

The conceptualization of music in semantic frames based on word sketches

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INTRODUCTION

It has been standard practice in terminology management to define specialized knowledge categories as complex conceptual networks in which concepts are connected by ontological relations. With the emergence of Frame-based Terminology (Faber, 2012) that applies Frame Semantics (Fillmore, 1985; Fillmore and Atkins, 1992), it has become evident that specialized knowledge can be more adequately defined by using semantic frames as conceptual structures that allow for a precise description of frame elements and their corresponding lexical units.

Apart from few suggestions of automatic utilization of semantic relations (Materna, 2014; McCarthy et al., 2015; León-Araúz, San Martín, and Faber, 2016), the construction of semantic frames still relies heavily on semiautomatic corpus based methods and manually analyzed data. A dynamic terminological description of a specialized domain that takes into account conceptual metaphors, variation and polysemy as integral components of specialized knowledge needs to be based on a rigorous linguistic analysis, but can benefit greatly from an automatic linguistic description such as offered by word sketches (Kilgarriff et al., 2014).

RESULTS

Grammatical and lexical information in the analysed word sketches has confirmed that the category of Music is conceptualized in terms of two types of conceptual relations: spatial and temporal. Most semantic frames display both modes of conceptual organization.

MUSIC IN SPATIAL RELATIONS

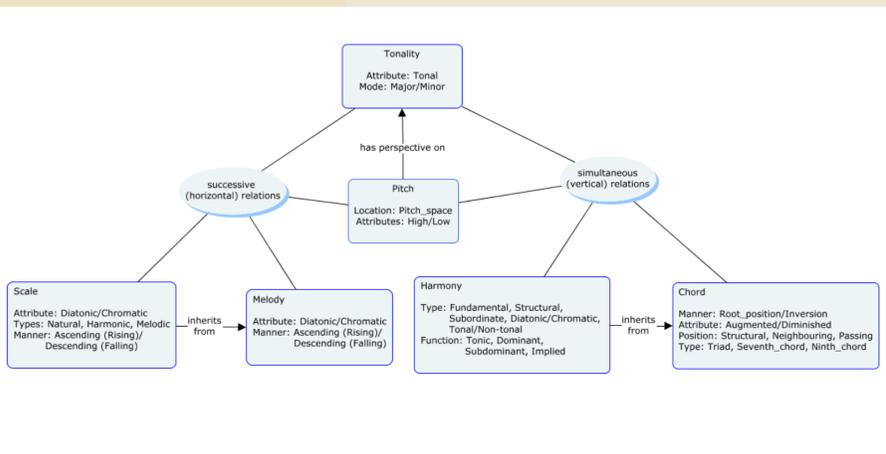


Figure 2. Schema of the semantic frame Tonality

MUSIC IN TEMPORAL RELATIONS

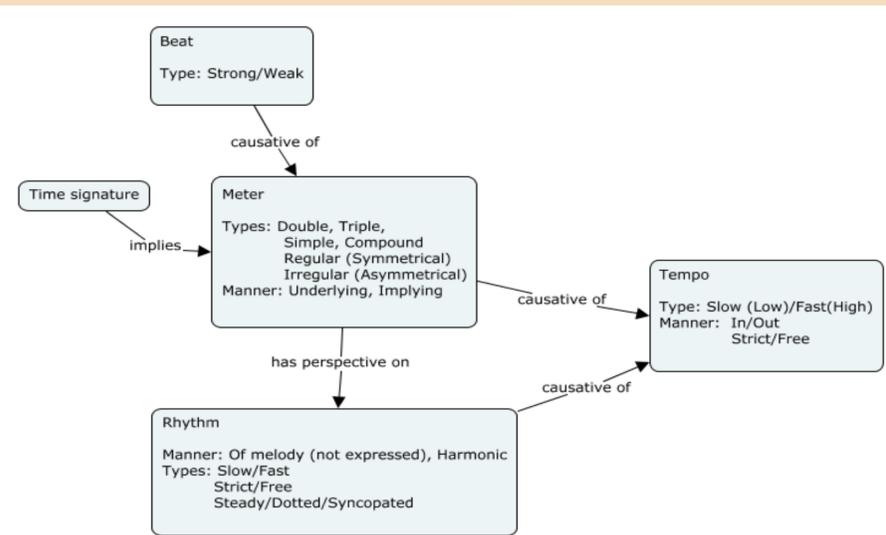


Figure 3. Schema of the frames Meter, Rhythm and Tempo

OBJECTIVES AND METHODOLOGY

Several semantic frames in the domain of music (e.g. TONALITY, PITCH, TEMPO) are constructed out of word sketches extracted from a small corpus of books in music theory. The analysis is carried out in order to test the reliability of the linguistic information in word sketches as opposed to the information extracted by a common terminological practice of analysing concordances and knowledge-rich contexts, followed by expert validation. Special attention is given to verbs as the indicators of metaphorical meaning of terminological units.



Figure 1. Word sketches of chord and pitch with the most relevant lexical information

Semantic frames are first constructed based on the extracted word sketches of most frequent terms. Frame elements are defined following the FrameNet methodology, which has been adapted, where necessary, to better reflect the nature of specialized knowledge categories (Faber, León-Araúz, and Prieto Velasco, 2009; Ostroški Anić, 2015). To evaluate the relevance of linguistic information in the frames, key terms used for the extraction of word sketches are analysed in corpus concordances, and additional relevant information is marked accordingly.

CONCLUSIONS

The results have shown that the most frequent terms in the corpus denote concepts related to the spatial organization of music categories. Collocations in which the term is a modifier or is modified by a noun or adjective point mostly to *type_of* conceptual relations, while verbal collocations in which the term is a subject or an object prove to be relevant the most in determining figurative meaning, as well as frame to frame relations. Since the analysed corpus was compiled out of literature on basic musical concepts, the conceptual information reflected in the extracted word sketches provides a good basis for terminological analysis. In order to arrive at valid networks of specialized frames and conceptual relations, corpus analysis must always be followed by expert validation.

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The research is conducted within the project *Problems of basic contemporary musical terminology in Croatia* (CONMUSTERM), financed by the Croatian Science Foundation.

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