

# **TEACHING MEI IN THE MUSIC LIBRARY**

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Vanderbilt University

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# OVERVIEW

- What is MEI?
- Why would students be interested in MEI?
- Local factors and influences
- Workshop overview/tools/methods/process
- Takeaways





- Music Encoding Initiative

- A community-driven effort to define a system for encoding musical documents in a machine-readable structure expressed in an eXtensible Markup Language (XML) schema
- Recommended by the Library of Congress as a preservation standard
- Semantically driven standard allowing for structurally rich metadata
- MEI is hosted by the Akademie der Wissenschaften und der Literatur, Mainz
- Growing eminence in the fields of musicology, music analysis, and digital humanities at large
- Currently in version 4, although documentation and best practices are in transition
- Currently a relatively small, but active community



- Example projects
  - Thematic indexes
    - Carl Nielsen thematic index (<http://www5.kb.dk/dcm/cnw/navigation.xq>)
    - Frederick Delius thematic index (<https://delius.music.ox.ac.uk/catalogue/>)
  - Digital music editions
    - Beethoven Werkstatt (<https://beethovens-werkstatt.de/>)
    - Digital Interactive Mozart Edition (<https://dme.mozarteum.at/en/music/edition/>)
    - Gesualdo Online (<https://ricercar.gesualdo-online.cesr.univ-tours.fr/>)
    - Prokofiev sketches project (<https://spa-data.github.io/spa-data/sketches/>)





- Why might scholars and students be interested in this?
  - MEI accommodates common Western notation, mensural notation, and neumatic notation on their own terms
  - Encoding for tablature and non-Western notation systems is in development
  - In electronic applications, improves display and analysis of music and musical excerpts beyond what static images can do
  - Possibilities for incorporating MEI within TEI in the future
  - Grad school prep for students pursuing musicology

# THE VANDERBILT SITUATION

- What is our institution's potential role in all of this?
  - Vanderbilt does not have the rich array of primary resources as in Europe or in selective libraries in North America
  - Vanderbilt does not have a robust program in music technology or rich staffing that could undertake major projects
- Which leaves ... pedagogy



# THE VANDERBILT SITUATION

- Local factors
  - #1: Invested Blair School of Music faculty (Joy Calico, musicology)

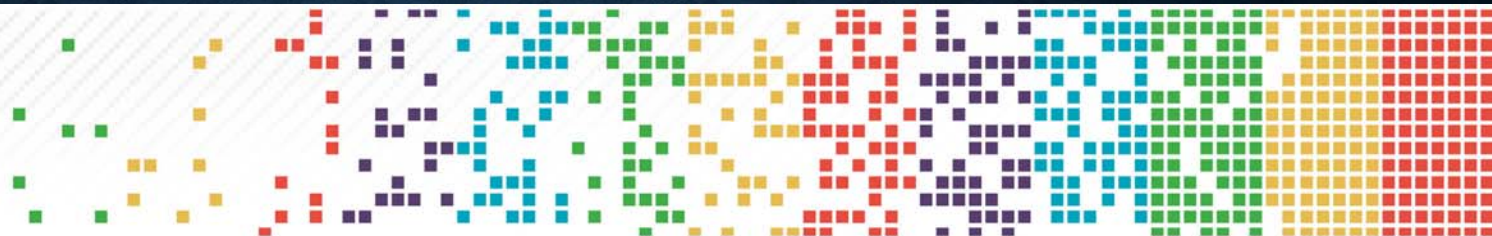


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# THE VANDERBILT SITUATION

- Local factors
  - #2: Digital Cultural Heritage Program through the VU Digital Humanities Center
    - Interdisciplinary group of faculty/library staff who received a 2-year university grant in 2018 to create a digital cultural heritage research cluster dedicated to developing digital methods and skills to aid in identifying, studying, and preserving historic cultural expressions
    - 2019: funding to attend the MEI Vienna Conference in May as well as to host the North American workshop/hackathon in October with the help of Vanderbilt Libraries Administration
    - Provided justification for oXygen XML Editor licenses for our students





