

# A model for encoding genetic processes

## Additional elements from Beethovens Werkstatt

The project *Beethovens Werkstatt* currently investigates small excerpts from various Beethoven manuscripts in order to identify common principles of his compositional process.

Of course, this requires to closely trace various writing operations, and therefore the project seeks possibilities to encode such genetic processes in MEI. Originally, we thought this would require a complete new module for MEI, with all kinds of additional elements and concepts. After about two years of work on Beethoven's manuscripts, though, it becomes evident that MEI already covers many areas sufficiently well.

However, some aspects of genetic editions require additional concepts not yet provided by MEI. With this poster, we want to propose some models, which we believe may be useful for other projects and contexts as well.

## Chronological Order

The element `<genDesc>` (genetic description) bundles information about the textual development of a work, which can be traced in one or more sources. Even in the case of an unknown or only partly-known chronological order of states and / or changes, information about their relationships can be provided using their `@next`, `@prev`, `@follows` and `@precedes` attributes.

Individual revisions to the text, encoded using existing elements like `<del>` and `<add>`, refer to the child elements of `<genDesc>` using a new `@changeState` attribute. This allows to group deletions etc. into multiple revision campaigns.

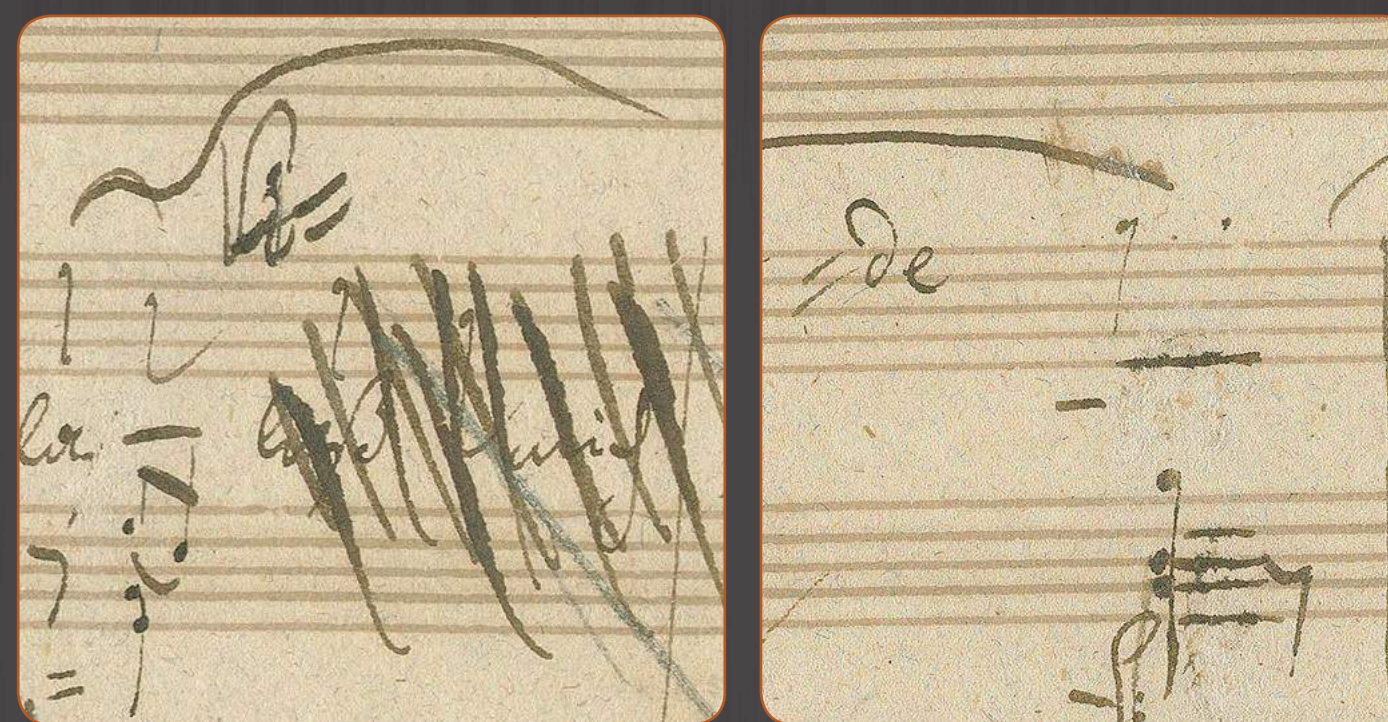
```
<!-- inside <creation>: -->
<genDesc ordered="false">
  <state xml:id="state1"/>
  <state xml:id="state2"
precedes="#state3"/>
  <state xml:id="state3"/>
</genDesc>
<!-- in body: -->
<del changeState="#state2">
  ...
</del>
```

