN, and the scansion of 3-syll lines under this sub-grammar is illustrated below. The grammatical structure of the line is unspecified due to its irrelevance to the scansion.

(3)

SSS	BINMAX	*IP-FINAL-MONOFT	BINMIN
☞ (S)(SS)			*
(SSS)	*!		
(SS)(S)		*!	*

6.3.3 More illustrations of the sub-grammar: 4-syll lines

4-syll lines are the most frequent line type in the corpus, taking up 261 out of the 753 lines. Three types of grammatical structures emerge, i.e. [SS][SS], [S[SS]]S, and S[S[SS]]. As far as scansion is concerned, 4-syll *Ci* lines display a uniformity that also characterizes the scansion of 4-syll lines in all the other genres: all lines are invariably scanned as (SS)(SS) irrespective of their grammatical structures. Below are some examples.

(4) (i) *[yin2 hua1] [zhao4 ye4]* → *(yin2 hua1) (zhao4 ye4)*
silvery flower lighten night
ëThe silvery flowers (from the fireworks) lighten up the night skyí

(ii) *[dui4 [chang2 ting2]] wan3* → *(dui4 chang2) (ting2 wan3)*[4]
face long pagoda late
ë(We) face each other in the long pagoda till it is lateí

(iii) *shang4 [xun2 [fang1 jiu3]]* → *(shang4xun2) (fang1 jiu3)*
still search fragrant wine
ë(I) am still searching for fragrant wineí

The sub-grammar developed so far is adequate to account for the given data, as shown below. Again the grammatical structure of the line is unspecified.

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[4] It needs to be mentioned that whereas all of my informants agree that (SS)(SS) is the optimal scansion for lines of this structure in the verse context, for some, the more ëprose-likeí (S)(SSS) seems even better. However, crucially, in the latter scansion, the second syllable in the trisyllabic foot has to be reduced, and as we suggested earlier, we are only concerned with the verse scansion where MAX is inviolable. Furthermore, we suggest the scansion (SS)(SS) again bears testimony to the effect of the Gestalt principle in verse scansion (first discussed in Chapter 2), as such lines typically have as their neighbors other 4-syll lines which are more smoothly scanned as (SS)(SS). In saying this we are implying that lines such as (4)(ii) are experienced as somewhat tense, which is shown in Section 6.4 below.

(5)

SSSS	BINMAX	*IP-FINAL-MONOFT	BINMIN
☞ (SS)(SS)			
(S)(SSS)	*!		*
(S)(S)(SS)			*!*
(S)(SS)(S)		*!	**

It is notable that as the sub-grammar stands now, (SS)(SS) incurs zero violation and appears to be a perfect winner here only because the sub-grammar so far is incomplete; as it is further developed with the addition of new constraints, we will see that (SS)(SS) will incur some violations, albeit still optimal for 4-syll lines.

6.3.4 *PHP-FINAL-MONOFT, ANCHOR, ALIGNR (FT, IP), and ANCHOR-$I_{SB}O_{PHP}$: evidence from 5-syll lines

For 5-syll lines, nine grammatical structures are identified, as tabulated below:

(6)

	Grammatical structures
(i)	[SS][S[SS]]
(ii)	S[[SS][SS]]
(iii)	[SS][[SS]S]
(iv)	S[S[S[SS]]]
(v)	S[S[SS]S][5]
(vi)	[[[SS]S]S]S
(vii)	[[SS][SS]]S
(viii)	[S[SS]][SS]
(ix)	[[SS]S][SS]

Different from the uniformity characterizing the scansion of *Ci* lines discussed so far, 5-syll *Ci* lines may be scanned as (SS)(S)(SS) or (S)(SS)(SS), depending in a certain degree on the grammatical structure. More specifically, of the above nine types of grammatical structures, lines of (ii), (viii) and (ix) are all scanned as (S)(SS)(SS) and the others as (SS)(S)(SS). Below we present examples for all the grammatical structures together with their scansions:

(7) (i) *[meng4jun1] [jun1 [bu4 zhi1]]* → *(meng4 jun1) (jun1)(bu4 zhi1)*
dream you you not know
ëI dream of you but you donít knowí

(ii) *zai4 [xiang1feng2] [he2 chu4]* → *(zai4)(xiang1feng2) (he2 chu4)*
again mutual meet which place
ëWhere shall we meet each other again?í

[5] This bracketing structure is actually a shorthand for S[S[[SS]S]] and S[[S[SS]]S].

(iii) *[ye4 an4] [[ru3 ya1] ti2]* → *(ye4 an4) (ru3) (ya1 ti2)*
leaf dark baby crow cry
ëThe leaves are dark and the baby crows cryí

(iv) *shi4 [wen4 [ye4 [ru2 he2]]]* → *(shi4 wen4)(ye4) (ru2 he2)*
try ask night like what
ì (I) try to ask what the night is likeí

(v) *cui4 [fu2 [[xing2 ren2] shou3]]* → *(cui4 fu2) (xing2) (ren2 shou3)*
green stroke walk people head
ëThe green (leaves gently) stroke the heads of people walking byí

(vi) *[[mei2 zi3] huang2] shi2] yu3* → *(mei2 zi3) (huang2) (shi2 yu3)*
plum yellow moment rain
ëIt rains when the plums become yellowí

(vii) *[[shi1 ju4] [yu4 cheng2]] shi2* → *(shi1 ju4) (yu4) (cheng2 shi2)*
verse line almost finish moment
ëJust when the verse line is almost finishedí

(viii) *[xiang4 [jiao1 yuan2]] [ta4 qing1]* → *(xiang4) (jiao1yuan2) (ta4qing1)*
to suburb field step green
ë(Let us go) to the field in the suburb for a spring outingí

(ix) *[[qian1 wan4] bian4] [yang2 guan1]*
thousand ten thousand time sunny gate
ëFor thousands of times, I go to the sunny gate (to wait for you coming back)í

→ *(qian1) (wan4 bian4) (yang2 guan1)*

Evidently, the scansion of 5-syll lines exhibits a certain sensitivity to their grammatical structures. This indicates that the emergent sub-grammar which solely contains markedness constraints is insufficient and that some faithfulness constraint needs to be invoked. First, consider the scansion of lines of the structure [SS][S[SS]] as illustrated in (i) above. Under the emergent sub-grammar, (SS)(S)(SS) and (S)(SS)(SS) score equally well, which is shown below:

(8)

[SS][S[SS]]	BINMAX	*IP-FINAL-MONOFT	BINMIN
a.☞ (SS)(S)(SS)			*
b.☚ (S)(SS)(SS)			*
c. (SS)(SS)(S)		*!	
d. (SS)(SSS)	*!		