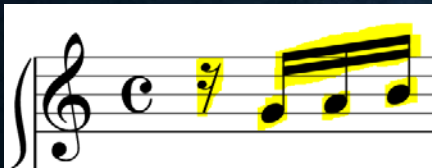
# THE VANDERBILT SITUATION

- #3 Vanderbilt Libraries Buchanan Fellows Program – <https://www.library.vanderbilt.edu/about/fellows/>
  - Donor-funded initiative
  - Directed toward in-depth student learning experiences engaging with library staff and resources
  - 10-week sessions; each participating student is paid \$1000
  - Proposed MEI project in summer 2019, accepted and scheduled for Spring Semester 2020
  - **Encoding Music Manuscripts in Vanderbilt University Special Collections**
    - The [Music Encoding Initiative \(MEI\)](#) is the musical parallel to the [Text Encoding Initiative \(TEI\)](#). Used in various musical digital editions across the globe, MEI has in recent years arisen to become the premiere application of digital humanities methods in the sphere of music scholarship and analysis. This project seeks to acquaint a new generation of students to the nuts and bolts of coding notated music as applied to manuscripts held by the Libraries' Special Collections. As well as developing skills in coding and project management, students will explore how music is distinct from, overlaps with, and can be connected to other subject areas within the larger digital community. The conclusion of the project will consist of a public presentation. *Prerequisites: 1) Ability to read notated music; 2) Unless cleared in advance, attendance at the [MEI Workshop](#) over Fall Break, 24-27 October 2019.*





- Goals of *this* Buchanan Fellowship
  - Provide students with the nuts-and-bolts of MEI
  - Apply these skills in a real-world situation, namely toward the encoding of a music manuscript held in Special Collections
    - Draft of Alfred Schnittke's *Sinfonisches Vorspiel* (MSS.0895)
  - Demonstrate these skills via a presentation and report



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  <note pname="a" oct="4" dur="16" />
  <note pname="b" oct="4" dur="16" />
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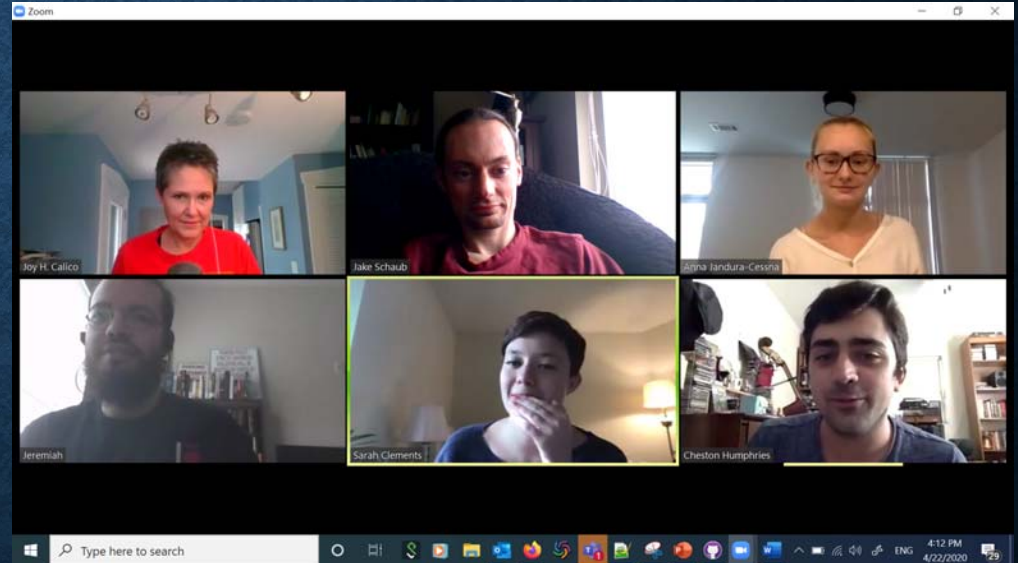