## Setup of Folios

In many cases, the setup of folios to signatures and eventually the textblock of a manuscript is of interest from a genetic perspective – Beethoven often ripped off pages in order to delete the text on them. The existing elements – `<pb/>` and `<surface/>` – don't seem to be adequate to encode modifications to the manuscript itself. Therefore, we added `<foliumSetup>` to `<physDesc>`. It allows to nest `<folium>` and `<bifolium>` elements to mimic the setup of the manuscript.

```
<foliumSetup>
  <bifolium outer.recto="#surface1" inner.verso="#surface2" inner.recto="#surface7" outer.verso="#surface8">
    <del changeState="#state3">
      <bifolium outer.recto="#surface3" inner.verso="#surface4" inner.recto="#surface5" outer.verso="#surface6"/>
    </del>
  </bifolium>
</foliumSetup>
```

## Metatexts



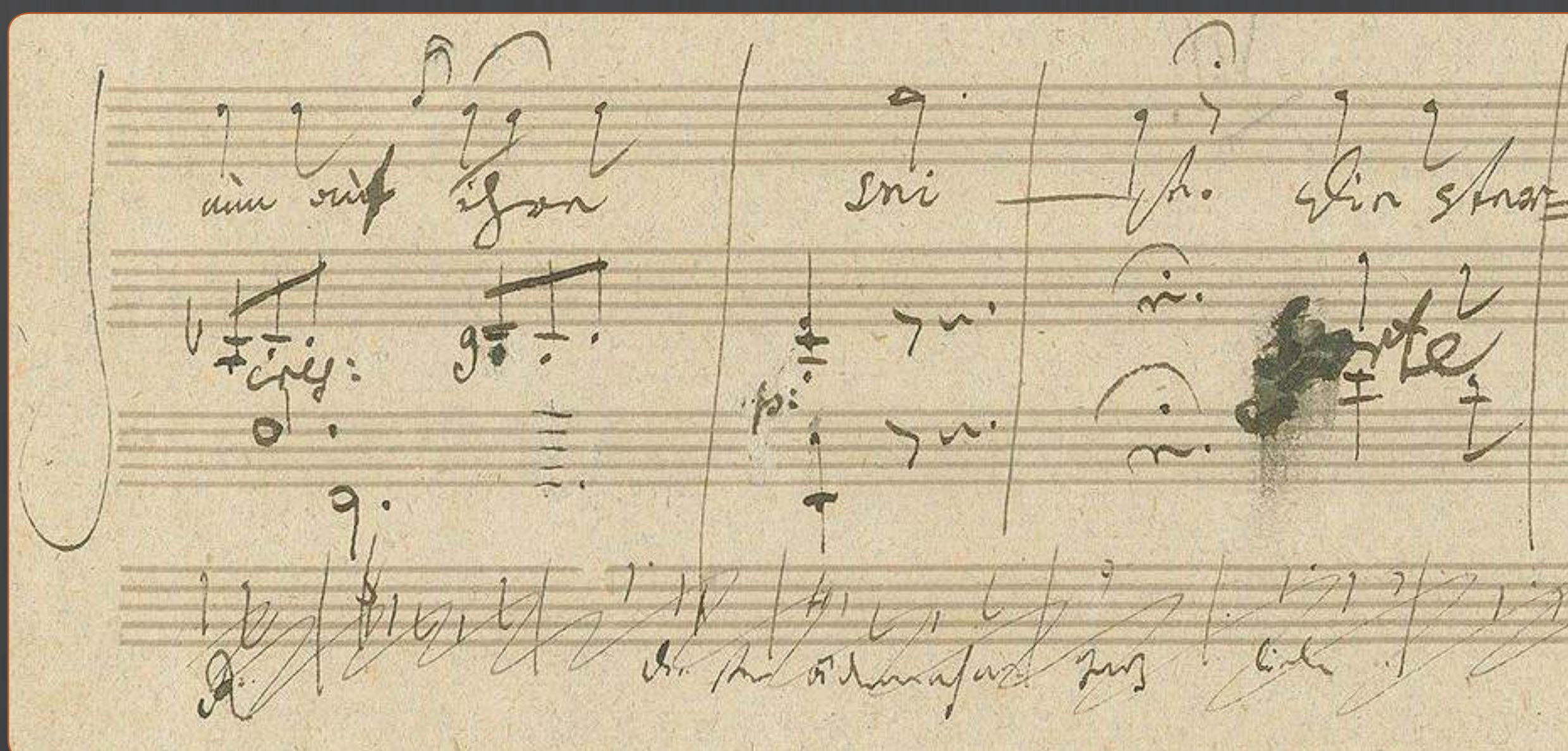
Ludwig van Beethoven: *Neue Liebe, neues Leben* op.75/2, Autograph, Beethoven-Haus Bonn, Sammlung H. C. Bodmer, HCB Mh 34, fol 5r / 6v

Metatexts are „texts“ which provide information *about* the writing process and the genesis of the written musical text. They have no musical meaning on their own. Metatexts include comments and other intended inscriptions by the composer, but also unintentional traces like distribution of whitespace etc.