Compare these two candidates and it becomes evident that the desired winner (a) fares better in the boundary matching between the grammatical and the prosodic structures. This readily invokes ANCHOR. However, the scansion of the lines of this grammatical structure offers no evidence for the ranking of ANCHOR: no matter how it is ranked, (SS)(S)(SS) will always win over (S)(SS)(SS).

The evidence for the ranking of ANCHOR comes from the scansion of lines of the structures [SS][[SS]S] ((7) (iii) above) and S[S[S[SS]]] ((7) (iv)). To begin with, for the former: that (SS)(S)(SS) wins over (SS)(SS)(S) constitutes crucial evidence for *IP-FINAL-MONOFT >> ANCHOR. This is shown below.

(9)

[SS][[SS]S]	*IP-FINAL-MONOFT	ANCHOR-IO	ANCHOR-OI
☞ (SS)(S)(SS)		*	*
(SS)(SS)(S)	*!		

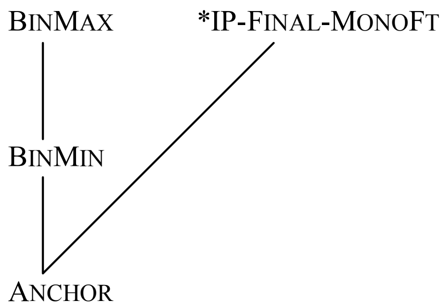
Second, for lines of the structure S[S[S[SS]]], that (SS)(S)(SS) is the optimal scansion rather than (S)(S)(S)(SS) provides the ranking argument for BINMIN >> ANCHOR, as is indicated below:

(10)

S[S[S[SS]]]	BINMIN	ANCHOR-IO	ANCHOR-OI
☞ (SS)(S)(SS)	*	*	
(S)(S)(S)(SS)	**!*		

Given that BINMAX >> BINMIN, by transitivity we have BINMAX >> ANCHOR. Thus ANCHOR is now fully ranked with the other three constraints, and the sub-grammar is:

(11)



The scansion of lines of the structure [SS][S[SS]] can now be adequately accounted for below (cf. (8)):

(12)

[SS][S[SS]]	BINMAX	*IP-FINAL-MONOFT	BINMIN	ANCHOR-IO	ANCHOR-OI
☞ (SS)(S)(SS)			*		
(SS)(SSS)	*!			*	
(S)(SS)(SS)			*	*!	*
(SS)(SS)(S)		*!		*	*

Next, consider the scansion of lines of the structure S[S[S[SS]]] as (SS)(S)(SS), illustrated in (iv) above. The inadequacy of the sub-grammar is revealed below:

(13)

S[S[S[SS]]]	BINMAX	*IP-FINAL-MONOFT	BINMIN	ANCHOR-IO	ANCHOR-OI
☞ (SS)(S)(SS)			*	*	
(SS)(SS)(S)		*!	*	**	*
☛ (S)(SS)(SS)			*	*	
(S)(S)(S)(SS)			**!*		
(SS)(SSS)	*!			**	

The problem lies in the fact that under the current sub-grammar, (SS)(S)(SS), the real winner, emerges as equi-optimal with (S)(SS)(SS), the actually suboptimal form. This scenario is similar to that encountered in (8): a constraint needs to be invoked out of the ëconstraint poolí that can capture the difference between (SS)(S)(SS) and (S)(SS)(SS). That the right boundaries of the feet and the right boundary of the IP are better aligned in the former than in the latter readily suggests ALIGNR (FT, IP): (SS)(S)(SS) incurs 5 (=2+3) violations of ALIGNR (FT, IP) whereas (S)(SS)(SS) incurs 6 (=2+4).

However, the constraint satisfaction/violation by these two candidates presented in tableau (13) falls short of offering evidence for the ranking of ALIGNR (Ft, IP), as the desired winner incurs fewer ALIGNR (FT, IP) than the unwanted winner, but they score even regarding the other constraints. (SS)(S)(SS) would win no matter how ALIGNR (Ft, IP) is ranked. The crucial evidence for its ranking comes from the scansion of lines of the structure S[[SS][SS]] (illustrated in (7) (ii) above): specifically, that (S)(SS)(SS) is optimal and (SS)(S)(SS) suboptimal shows ANCHOR >> ALIGNR (FT, IP). This is illustrated below:

(14)

S[[SS][SS]]	ANCHOR-IO	ANCHOR-OI	ALIGNR (FT, IP)
☞ (S)(SS)(SS)			6
(SS)(S)(SS)	*!	*	5

Now, recall that in (11), ANCHOR is ranked lowest in the constraint hierarchy, so by transitivity, the dominance of ALIGNR (FT, IP) by ANCHOR leads to the dominance of ALIGNR (FT, IP) by all the other three constraints in the hierarchy, i.e. BINMAX, BINMIN and *IP-FINAL-MONOFT[6]. In fact, the rankings BINMAX >> ALIGNR (FT, IP) and *IP-FINAL-MONOFT >> ALIGNR (FT, IP) can also be independently arrived at on the basis of data, as respectively illustrated below:

(15)

S[S[S[SS]]]	BINMAX	ALIGNR (FT, IP)
☞ (SS)(S)(SS)		5
(SSSSS)	*!	0

[6] As discussed earlier, BINMIN and ALIGNR (FT, IP) do not conflict. In this light, it is interesting to note that BINMIN >> ALIGNR (FT, IP) here is reached purely based on the ranking logic of transitivity.

(16)

S[S[S[SS]]]	*IP-FINAL-MONOFT	ALIGNR (FT, IP)
☞ (SS)(S)(SS)		5
(SS)(SS)(S)	*!	4

Before moving to other coding types, we re-visit the scansion of the coding type S[S[S[SS]]] (cf. (13)):

(17)

S[S[S[SS]]]	BIN MAX	*IP-FINAL-MONOFT	BIN MIN	ANCHOR-IO	ANCHOR-OI	ALIGNR (FT, IP)
☞ (SS)(S)(SS)			*	*		5
(SS)(SS)(S)		*!	*	**	*	4
(S)(SS)(SS)			*	*		6!
(S)(S)(S)(SS)			**!*			9
(SS)(SSS)	*!			**		3

As it turns out, the present sub-grammar can adequately account for the scansion of the structures illustrated as (v), (vi), (vii) and (viii) above. For simplicity sake, the corresponding tableaux are omitted.

The only grammatical structure in (7) remaining unaccounted for is [[SS]S][SS], which is scanned as (S)(SS)(SS). As it turns out, the current sub-grammar fails in this case:

(18)

[[SS]S][SS]	BINMAX	*IP-FINAL-MONOFT	BINMIN	ANCHOR-IO	ANCHOR-OI	ALIGNR (FT, IP)
☛ (SS)(S)(SS)			*			5
(SS)(SS)(S)		*!	*	*	*	4
☞ (S)(SS)(SS)			*	*!	*	6
(SS)(SSS)	*!			*		3
(SSS)(SS)	*!			*		2

Under the present sub-grammar, the desired winner (S)(SS)(SS) loses to the de facto suboptimal form (SS)(S)(SS) on account of its violation of ANCHOR. The unwanted winner (SS)(S)(SS) well satisfies ANCHOR by virtue of a complete boundary matching between the grammatical and the prosodic structures, in contrast to the failure of (S)(SS)(SS) to preserve the grammatical boundaries. This suggests that the latterís failure to observe ANCHOR must be for a good reason: some other requirement must be overriding the ANCHOR requirement.

