

## A CRITICAL COMPARISON OF RHYTHM IN MUSIC AND NATURAL LANGUAGE

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**Abstract.** *This paper presents an analysis of the resemblances and differences between music and natural language starting from the rhythmic dimension. It then applies the results for the natural language processing in order to discriminate types of texts. The first part of the paper contains an extended state of the art on the rhythm in both music and natural language. In the second part, starting from the ideas discussed previously, an experiment is presented, which was done for comparing, from the rhythmic point of view, two corpora: one of famous speeches and a second containing Wall Street Journal articles.*

**Keywords:** *Rhythm, natural language processing, musical rhythm, discourse analysis, poetry analysis, rhetorics*

### 1. Introduction

Rhythm may be viewed in several ways. First of all, it is a permanent reality for us, at least if we take into account heart beats, breath, the sequence of days, nights, seasons and, not the last, music and dance. Meanwhile, it refers also to the quest for harmonious proportions in all creative acts.

Rhythm can be temporal, as in the regularity of musical beats, the pattern of stressed and unstressed syllables in speech, or spatial, as in the alternance of colors and distances in paintings, sculptures, or architecture. Through rhythm, the thoughts and feelings of the artists, performers, and audiences are brought to resonance, which facilitates the understanding and recognition of the creative piece.

#### 1.1. Rhythm production across arts

Hebert [11] identifies three stages of rhythm production: the segmentation into units, the arrangement, and the seriation of units. Examples of units include pulses and beats (in music), phonemes, graphemes, and semes (in linguistics), colors and shapes (in paintings). Arrangement refers to the temporal and/or spatial distribution of units over the creative piece. Seriation is also of temporal and/or spatial nature.

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