*Beethovens Werkstatt* borrows an element from the TEI called `<metaMark>` to encode such metatexts. In order to classify the purpose of the metamark, it has a `@function` attribute, which may take the following values: *confirmation, addition, deletion, substitution, clarification, question, investigation, restoration, navigation*.

See an example from Beethoven's op.75/2 showing a „Vide“ mark on folio 5v and 6r. They intend to guide the reader through the score.

```
<metaMark xml:id="m1" staff="1" tstamp="4" target="#m2" function="navigation">
  Vi=</metaMark>
<!-- on next page: -->
<metaMark xml:id="m2" staff="1" tstamp="4" target="#m1" function="navigation">
  =de</metaMark>
```

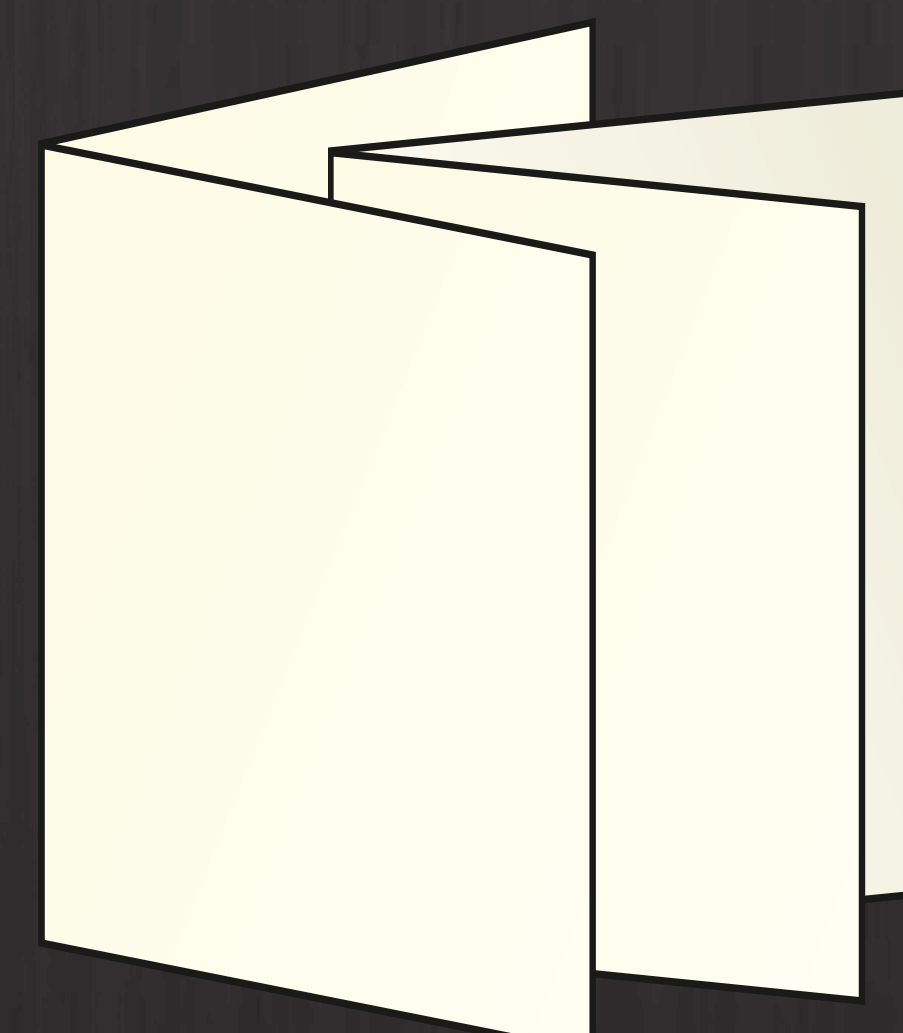


The lowest staff contains a draft that is independent of the staves above. Parts of this material are later reused. The draft doesn't differentiate between the singer and piano parts. Ludwig van Beethoven: *Neue Liebe, neues Leben* op.75/2, Autograph, Beethoven-Haus Bonn, Sammlung H. C. Bodmer, HCB Mh 34, fol 5r

## Drafts

Drafts and sketches differ in important ways from completely textualized material. *Beethovens Werkstatt* encodes them in a separate tree when they don't share the same score setup as the more complete material. This is somewhat similar to the distinction between `<score>` and `<parts>`, and hence, we added a new `<drafts>` element inside `<mdiv>`.

```
<mdiv>
  <score>...</score>
  <drafts>
    <draft>
      ...
    </draft>
  </drafts>
</mdiv>
```



<https://github.com/BeethovensWerkstatt/Data-Model>