History of Accidentals in Music

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TUG & BachoTeX 2017 — 2nd May 2017
Motivation

Origins

Using Accidentals

Accidentals and LilyPond

Micro-intervals

Ending
Why This Talk

The history of these signs’ origin is interesting.
Why This Talk

The history of these signs’ origin is interesting.
Some typographic rules.
Why This Talk

The history of these signs’ origin is interesting.
Some typographic rules.
Some accidentals included into Unicode ← debatable about microintervals.
What Is an *Accidental* in Music?

Raise a note’s pitch by a semitone $\rightarrow \#$
What Is an *Accidental* in Music?

Raise a note’s pitch by a semitone \( \rightarrow \# \)
Lower it by a semitone \( \rightarrow \flat \)
What Is an *Accidental* in Music?

- Raise a note’s pitch by a semitone $\rightarrow \#$
- Lower it by a semitone $\rightarrow \flat$
- Restore it at its normal pitch $\rightarrow \natural$
Originally

Hexachords:
Hexachords:

- *Natural*: A, B, C, D, E, F, G.
Hexachords:

- **Natural:** A, B, C, D, E, F, G. ↔ Hymn to John the Baptist.
Hexachords:

- **Natural**: A, B, C, D, E, F, G. ← Hymn to John the Baptist.
- **Soft**: F, G, A, B♭, C, D.
Hexachords:

- **Natural**: A, B, C, D, E, F, G. \(\iff\) Hymn to John the Baptist.
- **Soft**: F, G, A, B\(_\flat\), C, D.
- **Hard**: G, A, B, C, D, E.

Originally

In German:

- B is for B, H is for B, \(\iff\)
- Dur for Major, moll for minor.
Hexachords:

- **Natural**: A, B, C, D, E, F, G. \(\leftrightarrow\) Hymn to John the Baptist.
- **Soft**: F, G, A, B\(_b\), C, D.
- **Hard**: G, A, B, C, D, E.

In German:

- B is for B\(_b\), H is for B\(_b\).
Originally

Hexachords:

- **Natural**: A, B, C, D, E, F, G. ↔ Hymn to John the Baptist.
- **Soft**: F, G, A, B♭, C, D.
- **Hard**: G, A, B, C, D, E.

In German:

- B is for B♭, H is for B♮;
- *Dur* for *Major*, *moll* for *minor*.
Graphically

\[ b \leftarrow \text{round } b \]
Graphically

\[ b \leftarrow \text{round } b \text{ (soft } b \text{)} \]
Graphically

\[ b \leftarrow \text{round } b \ (\text{soft } b) \ [\text{bé mol}] \]
Graphically

\[ b \leftarrow \text{round } b \text{ (soft } b\text{) [bé mol]}:\]

\[ b \]
Graphically

\[ b \leftarrow \text{round } b \text{ (soft } b\text{) [bé mol]}: \]

\[ b \]

\[ b \leftarrow \text{square } b \]
Graphically

\[ b \leftarrow \text{round } b \text{ (soft } b \text{) [bé mol]}: \]

\[ b \]

\[ b \leftarrow \text{square } b \text{ [bé quarré]} \]
Etymologically

*sharp, flat* ← so high (resp. low) as to be out of tune
Etymologically

*sharp*, *flat* $\leftarrow$ so high (resp. low) as to be out of tune
French *dièse* $\leftarrow$ Latin *diesis*
Etymologically

sharp, flat \(\leftarrow\) so high (resp. low) as to be out of tune
French dièse \(\leftarrow\) Latin diesis
First, a quarter tone interval, then a semitone one.
Accidentals were appearing

B♭, F♯, E♭, ...
Accidentals were appearing

B♭, F♯, E♭, ...

in connection with scales
Double accidentals

Raise or lower a note’s pitch by *two* semitones.
Double accidentals

Raise or lower a note’s pitch by *two* semitones. First $b$, then $\#$
Double accidentals

Raise or lower a note’s pitch by two semitones.
First b, then #
First x, then bb
Double accidentals

Raise or lower a note’s pitch by \textit{two} semitones.
First $\flat$, then $\#$
First $\natural$, then $\flat$
in connection with \textit{minor} scales.
How to Use Accidentals

Before the note’s head.
How to Use Accidentals

Before the note’s head.

