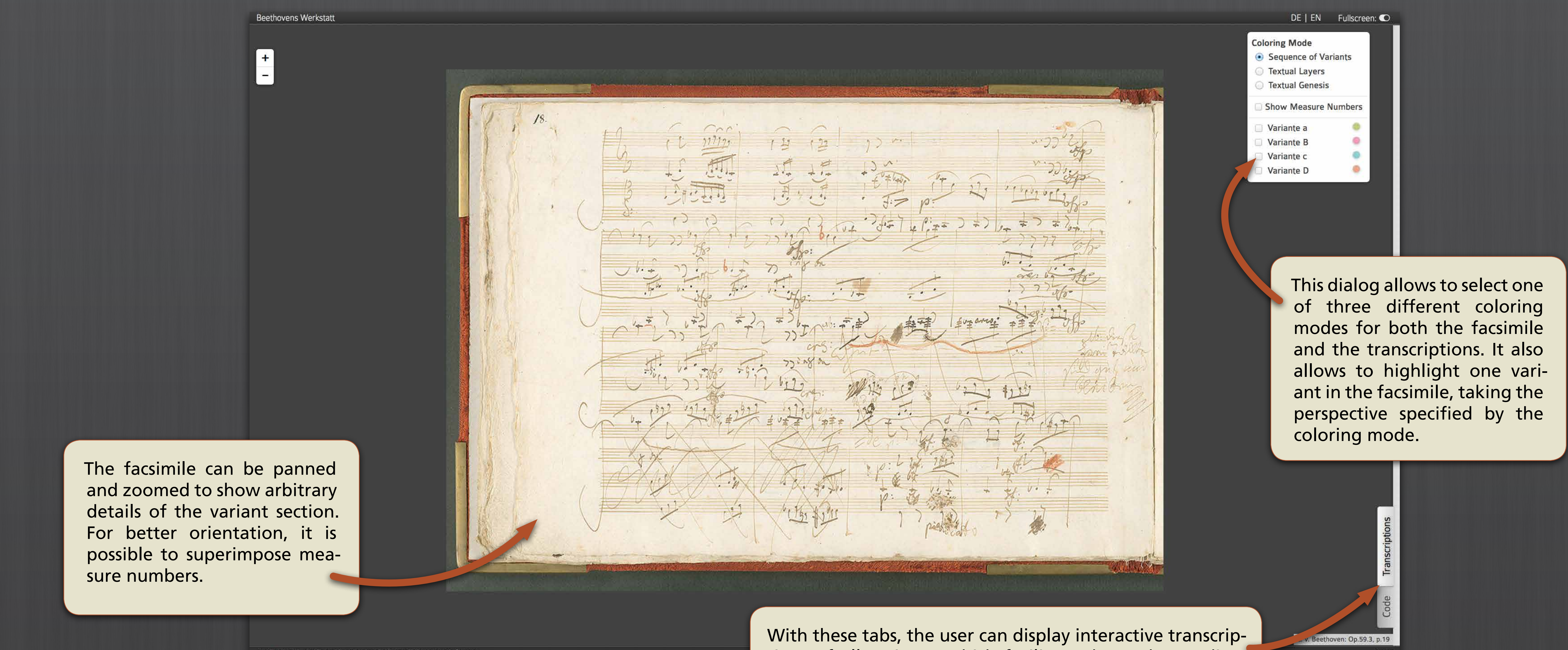


# A Tool for Illustrating Genetic Processes

*Beethovens Werkstatt* seeks to explore the dynamic compositional processes in Beethoven's œuvre and make them accessible in exemplary digital editions. For this purpose, within the first module of the project, a prototype browser-based edition has been created, which illustrates the writing progress of the musical text in one example from Beethoven's manuscript for op. 59 no. 3. It provides digital transcriptions of each variant that Beethoven tried in his alterations. These transcriptions are generated by *Verovio* (<http://verovio.org>) using the underlying XML encodings, which follow a custom *MEI* model (<http://music-encoding.org>). This model has been specifically enriched to accommodate the requirements of *genetic criticism* in the field of music.

The user of the edition may take different perspectives on the variant section by choosing a specific *coloring mode*. The first mode just shows the sequence of variants that Beethoven wrote down while altering and revising his manuscript. The second mode, preliminary called *textual layers*, colors the musical text (both in the facsimile and the transcriptions) according to the writing layer in which it has been added. This means that only those parts of a variant get the color of the new text that Beethoven wrote during the associated modifications. That way, it becomes immediately visible how the musical text 'stacks up' during multiple revisions and alterations. The third coloring mode focusses on the development of the musical text as such. Here, musical symbols are colored according to their variance from the preceding layers: only new content gets a new color, while existing content preserves its color, no matter if it has been written anew or just stayed valid. With this perspective, the user can immediately see how Beethoven tried new approaches, sometimes reverted to existing solutions, and kept other parts of the text stable throughout multiple writing processes.