# COURSE “SYLLABUS”

- Introduction to the goal of MEI, MEI projects, and discussion
- Visit/tour of Vanderbilt Special Collections
- Basics of MEI
  - Fundamentals (tutorials)
  - Technique #1: hand-coding
  - Technique #2: auto-coding
- Real-world application/experimentation (Schnittke)
- Presentation (recorded)
- HOWEVER, we didn't quite know how all of this was going to go, how quickly students might progress through the material, nor how we could apply the tools to something as difficult as the Schnittke. Also, COVID happened and necessitated some amendments to the expectations.
- While improving, pedagogy has not yet figured as a major emphasis in the MEI community.

# FELLOWSHIP PARTICIPANTS

- Instructors/Conveners:
  - Jake Schaub, Wilson Music Library
  - Dr. Joy Calico, Blair School of Music
- Students:
  - Sarah Clements (Blair)
  - Cheston Humphries (Blair)
  - Anna Jandura-Cessna (A & S)
  - Jeremiah Kamtman (Blair)





# MEI TECHNIQUE 1 (HAND-CODING)

- MEI website offers 6 tutorials (+ 1 more for creating tutorials)
- We also explored the MEI online documentation for areas not addressed by tutorials
- Applied to a published score for practice (J.S. Bach 3-part Inventions, Czerny ed.)

34

## 15 Inventions à 3 voix.

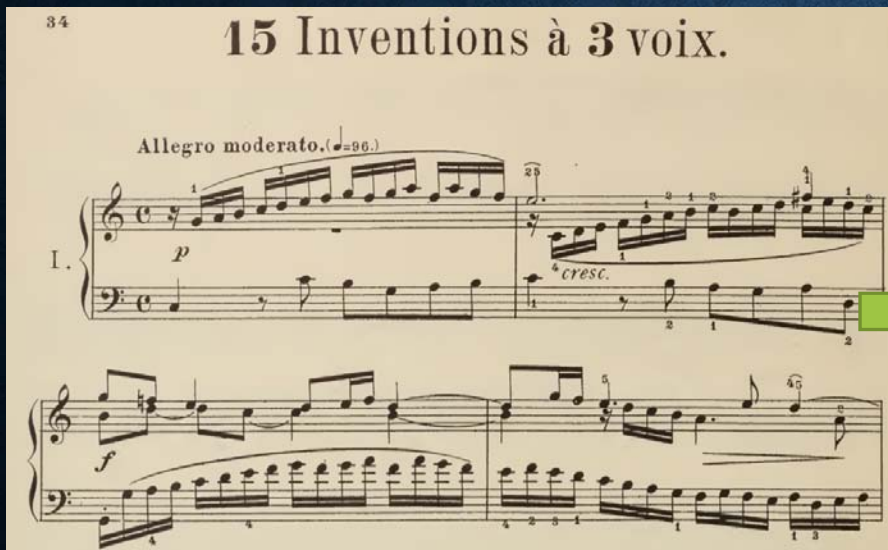
Allegro moderato. (♩ = 96.)

I.

*p*

*cresc.*

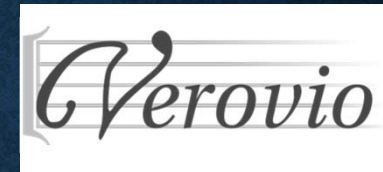
*f*



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      <layer n="1">
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          <note pname="a" oct="4" dur="16" />
          <note pname="b" oct="4" dur="16" />
        </beam>
        <beam>
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      </layer>
    </staff>
  </measure>
</section>
```

# MEI TECHNIQUE 1 (HAND-CODING)

- Verovio realizes the MEI code back into human-readable form
- Has its own documentation site
- Excellent for double-checking work