_Above_ or _below_ ← restored (P. Attaingnant).
How to Use Accidentals

Before the note’s head.

*Above* or *below* $\equiv$ restored (P. Attainingant).
Parentheses $\equiv$ *courtesy* accidentals.
Many accidentals were implicit or *relative* (N. Bernier).
Now many publishers have got rid of this ridiculous complication, an accidental has absolute meaning.
More Double Accidentals

Now many publishers have got rid of this ridiculous complication, an accidental has \textit{absolute} meaning.
Accidentals and Bars

→ the following note and any repetition of it at the same octave and in the same bar, unless cancelled by another accidental.
Accidentals and Bars

→ the following note and any repetition of it at the same octave and in the same bar, unless cancelled by another accidental. Ancient scores.
Accidentals and Bars

→ the following note and any repetition of it at the same octave and in the same bar, unless cancelled by another accidental. Ancient scores. Modern scores.
Key signatures

Correctly managed by music software.
Key signatures

Correctly managed by music software.

*Warning!* Within pre-classic music, some signatures now look incorrect.
Accidentals and LilyPond

Accidentals styles ∈ dodecaphonic, modern, extraNatural, forget, modern-cautionary, ...
Micro-intervals

*Smaller* than semitones.
Micro-intervals

Smaller than semitones.
Early attempts: A. Berg, B. Bartók, ...
Micro-intervals

*Smaller* than semitones.

Early attempts: A. Berg, B. Bartók, ...

Rigorously: A. Hába, I. Wyschnegradsky, ...
Micro-intervals

*Smaller* than semitones.
Early attempts: A. Berg, B. Bartók, ...
Rigorously: A. Hába, I. Wyschnegradsky, ...
Other divisons: M. Ohana (1/3 tones).
Oriental Music

Not based on quarter tones, in the sense that Occidental music includes semitones.
Oriental Music

Not based on quarter tones, in the sense that Occidental music includes semitones.
Semitones,
Oriental Music

Not based on quarter tones, in the sense that Occidental music includes semitones.
Semitones, great tones (5/4),
Oriental Music

Not based on quarter tones, in the sense that Occidental music includes semitones.
(Show modes.)
Discovering quarter tones

A scale, orientalism, excerpts from A. Schnittke and I. Wyschnegradsky.
Graphically

for exact quarter tones.
Graphically

for exact quarter tones.
Alternatives:
What about these Unicode signs?

\[ \text{♯ (U+1D132)} \quad \text{♭ (U+1D133)} \]

I personally *never* seen them in *any* score.
What about these Unicode signs?

\[ \text{# (U+1D132)} \quad \text{♭ (U+1D133)} \]

I personally *never* seen them in *any* score.
What about these Unicode signs?

\[
\text{♯} \text{ (U+1D132)} \quad \text{♭} \text{ (U+1D133)}
\]

I personally *never* seen them in *any* score.

\[
\begin{align*}
\uparrow & \ast & \downarrow & \ast & \uparrow \\
\uparrow & \ast & \downarrow & \ast & \uparrow \\
\# & \ast & \# & \ast & \uparrow
\end{align*}
\]

\[\longrightarrow \text{ indeterminite pitch.}\]
Used within Byzantine chant

*Breaks in the voice*, approximate microintervals, too:

\[ \frac{b}{a} \] #
Technically:
A Point of View

Technically:
many difficulties within pre-classic music and classic one;
A Point of View

Technically:
many difficulties within pre-classic music and classic one;
modern composers ↔ own notations with explanations.
A Point of View

Technically:
many difficulties within pre-classic music and classic one;
modern composers ← own notations with explanations.
be clear!
Artistically

Very difficult to deal with quarter tones and *develop* a tema.
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Artistically

Very difficult to deal with quarter tones and develop a tema. As far as I know, I. Xenakis and W. Lutosławski: until the end. ‘Popular’ inspiration: Vyacheslav Artiomov. Most got rid of them: P. Boulez, G. Ligeti, A. Schnittke, and many more. Me: very rarely.
Ending

Thanks for your attention!