

Realization of Linguistic Prosody in Shakespeare's Songs*

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1. Introduction

Many linguists and musicologists have pointed out the similarities between music and language in their analysis on the “textsetting” in songs. The term “textsetting” is used to refer to the correspondence between text (or words) and tune (cf. Hayes (to appear)). They propose some systems to explain how to produce well-formed textsettings. The most important rule on the textsetting is “prominence matching” (Dell and Halle (to appear)). For example, in English songs, Stress Matching, which requires corresponding between linguistic and musical stresses, is assumed (Hayes and Kaun (1996)).

Although Stress Matching is generally accepted in the studies on textsetting in English songs, we can find some non-matching lines between the linguistic and musical stresses. Such exceptional correspondence is called “mismatch”. The aim of this paper is to examine how the mismatched line is produced and received as well-formed textsetting. I focus attention on the mismatches in the noun phrases from 160 songs, whose words are written by Shakespeare (Duffin 2004).¹

This paper is organized as follows. In the next section, we review the linguistic prosody of noun phrases and musical meter. Section 3 presents our empirical results of mismatch distribution and provides a generalization of them. Section 4 presents concluding remarks.

2. Linguistic Prosody and Musical Meter

To show non-matching between linguistic and musical stresses, we should understand where the stresses should fall in general. Before we observe the mismatch facts, let us confirm linguistic prosody and musical meter in this section.

2.1. Prosody of Noun Phrases in English

Stress assignment depends on whether the words consisting of the noun phrases are content words or function words. In general, content words (e.g., nouns, verbs, adjectives, adverbs, or interrogatives) are stressed, while functional words (e.g., prepositions, pronouns, auxiliary verbs, conjunctions, articles or particles) have little lexical meaning and no stress. First, let us consider some simple cases:

- (1) a. the s^ummer

b. *her plán*

Each of noun phrases in (1) consists of a function word (i.e., *the, her*) and a content word (i.e., *summer, play*). Stress falls on the only nouns unless the nouns are referred in previous discourse. This is because function words are not stressed. The stress assignment in noun phrases consisting of more than one word is determined by the combination of words in noun phrases and by which class the words belong to.

When a noun phrase has more than one content word, the stress assignment is more complicated. The most prior rule is the Bing (1980)'s "noun phrase prominence principle," which yields a consistent assignment of stress. According to her rule, nouns with no previous discourse are always stressed. In particular, the placement of primary stress in the noun phrases consisting of more than one content word depends on the rule as in (2):

(2) *hòt sùmmer*

In (2), *hot* and *summer* are both stressed because they are content words. Moreover, the noun *summer* is more highly stressed than the adjective *hot* by Bing's rule.

Moreover, the contextual meanings also affect the assignment of stress of the noun phrases. For example, Bing's rule is not applied in the sentence with contrastive focus. Let us consider the following example:

(3) This job is for a *yóunger* person. (Bolinger (1986:93))

The noun phrase *a younger person* is used in contrast to an older person. We will say as in (3) when the job is not apt for the older person perhaps because it is physical labor. The violation of Bing's rule is allowed because of various contextual meanings. There is, however, not enough space to explain them all here. In this paper, I will refer to the effects of contextual factors only when they cause the exceptional stress assignment such as in (3).²

Compound nominals are similar to noun phrases in that they are constructed by a head nominal and one or more than one modifier(s). However, they are different from each other in stress assignment. The examples in (4) show the difference.

- (4) a. *blàck bóard*
 b. *bláck-bòard*

The examples in (4) both consist of a descriptive adjective and a noun. While phrasal stress of the noun phrases such as (4a) falls on the noun, primary stress of

the compound nominal such as (4b) does on the adjective. If linguistic prosody of noun phrases is strictly realized in song meter, the difference between phrasal stress and compounding stress would be realized. That is to say, the phrasal nominal should be inserted into weak-strong position in musical meter, while the compound nominal should be inserted into strong-weak position in it. Contrary to our expectations, we can find some phrasal nominals with exceptional assignment. The difference of mismatch frequency between phrasal nominals and compound nominals gives a hint to show where the mismatches can occur.

We have seen the general stress assignment in noun phrases. In the studies on textsetting in songs, it is concerned with where the stressed or non-stressed syllables are assigned in musical meter. The next subsection shows the metrical structure of music and the relation between linguistic prosody and musical meter, explaining how Stress Matching works.

