Comparing rhythm in speech and music: the case of English and Polish

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Although linguistic and musical rhythm have been widely studied by linguists and musicologists alike, there is still a scarcity of quantitative studies that would examine the extent of the relationship between those two domains. A study by Patel et al. (2006) suggests that some characteristic features of a culture's language are reflected in its instrumental music. The method applied in the study used the *normalised pairwise variability index* (*nPVI*), a measure of temporal patterning in speech, introduced by Low (1998) and used primarily for comparing *stress-timed* and *syllable-timed* languages (Grabe and Low 2002). By comparing the variability of vocalic duration in recorded speech with *nPVI* values computed from music notation, Patel et al. concluded that the language rhythm of English and French is mirrored in the music of corresponding English and French classical composers of the 19th c.

Although this interdisciplinary approach has been investigated in recent studies (e.g. McGowan and Levitt 2011), it still brings more questions than answers. Firstly, it is difficult to ascertain whether the method can be applicable to all musical forms, as classical music from the 19th c., a period identified as the age of musical nationalism, limits the scope of the studies. Secondly, relying solely on musical notation means omitting recorded live performances that might carry different rhythmic information. Finally, while English and French represent a s*tressed-time* and a *syllable-timed* language respectively, the differences found in the study by Patel et al. might not be so evident for other languages or dialects.

The aim of this study is to attest the method used in Patel et al. (2006) by examining a different set of data, focusing on English and Polish rhythm in speech and music. The speech corpus consisted of 20 English and Polish recorded sentences. The music corpus was divided into two categories and consisted of recordings of live performances and musical notation: (1) the classical music category comprised of a selection of 19th c. themes of English and Polish composers (e.g. Elgar's and Chopin's), while (2) the folk music category comprised of a set of traditional English and Polish folk songs (Luboff and Stracke 1969). It can be predicted that there will be a similar discrepancy between the *nPVI* values for Polish and English language and musical rhythm as in the study by Patel et al.. However, the interrelationship between those results is difficult to foresee and might vary from the original experiment. The outcomes of this study will hopefully shed more light on the relationship between language rhythm and musical rhythm and open new paths for future interdisciplinary studies.

References

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