```
<scoreDef key.pname="c" key.mode="major" meter.count="4" meter.unit="4" me
<staffGrp symbol="brace" bar.thru="true">
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      </layer>
    </staff>
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</section>
```



15 Inventions à 3 voix.

**Allegro moderato. (♩ = 96.)**

The image shows a musical score for a piece titled "15 Inventions à 3 voix." The tempo is "Allegro moderato. (♩ = 96.)". The score is written for three voices (treble, alto, and bass staves) and piano accompaniment (grand staff). The first system shows the piano part with a forte (f) dynamic and a crescendo (cresc.) marking. The second system shows the vocal parts with various musical notations including notes, rests, and fingerings. The score is in common time (C) and features a mix of eighth and sixteenth notes.



# MEI TECHNIQUE 1 (HAND-CODING)

- Not all solutions may be straightforward, and MEI and Verovio documentation do not always agree
- Students and instructors alike often learn through trial-and-error in the coding what the software can and cannot do
- Experimentation is an excellent learning tool

```
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</layer>
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    <note pname="c" oct="4" dur="8" />
    <beam>
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      <note pname="g" oct="3" dur="8" />
      <note pname="a" oct="3" dur="8" />
      <note pname="b" oct="3" dur="8" />
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  </layer>
</staff>
```



**Allegro moderato. (♩ = 🦌.)**

# MEI TECHNIQUE 2 (AUTO-CODING)

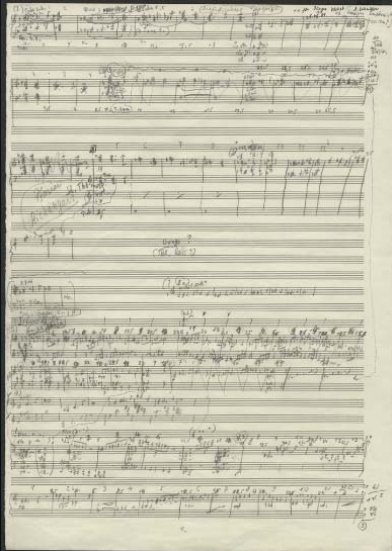
- Create an music document using standard notation software
  - Finale
  - Sibelius
  - MuseScore
- Export the document as MusicXML
- Verovio can then morph the MusicXML file into MEI
