Title: An Audio-Based Strategy for Investigating Style Evolution in Western Choral Music

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Applying computational methods to humanities research opens up new possibilities for conducting research on the history of Western classical music. In this study, we combine several methods to analyze a corpus of audio recordings. First, we use a deep neural network to detect the presence of the twelve chromatic pitch classes and calculate tonal complexity features based on their distribution over the circle of fifths. Second, we compute so-called "evolution curves," which map style-relevant features onto historical timelines. By combining these methods and interpreting our complexity feature as a proxy for compositional style, we are able to produce valuable insights into the stylistic evolution over long periods of time. To this end, we apply our methods to the Carus Audio Corpus, a corpus of 5,729 audio recordings with detailed metadata annotations spanning a period of more than 450 years of choral and sacred music. With this, we re-examine several hypotheses on the stylistic evolution of composers from 1550 to 2020, updating our previous findings thanks to our improved methods. For example, we observe differences in complexity between vocal and instrumental music during only two time periods: From 1730 to 1800, vocal music appears to be more complex than instrumental music; however, from 1850 onwards, the opposite seems to be true, with instrumental works showcasing higher complexity values. Finally, we extend our previous research by taking a closer look at individual composers. We examine the age-related stylistic development of multiple composers as they were influenced by historical and biographical contexts. For instance, we observe higher complexity values for many composers during their thirties, and lower complexity values during their fifties. All in all, our findings demonstrate the potential of computational methods in corpus studies.

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Figure:

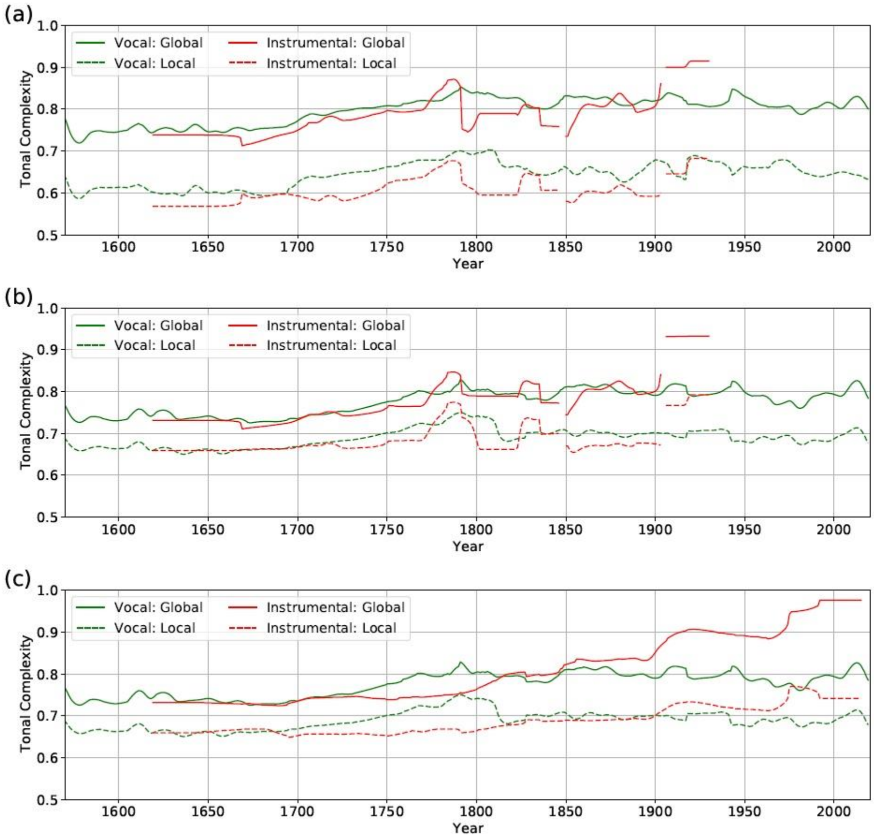

Figure Comparing ECs for global and local complexity separated into vocal and instrumental music based (a) on the CAC based on SP, (b) on the CAC based on DL and (c) on the combined dataset (CAC + CrossEra) based on DL.

Presentation: We would prefer to present our work as a poster.