Carefully observe the pair and we note that the key difference lies in the parsing of the first three syllables. Relate this to the grammatical structure and it becomes evident that an SB boundary is present after the third syllable. On the one hand, that it has to surface in the optimal scansion calls for ANCHOR-$I_{SB}O_{PhP}$ (and in fact indicates its inviolability as well). On the other hand, recall that this constraint requires that the output correspondent of this SB be the PhP boundary, which falls after the third syllable. This sheds light on the difference in the parsing of the first three syllables between the desired winner and the unwanted one, i.e. (S)(SS) versus (SS)(S). Apparently, the desired winner avoids the occurrence of a PhP-final monosyllabic foot even though this results in more violations of ANCHOR. This readily invokes *PHP-FINAL-MONOFT.

The simultaneous addition of ANCHOR-$I_{SB}O_{PhP}$ and *PHP-FINAL-MONOFT[7] triggered by this scansion renders it necessary to mark out the PhP boundary in the candidate, for which the sub-hierarchy proposed back in Chapter 2 still holds, i.e. BINARITY >> EVENNESS >> LONG-LAST (cf. Section 2.3.6.1.1.3). We now consider the ranking of these two new constraints. First, from the discussion above, it is evident that *PHP-FINAL-MONOFT >> ANCHOR. This is illustrated below:

(19)

[[SS]S][SS]	*PHP-FINAL-MONOFT	ANCHOR-IO	ANCHOR-OI
☞ (S)(SS)|(SS)		*	*
(SS)(S)|(SS)	*!		

Second, similar to *IP-FINAL-MONOFT, *PHP-FINAL-MONOFT does not conflict with BINMIN either. Third, *PHP-FINAL-MONOFT does not conflict with the other two highly ranked constraints, i.e. BINMAX and *IP-FINAL-MONOFT, for the straightforward reason that any candidate in violation of any of the three is doomed to fail and all three have to be inviolable in the sub-grammar. Fourth, as in the case of the *Shijing* sub-grammar (cf. Section 2.3.6.2.2 of Chapter 2), the introduction of the finer-grained NONFINALITY constraint *PHP-FINAL-MONOFT renders the coarser-grained *IP-FINAL-MONOFT superfluous, which is accordingly removed from the sub-grammar.

As for the ranking of ANCHOR-$I_{SB}O_{PHP}$ in the *Ci* sub-grammar, similar to the case in the *Shijing* sub-grammar, it must be inviolable. The reason is that any form where this SB fails to emerge as the PhP boundary (e.g. (S)|(SS)(SS)) or fails to emerge at all (e.g. (SS)(SS)(S)), is bound to lose. However, the scansion of 5-syll lines provides no evidence for the specific ranking of ANCHOR-$I_{SB}O_{PhP}$ with the other constraints. As an analytical expedient, we temporarily posit it as dominating BINMIN. As is to be seen in Section 6.3.6 below, the scansion of certain 7-syll *Ci* lines provides crucial evidence for its specific ranking.

Hence, the sub-grammar is updated into:

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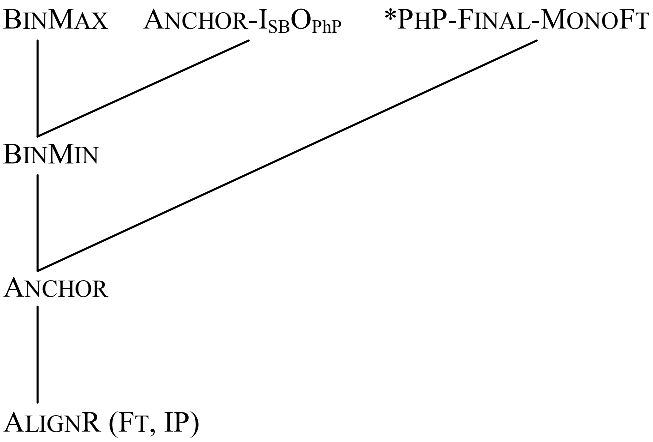
[7] Indeed, one might suggest that these two constraints always go hand in hand; the reason is that *PHP-FINAL-MONOFT is only triggered when an SB boundary is present in the input and surfaces in the optimal scansion as a PhP boundary. Thus a prediction is that if a sub-grammar contains *PHP-FINAL-MONOFT, it must at the same time contain ANCHOR-$I_{SB}O_{PHP}$, and both must be inviolable. Conversely, if a sub-grammar does not contain ANCHOR-$I_{SB}O_{PHP}$, it predictably does not contain *PHP-FINAL-MONOFT either, but only *IP-FINAL-MONOFT. As shown in the juxtaposition of the five sub-grammars in Chapter 7, this is indeed borne out. As is to be argued in Chapter 7, *IP-FINAL-MONOFT and *PHP-FINAL-MONOFT, evidently two constraints of the same family with different granularity, can be captured by parametrizing the constraint NONFINALITY (PROSUNIT), where PROSUNIT represents prosodic units at various levels of the prosodic hierarchy.

(20)



We conclude this section by re-visiting the scansion of lines of the structure [[SS]S][SS] in the tableau below where the PhP boundaries are marked out (compare (18)):

(21)

[[SS]S][SS]	BinMax	*PhP-Final-MonoFt	Anchor-$I_{SB}O_{PhP}$	BinMin	Anchor-IO	Anchor-OI	AlignR (Ft, IP)
(SS)(S)|(SS)		*!		*			5
(SS)|(SS)(S)		*!	*	*	*	*	4
☞(S)(SS)|(SS)				*	*	*	6
(SS)(SSS)|	*!		*		*		3
(SSS)(SS)|	*!				*		2

6.3.5 Anchor-OI >> BinMin >> Anchor-IO: 6-syll lines

The 112 6-syll lines in the corpus can be grouped into 10 grammatical structures, as charted below:

(22)

	Grammatical structures
(i)	[SS][[SS][SS]]
(ii)	S[S[SS][SS]]
(iii)	[SS][S[S[SS]]]
(iv)	[[SS][SS]][SS]
(v)	[S[S[SS]]][SS]
(vi)	S[S[[[SS]S]S]]
(vii)	[[SS][SS]S]S
(viii)	[SS][S[[SS]S]]
(ix)	S[[SS][[SS]S]]
(x)	S[S[S[S[SS]]]]