- Benefits:
  - Users can edit notation details using a software they already know
  - Automatically supplies necessary MEI elements like xml:id identifier data
  - Results in a decent base code, even if it requires substantial cleanup





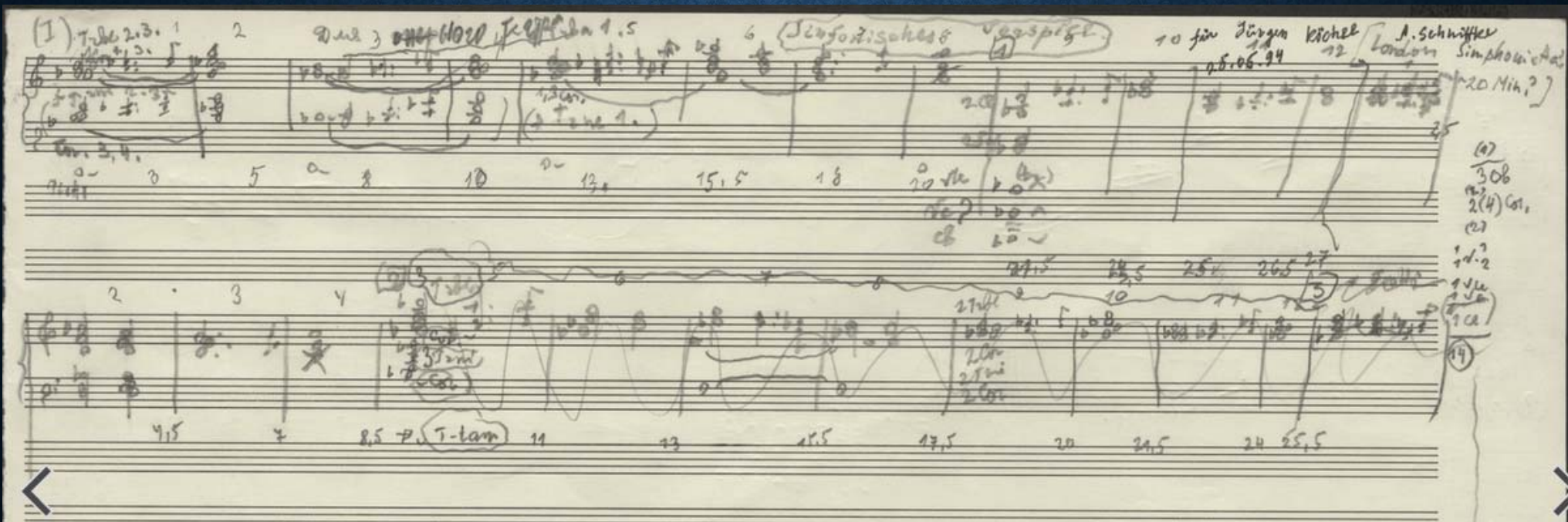
# REAL-LIFE APPLICATION

- The Alfred Schnittke manuscript
- 4 pages acquired by Vanderbilt Libraries in 2017
- 1994 short-score working draft manuscript of the *Sinfonisches Vorspiel*
  - Not meant for public consumption
  - Lots of smudges, ambiguities, and annotations

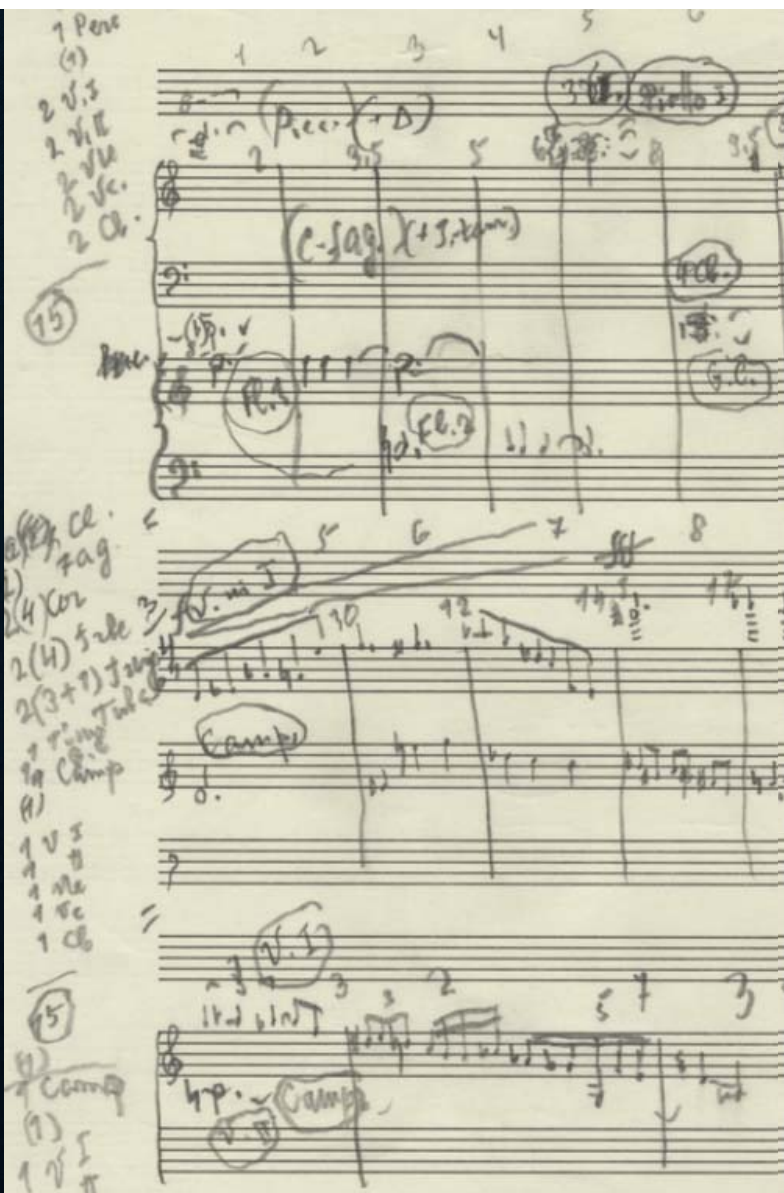




# THE SCHNITTKE MANUSCRIPT







# ISSUES

- Deleted portions, ambiguous notation/chord clusters
- Personal notes in margins, some addressing orchestration, but some less clear
- Access to the published version of the score can add insight into some details, but never wholly conclusively
- How to accommodate these complex details in an MEI document? Is there any documentation or best practices for this?
- Do we code this as seen on the page in close score form? Expanded to full score form?
- Thinking down the road, how would we want to incorporate our document alongside similar documents?
- What is the best method for documenting a creative process?

# PROJECT MANAGEMENT DURING COVID

- Process was expedited and significantly altered and improvised due to the COVID-19 shutdown
- In addition to oXygen, Box, and MS Word, we added a number of other sets of software out of urgent necessity

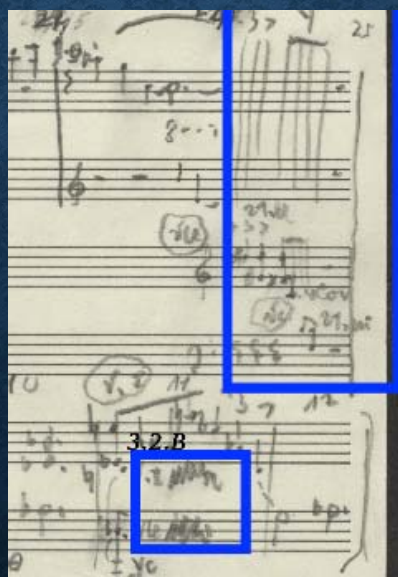




# RESULTS

- Decision to focus on the *notes only* for this fellowship, with each student assigned one page of the MSS
- Assignment was comprised of an MEI file, an annotated PDF of the relevant MSS page outlining the remaining trouble spots, and a corresponding Word document explaining any lingering issues

