

MEI based tools for score comparison and analysis

The project "Beethovens Werkstatt" seeks to examine genetic processes in Beethoven's work. So far, the primary focus was a microscopic perspective on individual measures with many scribal interventions. This resulted in highly complex, extremely detailed and very specialized MEI encodings of these measures. In our second project module, we take a different approach, moving from that microscopic to a macroscopic perspective on works that Beethoven rearranged by himself. Op. 14/1 is such a case, where Beethoven rearranged the original piano sonata into a string quartet. According to our approach, we're not looking for changes in manuscripts, but instead compare the final texts of these arrangements. This means that we deal with very common MEI encodings that don't come anywhere close to the complexity we needed in our first project module. The question is whether a comparison of "clean" encodings of such arrangements allows to identify (and classify) variants, and through them typical genetical processes, or not. For a first prototype, we selected six perspectives we want to focus our analysis on: 1. "plain comparison", 2. "genetic comparison", 3. "single note comparison" (see figure 1), 4. "melodic line comparison" (see figure 2), 5. "harmonic comparison" and 6. "event density".

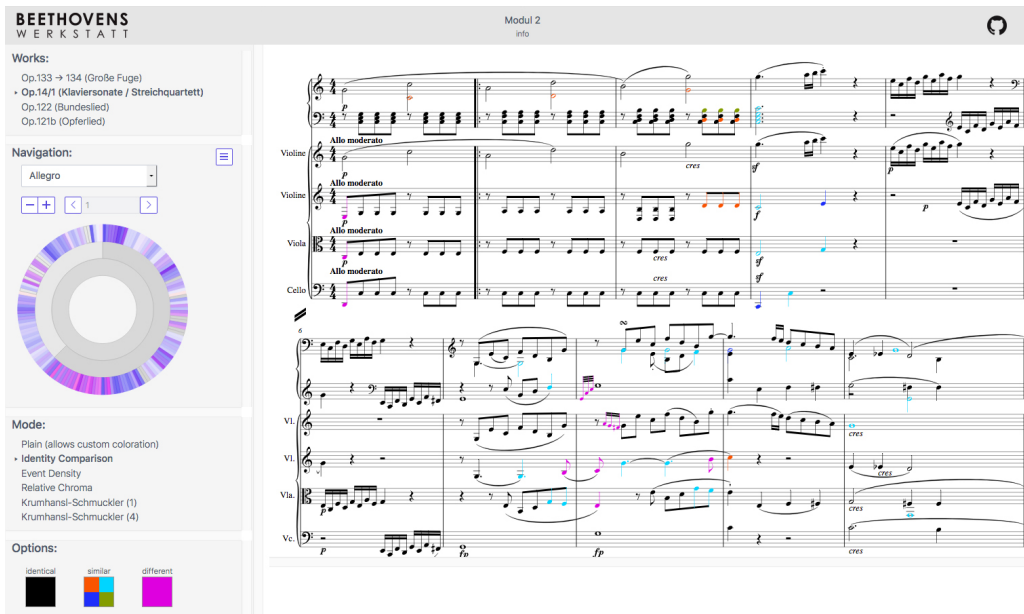


Figure 1 Single note comparison of Beethoven's two versions of op. 14/1.

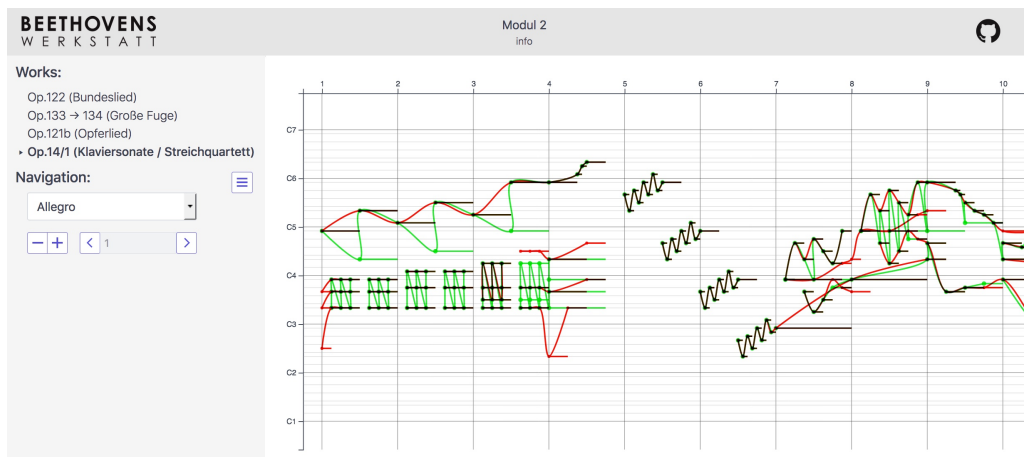


Figure 2 Screenshot of the abstract melodic line comparison of "Beethovens Werkstatt's" new prototype for the second module "Beethoven arranging his own works".

Whereas the "single note comparison" is meant to show differences or similarities in a strict "vertical" sense for single notes, the "melodic line comparison" aims to do the same for the horizontal level of the score and visualizes a broader context of the relationship of the two versions. Already in its current prototype status this works quite well: Both MEI files are rendered onto the same canvas, using a (modified) piano-roll layout. Through color highlighting, it becomes evident which parts of the composition have been copied without changes, transposed, replaced by new material, or modified in some other way. As the "melodic line comparison" operates on sounding pitch, it has also proven to be a useful proofreading tool, facilitating to find erroneous use of @accid.ges which wouldn't be visible in a Verovio rendition alone.

In our poster, we want to present the possibilities how our MEI based tools can support and broaden the process of analyzing and comparing musical data and to discuss the six perspectives mentioned above, which were developed on the basis of at least four of Beethoven's arrangements (op. 14/1, "Opferlied" op. 121b, "Bundeslied" op. 122 and "Große Fuge" op. 133/134).