Compared with the 6-syll lines in the other genres, the 6-syll *Ci* lines display a rich variety of grammatical structures. But their scansions feature considerable uniformity: other than the lines of the structure (ix), which is scanned as (S)(SS)|(S)(SS), lines of the other grammatical structures are all scanned as either (SS)|(SS)(SS) (for (i), (ii), (iii), (vi), (vii), (viii), and (x)) or (SS)(SS)|(SS) (for (iv) and (v)) depending on the position of the SB boundary in the line. Below the ten grammatical structures are respectively illustrated with examples, along with the corresponding optimal scansions:

(23) (i) *[chuang1 wai4] [yue4 hua2] [shuang1 zhong4]*
window outside moon bright frost heavy
ëOutside the window, the moon is bright and the frost heavyí

→ *(chuang1 wai4) | (yue4 hua2) (shuang1 zhong4)*

(ii) *wo3 [yu4 [[cheng2 feng1] [gui1 qu4]]*
I want ride wind return go
ëI want to ride the wind and return (to my homeland)í

→ *(wo3 yu4)| (cheng2feng1) (gui1 qu4)*

(iii) *[wu2 yan2] [du2 [shang4 [xi1 lou2]]]*
no word alone up west boudoir
ëWithout saying a word, (I) go up to the western boudoir aloneí

→ *(wu2 yan2)| (du2 shang4)(xi1 lou2)*

(iv) *[[yi4 dian3] [ming2 yue4]] [kui1 ren2]*
one bit bright moon peep people
ë(When the curtain is slightly drawn), a bit of bright moon peeps (into the window) at the personí

→ *(yi4 dian3) (ming2 yue4)|(kui1 ren2)*

(v) *[chun1 [dao4 [nan2 lou2]]] [xue3 jin4]*
spring arrive south boudoir snow end
ëThe spring arrives at the southern boudoir and the snow is goneí

→ *(chun1 dao4) (nan2 lou2)| (xue3 jin4)*

(vi) *ying1 [shi4 [[[huan4 sha1] ren2] du4]]*
should be wash silk person jealous
ëIt should be the case that the person washing the silk becomes jealousí

→ *(ying1 shi4)| (huan4 sha1) (ren2 du4)*

(vii) *[[[liao4 qiao4] [chun1 han2]] zhong1] jiu3*
chilly spring cold in wine
ë(I drink some) wine in the chilly spring coldí

→ *(liao4 qiao4)| (chun1 han2) (zhong1 jiu3)*

(viii) *[hu2 die2] [bu4 [[sui2 chun1] qu4]*
butterfly not with spring leave
ëThe butterfly does not leave with springí

→ *(hu2 die2)|(bu4 sui2) (chun1 qu4)*

(ix) *dan4 [[mu4 song4] [[fang1 chen2] qu4]]*
only eye send fragrant dust leave
ë(I can) only see you leaving with the fragrant dust (behind you)í

→ *(dan4) (mu4 song4)| (fang1) (chen2 qu4)*

(x) *dou1 [yuan2 [zi4 [you3 [li2 hen4]]]]*
all because self have departure depression
ëIt is all because the departure itself is depressiveí

→ *(dou1 yuan2)| (zi4 you3) (li2 hen4)*

As it turns out, the sub-grammar reached in (20) can adequately account for the scansion of 6-syll lines of all these grammatical structures except for the grammatical structure S[[SS][[SS]S]] in (23) (ix). Below we first illustrate the working of the sub-grammar with only the scansion of (23) (iii)) and (vi)[8]:

(24)

[SS][S[S[SS]]]	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	BINMIN	ANCHOR-IO	ANCHOR-OI	ALIGNR (FT, IP)
☞ (SS)|(SS)(SS)					*		6
(SS)|(S)(S)(SS)				*!*			9
(S)(SS)|(S)(SS)			*!	**	*	*	10
(SSS)(SSS)|	*!*		*		**		3

(25)

S[S[[[SS]S]S]]	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	BINMIN	ANCHOR-IO	ANCHOR-OI	ALIGNR (FT, IP)
☞ (SS)|(SS)(SS)					**		6
(SS)(S)|(S)(SS)		*!		**	**	*	9
(S)(SS)|(S)(SS)				*!*	**	*	10
(S)(SSS)|(SS)	*!			*	**		7

But lines of the structure S[[SS][[SS]S]], scanned as (S)(SS)|(S)(SS) expose the inadequacy of the current sub-grammar, as is shown below:

[8] In the latter case, ANCHOR-$I_{SB}O_{PHP}$ is vacuously satisfied because the line is of a unidirectional structure.

(26)

S[[SS][[SS]S]]	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	BINMIN	ANCHOR-IO	ANCHOR-OI	ALIGNR (FT, IP)
☞ (S)(SS)|(S)(SS)				*!*	*	*	10
☛(SS)|(SS)(SS)					***	**	6
(S)(SS)|(SS)(S)		*!		**			9
(S)(SS)|(SSS)	*!			*	*		8

Here, (SS)|(SS)(SS) is predicted as the optimal scansion while the real optimal scansion is (S)(SS)|(S)(SS). Compare the satisfaction/violation of constraints by this pair of competitors, and we note that the desired winner scores better only in ANCHOR, but worse in both BINMIN and ALIGNR (FT, IP). Hence, the only way that can render it the winner is to capitalize upon its better satisfaction of ANCHOR by promoting the ranking of ANCHOR. However, tempting it might be, we cannot directly rank ANCHOR >> BINMIN, as we already argued back in (10) that BINMIN >> ANCHOR. This, nonetheless, is in fact not a ranking paradox as it appears to be. The reason is that BINMIN >> ANCHOR was reached in (10) on the implicit assumption that the two ANCHOR constraints stay together in the absence of crucial evidence calling for ranking them apart. The present case, however, constitutes exactly evidence of such a description, evidence that motivates the two ANCHOR constraints to be ranked apart.

To determine the specific ranking, we need to re-consider the ranking argument in (10), which is repeated here for expository reason:

(27)

S[S[S[SS]]]	BINMIN	ANCHOR-IO	ANCHOR-OI
☞ (SS)(S)(SS)	*	*	
(S)(S)(S)(SS)	**!*		

Crucially, of the two ANCHOR constraints, only the dominance of ANCHOR-IO by BINMIN is motivated; the scansion of lines of this structure offers no crucial evidence for the ranking between BINMIN and ANCHOR-OI. In other words, of the two ANCHOR constraints, only ANCHOR-IO is fixed in its ranking but ANCHOR-OI remains mobile.

Now, with this new insight, re-consider the pair of desired and unwanted winners in (26) and we realize that they provide crucial evidence for promoting ANCHOR-OI over BINMIN. The ranking argument for ANCHOR-OI >> BINMIN is shown below:

(28)

S[[SS][[SS]S]]	ANCHOR-OI	BINMIN
☞ (S)(SS)|(S)(SS)	*	**
(SS)|(SS)(SS)	**!	