2.2. *Musical Meter*

Western music, in general, has some rhythmic patterns produced by the combination of a strong beat and one or more weak beat(s). The patterns are repeated, and the cyclic rhythms (or musical times) are born. The metrical structures of music with the cyclic rhythms are indicated by the grids as in the followings:

(5) a. 4/4 times

```

      x           x           x
      x    x    x    x    x
      x x x x x x x x x x
      . . . x x x x x x x x x x x x x x x x . . .

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b. 6/4 times

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      x                   x                   x
      x           x           x           x           x
      x x x x x x x x x x x x x x x x x x x x x x . . .

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The 4/4 and 6/4 times in (5) are mainly used in Shakespeare's songs. In grids, the higher columns of *x*'s designate stronger beats. Take the metrical structure of 4/4 times given in (5a) for example. The strongest beats, that is, the first beats in the bars are shown by the columns with four *x*s. The columns with three *x*s, which correspond to the third beats in the bars, are also strong but weaker than the first beats. The columns with one *x* and two *x*s correspond to the second and

fourth beats respectively. The grids in (5a) tell that 4/4 times have the alternating rhythm of a strong and a weak beats (or ...SWSW...). In the 6/4 times given in (5b), the alternating rhythm of a strong beat and two weak beats (...SWWSWW...) is shown. The cyclic rhythms are maintained from beginning to end in the same tunes unless any change of rhythm is ordered. Thus, the level of stressing in musical meter is determined by the position of an event in a bar.

2.3. *Stress Matching*

Let us consider now the “matched” cases, where word or phrasal stresses are realized in songs by the assignment of them to musical strong positions. The matching between linguistic stress and musical stress is governed by Stress Matching proposed by Hayes and Kaun (1996:10) and many other linguists and musicologists.

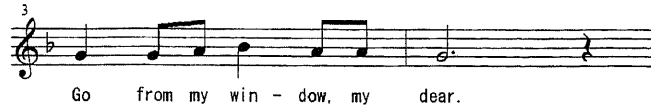
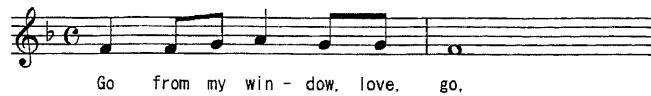
(6) Stress Matching

The rises and falls of stress within the line should be matched to the rises and falls of the metrical pattern.

The rule requires not only that the linguistically stressed elements be assigned to musical strong positions but also that the difference of stress level between stressed syllables be reflected on song meter.³ The rule is regarded as the most important rule of the writer’s competence of composition (Lerdahl and Jackendoff (1983), Temperley (2001), Kiparsky (2006) and Dell and Halle (to appear)).

We notice the power of the rule when we observe song data. The following examples, whose source is the same passage, are shown by the different ways of indicating. In (7a), two lines extracted from *Go from My Window* sung in the drama *Lucrece* are expressed in the score. The metrical structure is shown by the grids in (7b). The text is given in (7c), where the capitalized syllables or words show the ones assigned to the musical strong positions, that is, the first or the third beats in fourth beats. The slash indicates a bar line. The first beat position in a bar is filled with any sound, and the sound inserted into the position is perceived to be strongest in the bar.

(7) a.



(Lucrece 1089, *Go from My Window* 1.1-2)

b.

x									x
x				x					x
x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x
Go	from my win-			dow, love, go,					
x									x
x				x					x
x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x
Go	from my win-			dow, my dear.					

(ibid.)

- c. /GO from my WINDow, love, /GO,
/GO from my WINDow, my /DEAR.

(ibid.)

According to the linguistic prosody of noun phrases mentioned in 2.1, the (lexical) nouns of the noun phrases in (7) would be assigned to the musical strong positions. This is because the nouns are content words and stressed. As our expectation, the nouns, more precisely, the stressed syllables of them (i.e., *go*, *window* and *dear*) are placed on the columns with three or four xs.⁴ Moreover, the unstressed or less-stressed syllables are assigned to the weaker positions with one or two x(s). For example, let us consider the noun phrase *my dear*. The head noun *dear* is inserted into the strongest position with four xs, and the modifier *my* into the weakest position with an x. The stress level rises from the modifier to the noun. Thus the rising of stress is realized in the song.

