Two Kinds of Metrical Shift Observed in Apparent Exceptions to the Text-setting Rules
for English

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This study examines a body of examples in which the text-setting rules proposed for English (Hayes 2009, for example) fail to predict the well-formed matching of stressed syllables with strong beat, and proposes that the apparent exceptions are no longer exceptions if we introduce two kinds of metrical shift into text-setting, which is another word for text-to-tune alignment. One is a leftward metrical shift at the level of a surface structure in the sense of Temperly (1999) and Temperly & Temperly (2011). This mechanism explains why a substantial number of exceptions are no longer exceptions in my data. The other is a rightward metrical shift at the level of a surface structure, which I propose by examining other types of exceptions in my data. The latter type of metrical shift introduces the idea of 'phrase' into text-setting.

English has been characterized as having a strong tendency of matching stressed syllables with musically strong beats (Lerdahl & Jackendoff 1983; Halle & Lerdahl 1993). This study employs the Syllable Distribution Algorithm (hereafter the SDA) summarized by Hayes (2009). The present study deals with cases where the SDA fails to predict the well-formed matching of stressed syllables with strong beats. It also utilizes the idea of setting up two levels of metrical structures proposed by Temperly (1999); his analysis of syncopation in rock led to a claim that in a 'de-syncopated' structure, that is, in a deep structure, a syllable is in its 'correct' position, but it is shifted one eighth or sixteenth beat to the left in a surface structure.

Prior to this study, the author examined the first half of the scores with a time signature of 4/4, which amounted to 20 pieces in total, in a songbook titled *The Billboard Hot 100: 50th Anniversary Songbook*, and found that among 209 examples in which stressed syllables fail to appear on the strong beats, that is, on the first or the third beat, 187 examples (that is, 89.5%) are preceded by either an eighth-note or a sixteenth-note. The present study will present a breakdown of the 187 examples of apparent exceptions to the SDA, and show that (i) a substantial number of exceptions are resolved if we suppose that an alignment line is shifted leftward by a beat at the level of the eighth or the sixteenth note (= syncopated) in a surface structure, while a well-formed matching is secured in a deep structure (see Figure 1 on next page); it also suggests that (ii) non-nuclear syllables could be squeezed into weaker beat positions if a nucleus of a phrase (in terms of intonation phrase) is given prominence and hence appears on the strongest beat, that is, immediately after a bar. The present study shows that this type of alignment manifests itself as a rightward metrical shift in a surface structure (see Figure 2 on next page). These two types of metrical shifts are at the composers' discretion, and will explain a variation of rhythms in a score.

References

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Figures

In the following figures, solid lines indicate alignments in a deep structure; dotted lines indicate alignments in a surface structure, which reflects a distribution of notes in an actual score.

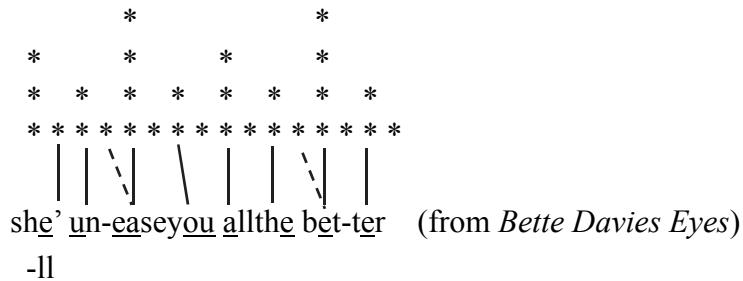Figure 1: Leftward metrical shift in a surface structure

Figure 2: Rightward metrical shift in a surface structure