We now quickly consider the ranking of ANCHOR-OI with the other constraints in the sub-grammar. To begin with, as BINMIN >> ANCHOR-IO >> ALIGNR (FT, IP), by transitivity, ANCHOR-OI dominates ANCHOR-IO and ALIGNR (FT, IP). Second, ANCHOR-OI must be ranked lower than BINMAX, because if it were the other way around, then (S)(SS)(SSS), or to take a more extreme case, the parsing (SSSSSS), would win, hence ANCHOR-OI satisfied, would win, which is obviously not true. Hence BINMAX>>ANCHOR-OI. This is shown below:

(29)

S[[SS][[SS]S]]	BINMAX	ANCHOR-OI
☞ (S)(SS)|(S)(SS)		*
(S)(SS)|(SSS)	*!	
(SSSSSS)|	*!	

Third, the fact that (S)(SS)|(SS)(S) which best satisfies ANCHOR-OI loses to (S)(SS)|(S)(SS) provides evidence for *PHP-FINAL-MONOFT >> ANCHOR-OI. This is shown below:

(30)

S[[SS][[SS]S]]	*PHP-FINAL-MONOFT	ANCHOR-OI
☞ (S)(SS)|(S)(SS)		*
(S)(SS)|(SS)(S)	*!	

However, there is yet no crucial evidence for the ranking between ANCHOR-$I_{SB}O_{PhP}$ and ANCHOR-OI, and as ANCHOR-$I_{SB}O_{PhP}$ is inviolable, we temporarily beg the ranking ANCHOR-$I_{SB}O_{PHP}$ >> ANCHOR-OI. As is to be seen in the next section, the scansion of the 7-syll lines of the structure [[SS]S][S[S[SS]]] offers crucial evidence for this ranking. The sub-grammar now becomes (cf. (20)):

(31)

BINMAX ANCHOR-$I_{SB}O_{PHP}$ *PHP-FINAL-MONOFT

ANCHOR-OI

BINMIN

ANCHOR-IO

ALIGNR (FT, IP)

We conclude this section with one further thought on the ranking of ANCHOR-OI >> ANCHOR-IO. Informally, this means that it is more important for each prosodic boundary to have an input correspondent than for each grammatical boundary to have an output correspondent. In other words, it is more offensive to insert new prosodic boundaries where a corresponding grammatical boundary is missing than to ignore the grammatical boundaries when the line is parsed.

6.3.6 ANCHOR-$I_{SB}O_{PHP}$ >> ANCHOR-OI: evidence from 7-syll lines

Of all line types in *Ci*, 7-syll lines display the greatest variety in their grammatical structures. Altogether 14 grammatical structures are identified. For brevity sake, the complete table of the coding types and grammatical structures is omitted.

The scansion of 7-syll *Ci* lines is also characterized by a degree of diversity, unlike that of the 7-syll *Jinti* lines which is uniformly (SS)(SS)(S)(SS). More specifically, 7-syll *Ci* lines of most grammatical structures are scanned as (SS)|(SS)(S)(SS) or (SS)(SS)|(S)(SS), depending on whether a SB is present in the line, and if so, where it is. Two exceptions are lines of the structure [[SS]S][S[S[SS]]] and [SS][S[[SS][SS]]] which are respectively scanned as (S)(SS)|(SS)(SS) and (SS)|(S)(SS)(SS). Below we present examples of 7-syll *Ci* lines of the 14 grammatical structures.

(32) (i) *[[zhuo2 jiu3] [yi4 bei1]] [jia1 [wan4 li3]]*
turbid wine one glass home ten thousand mile
ëI drink a glass of turbid wine and miss my home thousands of miles awayí

→ *(zhuo2 jiu3) (yi4bei1)|(jia1) (wan4 li3)*

(ii) *[[chang2 yan1] [luo4 ri4]] [[gu1 cheng2] bi4]*
long smoke fall sun lone city close
ëThe smoke from the chimneys is stretching long into the air, the sun is setting, and the city stands alone with its gate closedí

→ *(chang2 yan1) (luo4 ri4)| (gu1) (cheng2bi4)*

(iii) *[qing1 chen2] [[lian2 mu4] [juan3 [qing1 shuang1]]]*
early morning curtain screen roll light frost
ëIn the early morning, the curtain rolls up the light frostí

→ *(qing1 chen2)| (lian2 mu4) (juan3) (qing1 shuang1)*

(iv) *[yu4 lou2] [shen1 [suo3 [[duo1 qing2] zhong3]]]*
jade boudoir deep lock many passion seed
ë(A lover) full of passion is locked deep in the jade boudoirí

→ *(yu4 lou2)|(shen1 suo3) (duo1) (qing2 zhong3)*

(v) *[che1 [ru2 [liu2 shui3]]] [ma3 [ru2 long2]]*
carriage like flow water horse like dragon
ëThe horse carriages (are so many that they look) like flowing water, and the horses (are so many that they look like) moving dragonsí

→ *(che1 ru2) (liu2 shui3)| (ma3)(ru2 long2)*

(vi) *[zhi3 dian3] [[liu4 chao2] [[xing2 sheng4] di4]]*
point comment six dynasty view good place
ë(We) point to and comment on the places which used to be sites of attraction during the Six Dynastiesí

→ *(zhi3 dian3)| (liu4 chao2) (xing2) (sheng4 di4)*

(vii) *shi2 [jian4[[shu1 xing1] [du4 [he2 han4]]]]*
sometimes see sparse star cross river river
ëSometimes (I can) see the sparse stars crossing the milky wayí

→ *(shi2 jian4)(shu1 xing1)| (du4) (he2 han4)*

(viii) *[dang1 ri4] [he2[ceng2 [qing1 [fu4 chun1]]]]*
that day how ever easy waste spring
ëIn those days how (could we) ever have easily let the spring goí

→ *(dang1 ri4)| (he2 ceng2) (qing1) (fu4chun1)*

(ix) *[[[lian2hua1] lou2] xia4] [liu3 [qing1 qing1]]*
lotus flower boudoir below willow green/redup.
ëThe willows below the lotus flower boudoir are so greení

→ *(lian2hua1) (lou2xia4)| (liu3) (qing1 qing1)*

(x) *xian2 [[yin3 [yuan1 yang3]] [[fang1 jing4] li3]]*
leisure lead male duck female duck fragrant lane inside
ëThe leisure leads the pair of ducks into the lane covered with fragrant flowersí

→ *(xian2 yin3)(yuan1yang3)| (fang1) (jing4li3)*

(xi) *wen2 [shui2[you2[zai4 [[ping2 lan2] chu4]]]]*
ask who still at lean railing place
ë(I) wonder who is still at the railing which I used to lean againstí