Nominal compounds, which are similar to noun phrases consisting of one or more modifier(s) and a head noun, have a different stress pattern from the noun phrases. The pattern is as follows:

(8) a. /TITty, TIFfin: KEEP it STIFF in,

/FIRE-drake, PUCKey, /MAKE it LUCKey.

(*Macbeth* 4.1, *Black Spirits and White* 3,4)

b.

The image shows two staves of musical notation in 6/4 time. The first staff contains the lyrics 'Tit - ty, Tif - fin: keep ___ it stiff in,' with notes corresponding to the syllables. The second staff contains the lyrics 'Fire - Drake. Puck - ey. make ___ it Luck - ey.' with notes corresponding to the syllables. The underlined phrases in the text above correspond to the musical phrases in the notation.

(ibid.)

The underlined phrases in (8) are nominal compounds. In 6/4 times, the first and fourth beat are musical strong positions, and the former is strongest in a bar (see the grids in (5b)). The compound nominal *fire-drake*, which is stressed on the first element, is inserted into the strong-weak position. In general, the falling stresses in the compounds are also realized in the songs.

There are, however, some cases where Stress Matching is not applied as the followings:

(9) /JACK boy /HO boy, NEWS,

/THE cat is / IN the WELL,

(*Taming of the Shrew* 4.1, *Richard II* 5.5, *Jack Boy, Ho Boy* 1-1,2)

(10) Why /THEN comes IN the /SWEET o' the YEAR,

for the /RED blood REIGNS in the /WINTER's PALE.

(*Winter's Tale* 4.3, *When Daffodils Begin to Peer* 1.3, 4)

(11) /COME unto these /YELLOW SAND,

and /THEN take HANDS:

(*Tempest* 1.2, *Come Unto These Yellow Sands* 1.1)

Based on the stress pattern in noun phrases shown above, main stresses of the noun phrases would be given to the head nouns. In (9) to (11), however, the stresses are given to the preceding modifiers to the head nouns. Such non-correspondence between linguistically stressed elements and musical strong

positions in songs is a mismatch. There are not a few mismatch cases. Where are the mismatches admitted?

To answer the question, we define the mismatch in noun phrases as non-correspondence between non-head elements, which is nouns, and musical strong positions for a while. Although we can also find the exceptional stress assignment in noun phrase, we should adopt the above definition for a simple argument. The next section observes the mismatch cases and proposes a generalization to answer the question.

3. The Mismatch Occurrence or Non-Occurrence in Noun Phrases

In this section, we observe the mismatch cases in the noun phrases used in Shakespeare's songs, taking notice of the construction of the noun phrases. At the last of this section, I claim that the constructions affect the frequency of the mismatch occurrence.

3.1. Observation of the Facts

The mismatch cases are divided into a low-frequency set and a high-frequency set. As the typical cases of low-frequency, let us consider the cases where the mismatch occurs between the syllables within the same words. The examples show the mismatch in polysyllabic nouns.

- (12) a. There /DWELT a MAN in /BAByLON,
of /REpuTAtion /GREAT by FAME;
(*Twelfth Night* 2.3, *Merry Wives of Windsor* 3.1, *Merchant of Venice*
4.1, *There Dwelt a Man in Babylon* 1-2)

b.



(ibid.)

- (13) The /FIFTeenth DAY of /JULY with /GLIST'ning SPEAR and
/SHIELD,
A /Famous FIGHT in /FLANDERS was /FOUGHTEn IN the /FIELD:
(*As You Like It* 2.7, *Richard II* 2.3, *Rowland* 1-1,2)

In the polysyllabic noun *reputation*, the primary stress is given to the third syllable. On the basis of Stress Matching, the most highly stressed syllable in the word would be assigned to the strongest musical position, that is, the first beat in a bar. However, the primary-stressed syllable, in fact, is inserted into the third beat, which is weaker than the first beat, whereas the secondary-stressed syllable into the strongest musical position. That is a mismatch between the stressed syllables in the same words. The strength relation (strong-weak) between stressed syllables is often inverted in realization in song meter. We can find 13 mismatch cases and 180 non-mismatch cases in polysyllabic nouns. The ratio tells that the occurrence of mismatch between the syllables in the same words is rare. In particular, although there are some cases where the mismatch occurs between the stressed syllables, the mismatch seldom occurs between a stressed syllable and a non-stressed syllable.⁵

