MEISE - an editor for encoded music

A Musicological Use-Case: Variants

Julian Dabbert, Joachim Veit (Universität Paderborn, Musikwiss. Seminar Detmold/Paderborn)
The Structure of Musical Symbols

Basic ingredients of a note symbol:

a simplified example:

a quarter note
The meaning of this quarter note depends on its positional or historical environments.

A few examples:
The Structure of Musical Symbols

The sounding pitch of the note depends from the clef...
(Example: treble or bass clef)

d
f
The Structure of Musical Symbols

or on the accidentals used (in combination with the clef)...

d sharp
The Structure of Musical Symbols

or on the performing instrument.
(The sounding pitch of a Horn in F is a fifth lower than the notated one.)

Horn in F = sounding pitch:

30 June, 2010
The Structure of Musical Symbols

*) Based on his historical knowledge about appoggiatura a singer of 18th and 19th century music will automatically transform this example at the end of a phrase form d-d to e-d.
The Structure of Musical Symbols

Last example: adding further symbols to a note.

tied note:

resulting sounding note (duration):

half note
The Structure of Musical Symbols

Consequences:
Music notation is a very complex phenomenon that makes any attempt of encoding a hard-work procedure.

Encoding attempts in the realm of XML produce a huge amount of code. Even if the XML approach is the most promising one at the moment, the acceptance of these verbose encodings in the musicological community depends from tools which facilitate the work of the encoder.
Encoding of Musical Symbols

Coloratura from Mozart's motet "Exultate, jubilate" KV 165, movement III, bb. 50-58 with hypothetical variants

A = Autograph, final version
S1 = Sketch no. 1
S2 = Sketch no. 2

Three lines of a hypothetical example of variants of a singer's line
Encoding of Musical Symbols

To give an example: The three lines of this hypothetical case of variants of a singer's line from Mozart's motet "Exultate, jubilate" in an automatical transformation to MusicXML (the leading standard for the exchange of music) produces more than 2,000 lines of encoding.

Further information: http://www.recordare.com
Encoding of Musical Symbols

Coloratura from Mozart's motet "Exultate, jubilate" KV 165, movement III, bb. 50-58 with hypothetical variants

A = Autograph, final version
S1 = Sketch no. 1
S2 = Sketch no. 2

And the newly developed MEI-encoding even in an abridged version of the encoding needs about 300 lines of code.

further information: http://www.music-encoding.org
Variants and their representation

Nevertheless …

Coloratura from Mozart's motet "Exultate, jubilate" KV 165, movement III, bb. 50-58 with hypothetical variants

A = Autograph, final version
S1 = Sketch no. 1
S2 = Sketch no. 2

… the enormous advantages of encoded forms of music have to be emphasized!
Variants and their Representation

Boundaries of the presentation of variants in printed media

Coloratura from Mozart's motet "Exultate, jubilate" KV 165, movement III, bb. 50-58 with hypothetical variants

In printed media we have only the possibility to isolate the singer's part from the orchestra and to print it in this form of synopsis in order to present the (highlighted) differences between the versions of these bars in an easily comprehensible form to the reader …
Variants and their Representation

Boundaries of the presentation of variants in printed media

Coloratura from Mozart’s motet "Exultate, jubilate" KV 165, movement III, bb. 50-58 with hypothetical variants

\[ A \quad \text{allelujah} \quad \text{allelujah} \]

\[ S_1 \quad \text{allelujah} \quad \text{allelujah} \]

\[ S_2 \quad \text{allelujah} \quad \text{allelujah} \]

A = Autograph, final version
S1 = Sketch no. 1
S2 = Sketch no. 2

or we have the possibility to print it as a kind or rag rug.

30 June, 2010
Variants and their Representation

Boundaries of the presentation of variants in printed media

This solution was successfully used by Huck/Dieckmann where we find several layers of variants above and beneath the system – but this was only possible because we have music for only two voices!

Source:
Variants and their Representation

Coloratura from Mozart's motet "Exultate, jubilate" KV 165, movement III, bb. 50-58 with hypothetical variants

A = Autograph, final version
S₁ = Sketch no. 1
S₂ = Sketch no. 2

Both forms (synopsis with isolated singer's part or rag rug) are only "graphical" solutions and these variants are not "usable", e.g. for producing performance materials.

But the format of the Music Encoding Initiative (MEI) which has published a stable version after a DFG/NEH-Workshop-project by the end of May 2010, has a very elegant way for encoding variants in a form which is very similar to the TEI format with "apparatus" and "readings". To give you at least two short examples:
Variants and their Representation

two identical variants in the sketches 1 and 2:

30 June, 2010
Variants and their Representation

three varying forms: Autograph, Sketch 1, Sketch 2
For this very elegant way of a documentation of the variants by combining ongoing identical bars with fanned-out variant section there is at the moment no possibility to render these data.

This is the starting point for Julian Dabbert's MEI-Score-Editor (MEISE), which allows us to depict variants on the fly – because of an only seven month's work still in very preliminary forms, but nevertheless for the first time simultaneously.

Live-Demo:
MEI - Score-Editor
The MEISE editor consists of 4 integrated views
MEISE Workbench: Navigator view

- Project explorer is native eclipse view
- Used for browsing, selecting and opening MEI files
- Can be replaced by TextGrid navigator after functional integration
MEISE Workbench: Outline view

- Outline view is used for navigation/orientation in the open MEI document
- Used either on logical level: tree structure of document elements
- Or on graphical level: Thumbnail view of graphical representation
MEISE Workbench: Note view pane

- View visual representation of musical score
- Focus is on clarity instead of prettiness
MEISE Workbench: Properties view

- Properties can be displayed and modified
- Classification and structural organization of properties
- Modification of properties that have no representation in note view pane
- Realtime repainting of elements' representation on property change

![Properties view screenshot]

30 June, 2010
MEI: Available music repository

-KernScores (StanfordU) offers a plethora of available MEI files
-MEI files are generated via conversion script

http://kern.ccarh.org/
MEISE: Haydn variants

- Variants are displayed in different colors
- Visual filters allow exclusive displaying of symbols of the selected variant

MEISE: Immediate visual refresh

- Change of property values changes visual representation
- Zooming allows precise visual representation

A change here...
...causes a change there!
MEISE: Immediate model refresh

- Change of property values changes MEI model
- Stack of undo/redo commands for edit actions

MEI model source:

```xml
<note
duration=2 64
/>
```
MEISE: Future work

- Integration of basic notation symbols and elements
- Productive score editing via drag&drop
- Proper rendering of CWMN via multipass approach
- Intuitive GUI specialized for editing
Conclusion

Thanks for your attention!