→ *(wen2shui2) (you2 zai4)| (ping2) (lan2 chu4)*

(xii) *[[lou2 qian2] lü4] [an4 [fen2 [xie2 lu4]]]*
boudoir front green secretly divide side road
ëThe greenness in front of the boudoir secretly branches into the side roadí

→ *(lou2)(qian2 lü4)|(an4 fen2) (xie2 lu4)*

(xiii) *[lei4 yan3] [jing4 [[wu2 yu3] [ning2 ye4]]]*
tear eye even no word freeze choke
ëTears (fill in my) eyes, and I simply cannot say a word, choked back by my tearsí

→ *(lei4 yan3)| (jing4) (wu2 yu3) (ning2 ye4)*

(xiv) *[xun2 hao3 meng4]], [meng4 [nan2cheng2]]*
search good dream dream difficultrealize
ë(Everybody) searches for good dreams, but dreams are so difficult to be realizedí

→ *(xun2) (hao3 meng4)| (meng4) (nan2 cheng2)*

It is notable that of the lines of the 14 types of grammatical structures, all but those of the last three share the foot-level scansion (SS)(SS)(S)(SS), which is notably identical to the optimal scansion of all 7-syll *Jinti* lines. Lines of the last three grammatical structures appear to be scanned rather uniquely. As it turns out, the current sub-grammar can correctly account for the optimal scansion of the 7-syll lines of all these different grammatical structures. For simplicity sake, below we illustrate the working of the sub-grammar with (i) and (x) where the lines are scanned as (SS)(SS)|(S)(SS) and (xii), (xiii) where the lines are scanned differently.

(33)

[[SS][SS]][S[SS]]	BIN MAX	*PHP-FINAL-MONOFT	ANCHOR-I$_{SB}$O$_{PHP}$	ANCHOR-OI	BIN MIN	ANCHOR-IO	ALIGNR (FT, IP)
☞ (SS)(SS)|(S)(SS)					*		10
(SS)(SS)|(SS)(S)		*!		*	*	*	9
(SS)|(SSS)(SS)	*!		*			*	7
(S)(SS)|(SS)(SS)			*!	**	*	**	12
(SSSS)|(S)(SS)	*!				*	*	5

(34)

S[[S[SS]][[SS]S]]	BIN MAX	*PHP-FINAL-MONOFT	ANCHOR-I$_{SB}$O$_{PHP}$	ANCHOR-OI	BIN MIN	ANCHOR-IO	ALIGNR (FT, IP)
☞ (SS)(SS)|(S)(SS)				*	*	**	10
(S)(S)(SS)|(SS)(S)		*!			***		15
(S)(S)(SS)|(S)(SS)				*	**!*	*	16
(SS)(SS)|(SSS)	*!					**	8
(S)(SSS)|(S)(SS)	*!			*	**	**	11
(S)(SS)|(SS)(SS)				**!	*	***	12

(35)

[[SS]S][S[S[SS]]]	BIN MAX	*PHP-FINAL-MONOFT	ANCHOR-I$_{SB}$O$_{PHP}$	ANCHOR-OI	BIN MIN	ANCHOR-IO	ALIGNR (FT, IP)
☞ (S)(SS)|(SS)(SS)				*	*	**	12
(SS)(SS)|(S)(SS)			*!		*	*	10
(SSS)|(SS)(SS)	*!					**	6
(SS)(S)|(SS)(SS)		*!			*	*	11
(SS)(SS)|(SSS)	*!		*			**	8

(36)

<table>
<tr><th>[SS][S[[SS][SS]]]</th><th>BIN MAX</th><th>*PHP-FINAL-MONOFT</th><th>ANCHOR-$I_{SB}O_{PHP}$</th><th>ANCHOR-OI</th><th>BIN MIN</th><th>ANCHOR-IO</th><th>ALIGNR (FT, IP)</th></tr>
<tr><td>☞ (SS)|(S)(SS)(SS)</td><td></td><td></td><td></td><td></td><td>*</td><td></td><td>11</td></tr>
<tr><td>(SS)|(SS)(S)(SS)</td><td></td><td></td><td></td><td>*!</td><td>*</td><td>*</td><td>10</td></tr>
<tr><td>(S)(SS)|(SS)(SS)</td><td></td><td></td><td>*!</td><td>*</td><td>*</td><td>*</td><td>12</td></tr>
<tr><td>(SSS)|(SS)(SS)</td><td>*!</td><td></td><td>*</td><td></td><td></td><td>*</td><td>6</td></tr>
<tr><td>(SS)|(SS)(SS)(S)</td><td></td><td>*!</td><td></td><td>**</td><td>*</td><td>**</td><td>9</td></tr>
</table>

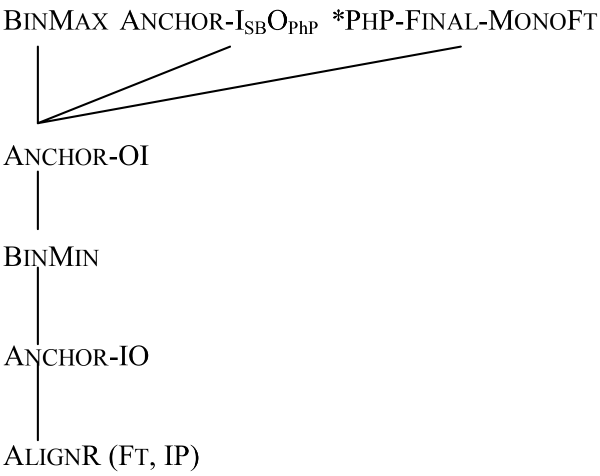
However, it needs to be reminded that in the sub-grammar reached so far, the ranking ANCHOR-$I_{SB}O_{PhP}$ >> ANCHOR-OI is theoretically postulated on the basis of the inviolability of the former. The scansion of lines of the structure [[SS]S][S[S[SS]]] shown in (35) provides crucial evidence for the ranking. More specifically, the loss of the candidate (SS)(SS)|(S)(SS) which satisfies ANCHOR-OI but violates ANCHOR-$I_{SB}O_{PhP}$ shows the dominance of the former by the latter; for if ANCHOR-OI >> ANCHOR-$I_{SB}O_{PhP}$, then this candidate would win. This ranking argument is presented below:

(37)

<table>
<tr><th>[[SS]S][S[S[SS]]]</th><th>ANCHOR-$I_{SB}O_{PHP}$</th><th>ANCHOR-OI</th></tr>
<tr><td>☞ (S)(SS)|(SS)(SS)</td><td></td><td>*</td></tr>
<tr><td>(SS)(SS)|(S)(SS)</td><td>*!</td><td></td></tr>
</table>