Based on the construction of the phrases, the mismatched phrasal nominal consisting of two or more words are divided into two groups: the first group is the noun phrases constructed by a functional modifier and a (lexical) noun, and the second group is the noun phrases constructed by a lexical modifier and a (lexical) noun.

The noun phrases in the former group are frequently used in Shakespeare's songs, but there are few cases with the mismatch. Here are some examples of the noun phrases:

- (14) /JACK boy /HO boy, /NEWS,
/THE cat is /IN the /WELL,

(= (9))

- (15) /HOLy, fair, and /WISE is she,
/THE heav'n such GRACE did /LEND her,
/THAT she MIGHT ad-/Mired be.

(*Two Gentleman of Verona* 4.2, *Who Is Silvia* 1.3-5)

- (16) Of /ALL the BIRDS that /EVer I see,
the /OWL is the FAIRrest in /HER degree,

(*Henry V* 3.7, *Nutmegs and Ginger* 1.2)

- (17) /MY cow and EKE my /CALF and RENT, /
/MY land and ALL my /TEnement. /

(*Taming of the Shrew* 2.1, *Joan, Quoth John* 3-4)

The underlined noun phrases (14)–(17) are constructed by an article or possessive

pronoun and a (lexical) noun. When the mismatch occurs in the noun phrases, the article and demonstrative adjective as in (14)–(17) are assigned to the strongest musical position in the scores, though they are functional words. There are only 13 mismatch cases out of 287 noun phrases having this type of construction. It is assumed that the low frequency is due to the absolute lack of stress of the function words.

By contrast, in the latter group, or when the modifier is a content word, the noun phrase has the high frequent occurrence of mismatch. Let us consider the following examples:

- (18) Why /THEN comes IN the /SWEET o' the YEAR,
 For the /RED blood REIGNS IN the /WINter's PALE.
(Winter's Tale 4.3, But Shall I Go Mourn 1.2, When Daffodils Begin to Peer 1.3,4)

- (19) From /Nature's laws he /DID declINE,
 For /SURE he was not /OF my MIND,
 He /CAREd not for /WOMenKIND
 But /DID them all disDAIN.
(Henry IV 5.3, Love's Labour's Lost 1.2, 4.1, Romeo and Juliet 2.1, Much Ado about Nothing 1.1, A Song of a King and a Beggar 1.5-8)

The underlined noun phrases in (18) and (19) consist of a non-pronominal possessive noun *winter's* and *nature's* and a lexical noun *pale* and *laws* respectively. The underlined noun phrases are inserted into the weaker musical positions than the position filled with the modifiers. We can see such correspondence in almost all noun phrases of this type. In the noun phrases, the modifier and noun are given equal stresses for some contextual factors.⁶

We can also observe that the mismatch occurs at high frequency in other types of noun phrases with two or more content words. We can give as the type of noun phrase. Adjective-noun phrases are commonly used in Shakespeare's songs. Half of 215 cases of this type of noun phrase is mismatch.

- (20) /COME unto these /YELlow SAND,
 And /THEN take HANDS:
(Winter's Tale 4.3, But Shall I Go Mourn 1.2, When Daffodils Begin to Peer 1.3,4)

- (21) Why /THEN comes IN the /SWEET o' the YEAR,
 For the /RED blood REIGNS in the /WINter's PALE.

(= (18))

Likewise, when the modifier is a present or past participle, half of the noun phrases are mismatched, though they may lack statistical significance because we do not have enough examples of the type of noun phrases.

(22) /LAWN as WHITE as /DRIven SNOW, /

/CYpress BLACK as /E'ER was CROW, /

(*Winter's Tale* 4.4, *Lawn as White as Driven Snow* 1.1-2)

(23) A-/MONG many NEWS re-/PORTed of LATE

as /TOUCHing the REbels, their /WICKed esTATE,

(*Pericles* 2.1, 4.4, *Romeo and Juliet* 3.2, 4.5, *Welladay* 1.-1,2)

(24) So /DYing LOVE lives /STILL,

O ho a /WHILE, but /HA ha HA,

(*Troilus and Cressida* 3.1, *Love, Love, Nothing but Love* 9,10)

(25) The /FIFteenth DAY of /JULY with /GLIST'ning SPEAR and /SHIELD,

A /FAMous FIGHT in /FLANDERS was /FOUGHTed IN the /FIELD:

(= (13))

The modifiers in the above underlined noun phrases are assigned to the strongest musical positions. Such mismatched correspondence occurs in half of 6 noun phrases with a present particle, and does in 6 cases out of 8 noun phrases with a past particle.

There seems to be many mismatch cases in the noun phrases consisting of two or more nouns, but some of them are "apparent" mismatch as shown in the following examples:

(26) /Under the /GREENwood TREE,

/WHO loves to /LIE with ME/

(*As You Like It* 2.5, *Under the Greenwood Tree* 1-1,2)

(27) Then to /SEA Boys, and LET her go /HANG.

(*The Tempest* 2.2, *The Master, the Swabber* 9)