```
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                    </layer>
                  </staff>
                </measure>
              </layer>
            </staff>
          </measure>
        </layer>
      </staff>
    </measure>
```



3.1.A – Unclear notation. Stems without note heads. lower staff.

3.2.A – Mysterious markings in the upper staff. They complete a bar.

3.2.B. – Undecipherable scribbles.

3.5.A – Density of tone cluster renders it unclear.

# RESULTS

- Challenges
  - Complexities and ambiguities in the manuscript itself
  - Difficulties in coordinating unified practices when the manuscript was split into four separate files
  - Lack of full MEI best practices documentation
  - Documentation conflicts between MEI and Verovio
  - Evolving standards (MEI ver.3 vs. MEI ver.4)
  - Organization (oXygen vs. Brightspace vs. Box vs. Slack vs. Github)
  - Copyright



# RESULTS

- Future plans
  - Future students build on existing code
  - Integrate with MEI-encoded versions of other Schnittke drafts (Juilliard? Goldsmiths?)
  - Further engagement in the larger MEI community

# QUESTIONS?

- MEI website: <https://music-encoding.org/>
- Verovio website: <https://www.verovio.org/>
- MEI-oriented projects: <https://music-encoding.org/community/projects-users.html>
- Anna Kijas and Raff Viglianti, *Introduction to the Music Coding Initiative* [lesson plan]: <https://dlfteach.pubpub.org/pub/intro-mei/release/1>