By transitivity, this ranking leads to ANCHOR-$I_{SB}O_{PhP}$ dominating BINMIN, ANCHOR-IO and ALIGNR (FT, IP); that it does not conflict with the other two high-ranking constraints BINMAX and *PHP-FINAL-MONOFT has been discussed earlier, and the sub-grammar now becomes (compare (31)):

(38)



We conclude the discussion on 7-syll *Ci* lines by briefly considering the line in (xiv), repeated below for convenience sake:

(39) *[xun2 hao3 meng4]], [meng4 [nan2cheng2]]*
search good dream dream difficultrealize
ë(Everybody) searches for good dreams, but dreams are so difficult to be realizedí

→ *(xun2) (hao3 meng4), (meng4) (nan2 cheng2)*

We argue that unlike the 6-syll *Guti* line which was argued to be in fact a 5-syll line plus a mono-syllabled line, the two 3-syll parts, even though separated by a comma, constitute one single IP, which is evidenced in the fact that they are performed under one single, unbroken intonation contour. The second foot runs smoothly into the third one without being interrupted by the comma. Also, the first and the third foot, both of which are monosyllabic, are invariably prolonged in performance, as indicated by the optimal scansion indicated above.

It deserves mentioning that this line occurs in a poem which consists of eight lines and where the other seven lines are all 7-syll ones. It is interesting that this peculiar line does not interrupt the rhythm of the verse; rather it snugly fits in. This, we suggest, is because the PhP-level parsing as indicated by the comma is actually the optimal one under the sub-hierarchy proposed for PhP boundary delimitation[9]. Assuming the foot-level parsing remains the same, we indicate how it wins over the other possible PhP-level parsing below:

(40)

[S[SS]][S[SS]]	BINARITY	EVENNESS	LONG-LAST
☞(S)(SS)|(S)(SS)			
(S)|(SS)(S)(SS)	*!*	****	
(S)(SS)(S)|(SS)	*!*	**	*

6.3.7 More illustrations of the sub-grammar: 8- and 9-syll lines

As mentioned earlier, in the present *Ci* corpus, 3-, 4-, 5-, 6- and 7-syll lines comprise the overwhelming majority (737 out of 753). In contrast, 8- and 9-syll lines are minimal in number: 2 for the former and 4 for the latter. In this section, we briefly consider the scansion of these two line types.

First, the two 8-syll lines have different structures and scansions, as presented below:

(41) *ying1 [shi4 [[liang2 chen2] [hao3jing3]][xu1 she4]]*
should be fine moment good scene vainly set
ëIt should be the case that all the fine moments and good scenes are just set in vainí

→ *(ying1 shi4) (liang2 chen2)| (hao3jing3)(xu1 she4)*

[9] Another possible reason is the preservation of the so-called ëvisual rhythmí (Wang 1958), which is created by the equal length across the lines in a Chinese poem due to the fact that every character, i.e. syllable, and punctuation mark, such as the comma here, takes up the same space in written form.

(42) *you4 [qi3 [liao4 [[er3 jin1] [yu2 [ci3shen1]]]]]*
and how expect but today remain this body
ëAnd how could I expect that I am still alive todayí

→ *(you4) (qi3liao4)| (er3 jin1) (yu2) (ci3shen1)*

Both lines can be successfully accounted for by the current sub-grammar, as shown below:

(43)

S[S[[[SS][SS]][SS]]	BIN MAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	ANCHOR-OI	BIN MIN	ANCHOR-IO	ALIGNR (FT, IP)
☞(SS)(SS)|(SS)(SS)						*	12
(S)(S)(SS)|(SS)(SS)					*!*		19
(S)(SSS)|(SS)(SS)	*!				*	*	13
(SS)(S)|(SS)(S)(SS)		*!		*!*	**	**	16
(S)(SS)|(SS)(S)(SS)				*!*	**	**	17

(44)

S[S[S[[SS][S[SS]]]]]	BIN MAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	ANCHOR-OI	BIN MIN	ANCHOR-IO	ALIGNR (FT, IP)
☞(S)(SS)|(SS)(S)(SS)					**	*	17
(SS)(SS)|(SS)(SS)				*!		***	12
(SS)(S)|(SS)(S)(SS)		*!			**	*	16
(S)(S)(SS)|(SS)(SS)				*!	**	**	19
(S)(SS)|(SS)(SS)(S)		*!		*	**	**	16
(SS)(SSS)|(S)(SS)	*!				*	**	11

Two points are worth mentioning. First, both lines have a unidirectional grammatical structure and neither has an SB, hence ANCHOR-$I_{SB}O_{PHP}$ is vacuously satisfied. Second, the scansion of the line of S[S[S[[SS][S[SS]]]]] as (S)(SS)|(SS)(S)(SS) rather than the evenly-chopped (SS)(SS)|(SS)(SS) results from the dominance of ANCHOR-OI by BINMIN. Put informally, this implies that it is important not to insert new prosodic boundaries into where the grammatical boundaries are absent, i.e. not to split the grammatically linked syllables into two prosodic units, even though this would reduce the number of monosyllabic feet.

We now move on to the four 9-syll lines in the *Ci* corpus[10]. They display two grammatical structures and are all scanned as (SS)(SS)(SS)(S)(SS). This is illustrated below:

[10] It is noteworthy that *Ci* is the only genre where 9-syll lines occur, and even here they occur at the very low frequency of 4 out of 753. In general, verse lines as long as 9-syll are very rare, which, as mentioned in Section 5.5.1 of Chapter 5, might be at least partly attributable to the cognitive factors such as the capacity of human short-term memory and partly to the physiological consideration that a line longer than 9 syllables risks extending beyond one breathís stretch.

(45) *[gu4 guo3] [bu4 [kan1 [[hui2 shou3] [yue4 ming2] zhong1]]]]*
original country not bear back head moon bright inside
ëI cannot bear thinking back of my home country in this bright moon lightí

→ *(gu4 guo3)| (bu4 kan1) (hui2 shou3) (yue4) (ming2 zhong1)*

(46) *qia4 [si4 [[yi4 jiang1] [chun1 shui3]] [[xiang4 dong1] liu2]]]*
just like one river spring water towards east flow
ë(My sadness is so deep that it is) just like the spring water of the river flowing eastwardsí

→ *(qia4 si4) (yi4jiang1)| (chun1 shui3) (xiang4) (dong1 liu2)*

Both scansions can be adequately accounted for by the sub-grammar, as shown below:

(47)

[SS][S[S[[SS][SS]S]]]]	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PhP}$	ANCHOR-OI	BINMIN	ANCHOR-IO	ALIGNR (FT, IP)
☞(SS)|(SS)(SS)(S)(SS)				*	*	**	17
(SS)|(SS)(SS)(SS)(S)		*!				*	16
(SS)|(SS)(S)(SS)(SS)				**!	*	***	18
(SS)|(S)(SS)(SS)(SS)				**!	*	***	19
(S)(SS)(SS)|(SS)(SS)			*!	***	*	****	20
(SS)|(S)(SSS)(S)(SS)	*!			*	**	**	18

(48)

S[S[[SS][SS]][[SS]S]]]	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PhP}$	ANCHOR-OI	BINMIN	ANCHOR-IO	ALIGNR (FT, IP)
☞(SS)(SS)|(SS)(S)(SS)				*	*	**	17
(SS)(SS)|(SS)(SS)(S)		*!			*	*	16
(SS)(SS)|(S)(SS)(SS)				**!	*	***	18
(SS)(S)(SS)|(SS)(SS)				**!*	*	****	19
(S)(SS)(SS)|(SS)(SS)				**!*	*	****	20
(SSS)(S)|(SS)(S)(SS)	*!	*		**	**	***	16

We see that strictly speaking, the two optimal scansions, although identical in the foot structure, nonetheless differ in the PhP-level parsing, as a result of the presence versus absence of the SB, which in turn is due to the bi-directional versus unidirectional structure.