On the based on Bing's stress assignment rule shown in section 2.1, the correspondence would be a mismatch, because the nouns *tree* and *boys* should take the strongest stress in each of phrases and be inserted into stronger musical positions than modifiers. However, the textsettings are not mismatch, because, in the noun phrases, not the nouns but the modifiers are most-highly stressed. The exceptional stress assignment is given by de-stressing of the noun. When the noun in a noun phrase is standard (or general) nouns, such as *thing*, *man*, *day* and

place, it is destressed because its meaning is common (Selkirk (1984) and Tarlinskaja (1989)).

(28) By adding one thing to my purpose nothing

(Tarlinskaja (1989:130), *Sonnet* 20.12)

In the underlined noun phrase, the noun *thing* with general meaning is not highly stressed, and the modifier is most highly stressed. The cases in (26) and (27) strictly realize their stress pattern, and therefore they are not mismatch.

The same apparent mismatch is observed in the following noun phrases consisting of more than two words:

(29) The /NEXT was Captain /NORris,

a va-/Llant MAN was / HE;

(*As You Like It* 2.7, *Richard II* 2.3 *Rowland* 2.1,2)

(30) The /WOUNDED MEN on /BOTH sides FELL,

most /PITeous FOR to /SEE,

(*As You Like It* 2.7, *Richard II* 2.3 *Rowland* 4.5,6)

The modifiers *variant* and *wounded* are inserted into the strongest musical position, whereas the head nouns *man* and *men* are inserted into the weaker musical position. One might see the assignment of the noun phrase to be mismatch, because not the noun but the modifier is assigned to the strongest musical position. I think that the stress assignment is brought about by destressing of the head noun with general meaning. Therefore, I do not consider the cases as mismatch.

We cannot find mismatch cases in the noun phrases whose head noun is proper one, as follows:

(31) King /LEAR once Ruled /IN this LAND,

with /PRINCEly POWER and /PEACE.

(*King Lear*, *King Lear and His Three Daughters* 1.1-2)

The proper noun *Lear* in (31) are inserted into the strongest musical position. There is no mismatch case in 29 noun phrases with a proper noun. I think that this type of the noun phrase seldom may be affected by contextual factors. As we have seen, there are differences in the frequency of mismatch occurrence between the phrasal nominals. The difference arises from their composition.

There is a crucial difference between phrasal nominals and compound nominals in the occurrence or non-occurrence of the mismatch, even if they are constructed by the same elements (or words). Let us consider the following case:

(32) There /WAS a RARE Rat-/CATcher,

did a-/BOUT the COUNtry /WANder,

(*Romeo and Juliet* 3.1, *The Ratchatcher* 1.1-2)

As seen in the last of 2.1, compounds are primary-stressed on their modifier elements. When a noun element is inserted into the strongest musical position, a mismatch occurs. In (32), the head noun element *-catcher* is assigned to the strongest musical position. Therefore, the correspondence is mismatch. We can find only 3 mismatch cases in the compound nominals. In the other 14 cases of this type of noun phrase, the stressed syllables of the modifiers are assigned to the strongest musical position. The result comes from a difference in stress assignment between compound nominals and phrasal nominals. As noted by some studies, the difference of stress level between the syllables of the compound nominals is greater than that between the stressed syllable of adjective and the stressed syllable of noun in adjective-noun phrases. It is claimed that the difference is realized in poetic and song meters (Palmer and Kelly (1992)). It gives a hint of where the mismatch in noun phrases occurs. In the next subsection, I will represent that the frequency of mismatch is affected by the difference of stress level between elements in noun phrases.

3.2. *An Account of Mismatch in Noun Phrases*

Based on their frequency, the mismatch cases are divided into the following two classes. In the following classes, “noun” means “lexical noun” unless they are not pronoun.

(33) a. Noun Phrases with Low Frequency of Mismatch

(article +) noun, possessive pronoun + noun,
noun + proper noun, (article +) compound

b. Noun Phrases with High Frequency of Mismatch

possessive noun + noun,
(article +) adjective + noun, (article +) adjectival noun + noun,
(article +) + present particle noun, (article +) past particle + noun,

