Musical Symbols at the Digital Age

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BachoTeX, 30th April 2014
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Good, less good, . . .

Writing music, not texts

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Express:

• pitches ↔ accidentals,

• rhythms,

• dynamics,
Musical Symbols

Express:

• pitches $\leftrightarrow$ accidentals,
• rhythms,
• dynamics,
• ornaments (Baroque music,
Musical Symbols

Express:

• pitches \(\iff\) accidentals,

• rhythms,

• dynamics,

• ornaments (Baroque music, jazz),
Musical Symbols

Express:

• pitches \(\Leftrightarrow\) accidentals,

• rhythms,

• dynamics,

• ornaments (Baroque music, jazz),

• additional information.
Arranging parts within a score

Expressing:

• *sequential processes*,
Arranging parts within a score

Expressing:

• *sequential processes*,

• *parallel processes*,
Arranging parts within a score

Expressing:

• *sequential processes*,

• *parallel processes*, with *synchronisation points*
Arranging parts within a score

Expressing:

- **sequential processes,**
- **parallel processes,** with **synchronisation points or randomly,**
Arranging parts within a score

Expressing:

• *sequential processes*,

• *parallel processes*, with *synchronisation points* or *randomly*,

• *linking* meta-information.
What is a Typesetting System for Music?

Developing new works?
What is a Typesetting System for Music?

Developing new works? Often, workarounds are to be put into action.
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Developing new works? Often, workarounds are to be put into action.

Digitalising works of the past?
MusiXTEX

Any symbol may be pictured. Users are wholly in charge of placement.
MusiXTeX

Any symbol may be pictured. Users are wholly in charge of placement.

But source texts are very difficult to maintain without a pre-processor (BachoTeX 2011).
Other typesetting systems

LilyPond, MuseScore, . . .
Other typesetting systems

LilyPond, MuseScore, . . .

Planned. . . not planned. . .
Musical symbols in Unicode

A large place is given to other (historical) systems, e.g., Gregorian chant.
Musical symbols in Unicode

A large place is given to other (historical) systems, e.g., Gregorian chant.

Unicode categories:

- So ← Symbol, Other,
Musical symbols in Unicode

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Unicode categories:

- So ⇐ Symbol, Other,
- Mc ⇐ Mark, spacing Combining,
A large place is given to other (historical) systems, e.g., Gregorian chant.

Unicode categories:

- \( \text{So} \leftrightarrow \text{Symbol, Other} \),
- \( \text{Mc} \leftrightarrow \text{Mark, spacing Combining} \),
- \( \text{Cn} \leftrightarrow \text{other, not assigned (extra-symbols)} \).

(Show.)
Symbols

More modern than MusiXTeX or LilyPond $\leftarrow$ micro-accidentals.
Symbols

More modern than Musi\TeX or LilyPond $\Leftarrow$ micro-accidentals.

OK for jazz ornaments.
Missing ornaments

Many Baroque ornaments are missing. (Show.)
Many Baroque ornaments are missing. (Show.)
Replace them by corresponding realisations?
Missing ornaments

Many Baroque ornaments are missing. (Show.)

Replace them by corresponding realisations?

Controversial!
Music, not books!

Text $\implies$ accented letter = combining accent + letter (possibly already accented).
Music, not books!

Text $\rightarrow$ accented letter = combining accent + letter (possibly already accented).

Music: OK for information about:

- slur, accents, bow positions,
- dynamics,
- grace notes,
- ...
Stems!

All the stems figured are up.
Stems!

All the stems figured are up. Putting such a stem up or down is a matter of style, isn’t it?
Stems!

All the stems figured are up. Putting such a stem up or down is a matter of style, isn’t it?

Often, but not always! (Show.)
Chords

Putting stems up or down, again.
Chords

Putting stems up or down, again.

Repeated notes. (Show.)
Conclusion

Good effort, but:
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presently, no musical typesetting system uses it, as far as I know,
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Unicode’s musical symbols are supposed to belong to left-to-right writing systems, whereas the process specified has many dimensions.