This discussion of the scansion of 9-syll *Ci* lines also concludes the development of the *Ci* sub-grammar, which is as follows:

(49) BINMAX *PHP-FINAL-MONOFT ANCHOR-$I_{SB}O$

ANCHOR-OI

BINMIN

ANCHOR-IO

ALIGNR (FT, IP)

6.4 Formal grounding of the metrical harmony

This section seeks to account for the native speakerís judgment about the metrical harmony of *Ci* lines in terms of the satisfaction/violation of the constraints deployed in the sub-grammar and in so doing, formally ground the metrical harmony in the sub-grammar via the construct of OT harmony. The analytical procedure exactly follows that in the previous chapters. For practical considerations, only 3-, 4-, 5-, 6-, and 7-syll lines will be discussed; 2-, 8- and 9-syll lines are omitted because of their minimal token number (respectively 10, 2 and 4 in a total of 753 lines).

We start with 3-syll lines. As mentioned in Section 6.3.2, 3-syll lines have two grammatical structures, i.e. S[SS] and [SS]S, and are all scanned as (S)(SS). Thus the tableau des tableaux has two candidate parses:

(50) 3-syll lines

Candidate parses	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	ANCHOR-OI	BINMIN	ANCHOR-IO	ALIGNR (FT, IP)
a. { [SS]S (S)(SS)|				*!	*	*	2
b.☞ { S[SS] (S)(SS)|					*		2

The parse (b) emerges as optimal, and its input S[SS] coincides with the grammatical structure cognized as being metrically most harmonious.

4- and 5-syll lines offer further support for this claim, namely, the grammatical structure in the optimal parse coincides with the metrically most harmonious one. For simplicity sake, the two corresponding tableaux des tableaux are directly provided below. In the case of 5-syll lines, due to the large number of grammatical structures, not all grammatical structures are presented.

(51) 4-syll lines

Candidate parses	BinMax	*PhP-Final-MonoFt	Anchor-$I_{SB}O_{PhP}$	Anchor-OI	BinMin	Anchor-IO	AlignR (Ft, IP)
a. ☞ [SS][SS] (SS)(SS)|							2
b. S[S[SS]] (SS)(SS)|						*!	2
c. [[SS]S]S (SS)(SS)|						*!	2
d. [S[SS]]S (SS)(SS)|				*!		**	2

(52) 5-syll lines

Candidate parses	BinMax	*PhP-Final-MonoFt	Anchor-$I_{SB}O_{PhP}$	Anchor-OI	BinMin	Anchor-IO	AlignR (Ft, IP)
a. ☞ [SS][S[SS]] (SS)|(S)(SS)					*		5
b. S[[SS][SS]] (S)(SS)|(SS)					*		6!
c. [SS][[SS]S] (SS)|(S)(SS)				*!	*	*	5

However, 6-syll lines present certain apparent problems:

(53) 6-syll lines

Candidate parses	BinMax	*PhP-Final-MonoFt	Anchor-$I_{SB}O_{PhP}$	Anchor-OI	BinMin	Anchor-IO	AlignR (Ft, IP)
a. ☞ [SS][[SS][SS]] (SS)|(SS)(SS)							6
b. S[S[[SS][SS]]] (SS)|(SS)(SS)						*!	6
c. [SS][S[S[SS]]] (SS)|(SS)(SS)						*!	6
d. ☞ [[SS][SS]][SS] (SS)(SS)|(SS)							6

Here instead of a single optimal parse, the constraint hierarchy selects two equi-optimal ones. As in similar cases encountered in discussing other genres, these two parses are not completely identical but differ in their PhP boundaries. This indicates that the constraint hierarchy for PhP boundary delimitation becomes critical in differentiating these two parses:

(54)

6-syll lines SSSSSS	Binarity	Evenness	Long-Last
a. ☞ [SS][[SS][SS]] (SS)|(SS)(SS)	*	**	
d. [[SS][SS]][SS] (SS)(SS)|(SS)	*	**	*!

Parse (a) wins over (d) on account of satisfaction of LONG-LAST. Indeed, lines of the structure [SS][[SS][SS]] are metrically most harmonious[11]. Given that the sub-grammar comprises of both the foot-level and PhP-level parsing, we may suggest that for 6-syll lines, our claim that the metrical harmony can be grounded in the sub-grammar still holds.

7-syll lines constitute a similar scenario to 6-syll ones where the PhP boundary delimitation hierarchy plays a crucial role in selecting the optimal parse. As argued in (52) in Chapter 3, it is dominated by the foot-level parsing hierarchy, indicated below with a solid line between them.

(55) 7-syll lines

Candidate parses	BINMAX	*PHP-FINAL-MONOFT	ANCHOR-$I_{SB}O_{PHP}$	ANCHOR-OI	BINMIN	ANCHOR-IO	ALIGNR (FT, IP)	BINARITY	EVENNESS	LONG-LAST
a. ☞ [[SS][SS]][S[SS]] (SS)(SS)|(S)(SS)					*		10			
b. [[SS][SS]][[SS]S] (SS)(SS)|(S)(SS)				*!	*	*	10			
c. [SS][[SS][S[SS]]] (SS)|(SS)(S)(SS)					*		10	*!*	***	
d. [SS][S[S[SS]S]] (SS)|(SS)(S)(SS)				*!	*	**	10	*!*	***	

Thus, to summarize, *Ci* upholds our conclusion reached so far for the other genres, namely, for any given line type, the grammatical structure of the optimal parse under the sub-grammar always meshes with that shared by the metrically most harmonious lines.

[11] It is of interest to note that my informants frowned upon lines of the structure [[SS][SS]][SS] as ësomewhat heavy-headedí but convergingly preferred lines of the structure [SS][[SS][SS]], which puts the heavy part towards the end. This intuitive preference is exactly captured by LONG-LAST.