The class of (33a) mainly consists of a function word and a content word, while the class consists of (33b) of the noun phrases with two or more content words. Thus, the frequency of the mismatch occurrence is sensible to the construction of the noun phrase. The classification leads to the generalization in (34):

(34) The greater the difference in stress level is, the higher of the frequency of the mismatch between linguistically stressed elements and the musically stressed positions is.

Although the generalization might be too simple to show where the mismatch occurs, examination of correspondence between linguistic and musical stresses is an important process to identify mismatch occurrence. Many other factors affect the occurrence of mismatch between linguistic prosody and musical meter in songs.

4. Concluding Remarks

I summarize the conditions on correspondences between syllables and musical positions in the noun phrases in Shakespeare's songs, as follows:

- (i) In principle, the linguistically stressed elements (or syllables) are assigned to the musically stressed positions (Stress Matching).
- (ii) The greater the difference in stress level is, the higher of the frequency of the mismatch between linguistically stressed elements and the musically stressed positions is.

The conditions explain the tendency of the mismatch occurrence or nonoccurrence in the noun phrases. However, other contextual conditions may affect the occurrence. Some of the cases considered as mismatch may be produced by any other exceptional stress patterns.⁷ The contextual and other linguistic and musical factors for mismatch occurrence need further discussion.

NOTES

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¹ Shakespeare often sets his texts to folk music, for example, *Greensleeves*. Other songs are composed by William Elderton, Thomas Deloney, Samuel Rowlands, and Richard Johnson, and other ballad writers (Duffin (2004)). Although the differences between the writers are also important in the analysis of the correspondence between text and tune, they are not considered here.

² Noun phrases may be most highly stressed by sentential stress assignment. Sentential stress is also determined by contextual information, for example, which element is focus in a sentence. I want to examine the effects of local (linguistic) stress, that is, word stress and phrasal stress. Perhaps sentential stress, which is the most highly stress in a sentence, is

realized in song meter. Therefore, we are not concerned with whether sentential stress is given to the noun phrases.

³ Although there are some rules which require the correspondence between linguistic stress and musical stress, I consider Hayes and Kaun's version in (6) to be proper for purpose of this paper.

⁴ The noun *love* is linguistically stressed, but it is inserted into the weak position with an *x*. The mismatched correspondence may be allowed by the rule governing the forms of *lines*.

⁵ One may say that the mismatch in *fifteenth day* is an effect of Stress Shift. The shift rule called rhythm rule causes the following Stress Shift.

(i) a.

	*		*
*	*	*	*
* *	*	* *	*

the fiftèenth dáy → the fifteenth dáy

The Stress Shift brings about strong-weak-strong rhythm as a result. If Stress Shift occurs in the noun phrase, the correspondence shown in (13) is not a mismatch. I cannot find any other cases as such. Whether Stress Shift occurs or not, or whether the case is a mismatch or non-mismatch are open to question.

⁶ The mismatch facts as in (18) and (19) may be caused by the exceptional stress assignment. But even so, it is interesting that mismatch cases have the overwhelming majority.

⁷ Informational semantics also give some exceptional stress pattern. For instance, the words as given or old information are destressed as in the noun phrase *the lusty horn* in (i).

(i) a. The /HORN, the HORN, the /LUSTy HORN
IS /NOT a THING to /LAUGH to SCORN.

(As You Like It 4.2, What shall He Have 7-8)

b.

The musical notation consists of two staves in 4/4 time, key of B-flat major. The first staff contains the lyrics: 'The horn, the horn, the lusty horn is'. The notes are: G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter). The second staff contains the lyrics: 'not a thing to laugh to scorn.' The notes are: G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter), G4 (quarter), Bb4 (quarter). A triplet of three eighth notes (G4, Bb4, G4) is marked above the first three notes of the second staff.

(As You Like It 4.2, What shall He Have 7-8)