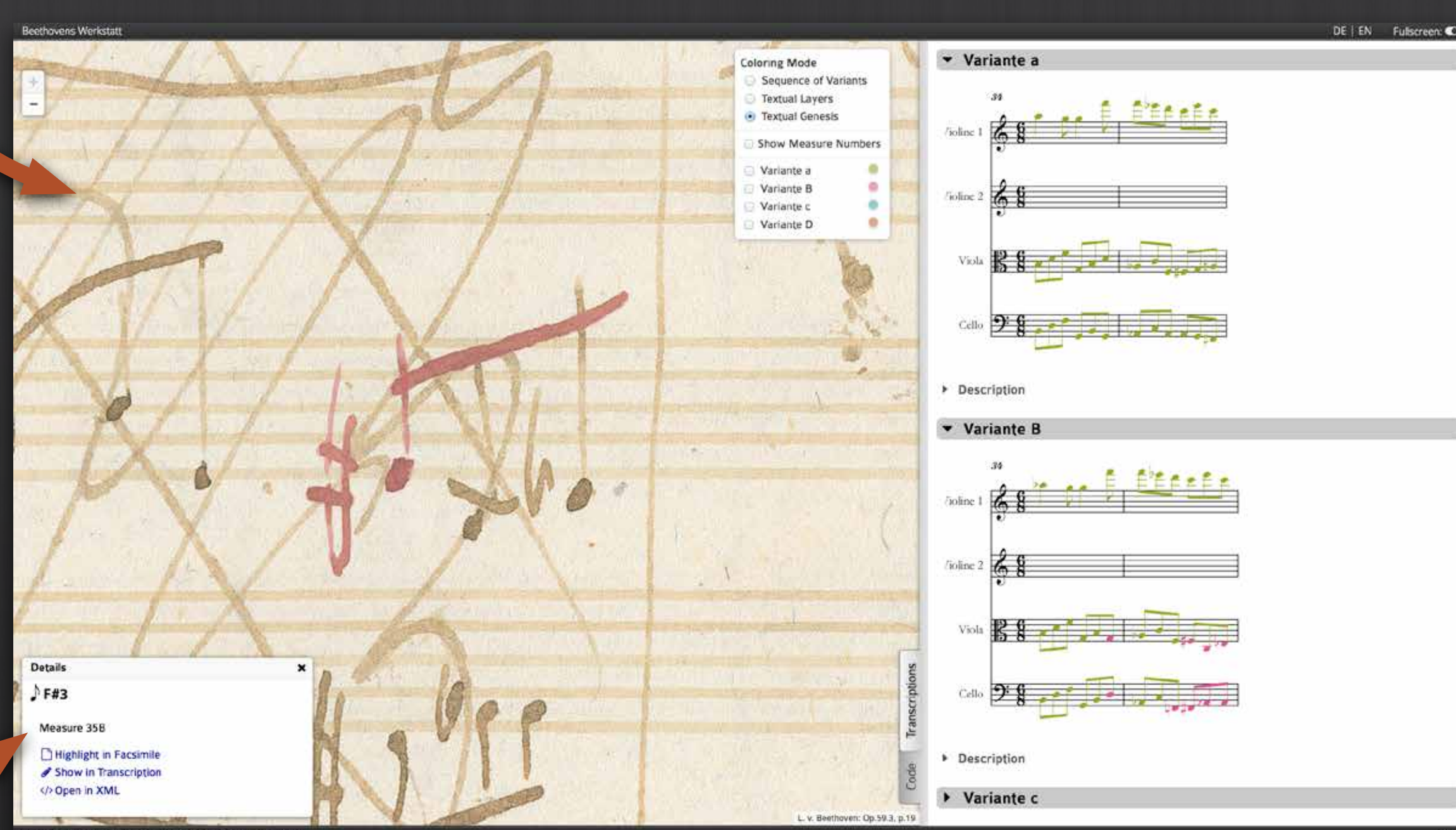
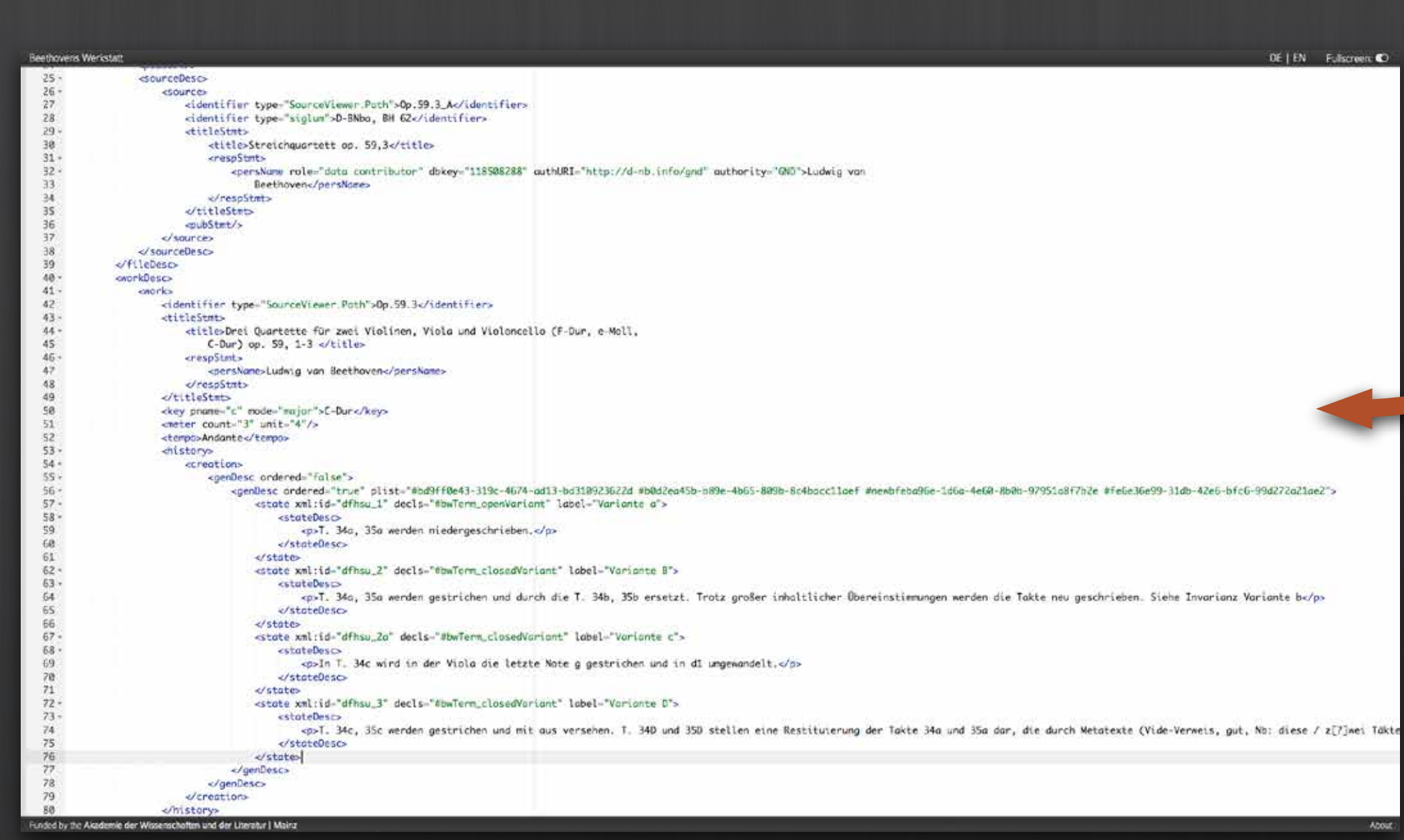
The example used for this poster is taken from Beethoven's working manuscript for the second movement of his String Quartet op. 59 no. 3, composed in 1806. The autograph manuscript is in the possession of the Beethoven-Haus, Bonn (BH 62).



The facsimile can be panned and zoomed to show arbitrary details of the variant section. For better orientation, it is possible to superimpose measure numbers.

This dialog allows to select one of three different coloring modes for both the facsimile and the transcriptions. It also allows to highlight one variant in the facsimile, taking the perspective specified by the coloring mode.

With these tabs, the user can display interactive transcriptions of all variants, which facilitate the understanding of the underlying compositional processes. Alternatively, he can access the MEI encoding of the full section, which contains all editorial information in a very condensed way. Both views are depicted in the two screenshots below.



By clicking on any musical symbol (either in the facsimile or one of the transcriptions) a small dialog box is displayed with the most relevant information about that symbol. From here, it can be accessed in the facsimile, the transcriptions and the MEI encoding.

<http://beethovens-werkstatt.de/demo>