In the last noun phrase in the first line, the adjective *lusty* is assigned to the first beat, which is the strongest in a bar. The head noun *horn* would be assigned to the first beat, but it is assigned

to the fourth beat, which is the weaker position. One might think that is a mismatch. However, the correspondence strictly follows the rule of linguistic prosody, and therefore is not a mismatch. The main stress of the noun phrase *the lusty horn* is given to the modifier *lusty*. Such way of stressing is brought by repetition. The noun *horn* in *the lusty horn* has just been mentioned by the repetitions. The last noun phrase adds the modifier to the given noun phrase *the horn*. In the context like that, the newly added element is highly stressed and the given noun is destressed. Thus the exceptional stress patterns cause fake mismatches. Such correspondences are brought about by the strict realization of linguistic prosody, and they are not mismatched.

APPENDIX

I select some examples from the above mismatch data and indicate their scores here.

(13)'

The fifteenth day of July with
A famous fight in Flanders was

glist' -ning spear and shield, _____
fought - en in the field: _____

(14)'

Jack boy, ho boy, news, the cat is

in the well.

(16)'

Of all the birds that e - ver I see, the

Owl is the fair - est in her de - gree

(18)'

Why then comes in the sweet o' the year, for the
 red blood reigns in the win ter's pale.

Detailed description: This block contains two staves of musical notation. The first staff is in 6/8 time, key of B-flat major, and contains the melody for the first line of lyrics. The second staff continues the melody for the second line of lyrics, featuring a triplet of eighth notes.

(20)'

Come un - to these_ yel - low sands, and
 then_____ take_____ hands:

Detailed description: This block contains two staves of musical notation. The first staff is in 3/4 time, key of D major, and contains the melody for the first line of lyrics. The second staff continues the melody for the second line of lyrics, featuring a triplet of eighth notes and ending with a double bar line.

(22)'

Lawn as white_____ as dri - ven Snow,
 Cy - press black as e'er was Crow.

Detailed description: This block contains two staves of musical notation. The first staff is in 6/8 time, key of B-flat major, and contains the melody for the first line of lyrics. The second staff continues the melody for the second line of lyrics, featuring a triplet of eighth notes.

(24)'

So dy - ing love lives still, O ho a
 while, _____ but ha ha ha, O

Detailed description: This block contains two staves of musical notation. The first staff is in 6/8 time, key of D major, and contains the melody for the first line of lyrics. The second staff continues the melody for the second line of lyrics, featuring a triplet of eighth notes.

(26)'

Un - - - der the green - wood tree,
 who loves to lie with me.

The image shows two staves of musical notation in G major (one sharp) and 4/4 time. The first staff contains the melody for the first line of text, with a dotted quarter note for 'Un', a quarter rest, another dotted quarter note for 'der', a quarter rest, a quarter note for 'the', a quarter note for 'green', a quarter note for 'wood', and a dotted quarter note for 'tree'. The second staff contains the melody for the second line of text, starting with a triplet of eighth notes for 'who', followed by quarter notes for 'loves', 'to', 'lie', and 'with', and ending with a quarter note for 'me'.

(27)'

Thento Sea Boys, and let her go hang_____

The image shows a single staff of musical notation in G major and 4/4 time. The melody consists of quarter notes for 'Thento', 'Sea', 'Boys,', and 'and', followed by a dotted quarter note for 'let', a quarter note for 'her', a quarter note for 'go', and a dotted quarter note for 'hang' which is followed by a long horizontal line indicating a long note.

(32)'

There was a rare Rat - cat - cher. dida -
 -bout the cou - try wan - der, The

The image shows two staves of musical notation in G major and 4/4 time. The first staff contains the melody for the first line of text, with quarter notes for 'There', 'was', 'a', 'rare', 'Rat -', 'cat -', and 'cher.', followed by a dotted quarter note for 'dida -'. The second staff contains the melody for the second line of text, starting with a triplet of eighth notes for '-bout', followed by quarter notes for 'the', 'cou -', 'try', 'wan -', and 'der.', and ending with a quarter note for 'The'.

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