

# Beethoven in the House

## *Annotating Digital Sources to Contextualise Musicology Studies*

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**BTHVN** BEETHOVEN-HAUS  
**2020** BONN



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1. Motivations
2. Project Approach

*Prices of admission to the theatres, and the number of seats in each.*

At the Grand-Opéra	from 3 fr. 60 c. to 10 fr.	» c.	Seats 1,937
At the Théâtre-Français	from 1 80 to 6 60	do :	1,520
At the Opéra-Comique	from 1 65 to 6 60	do :	1,720
At the Italian-Opera	from 2 » to 12 »	do :	1,282
At the Odéon	from 1 50 to 6 »	do :	1,628
At the Gymnase	from 2 » to 5 »	do :	1,040
At the Nouveautés	from 1 25 to 5 »	do :	1,250
At the Vaudeville	from 1 50 to 5 »	do :	1,257
At the Variétés	from 1 25 to 5 »	do :	1,240
At the Porte-St.-Martin	from » 75 to 5 »	do :	1,803
At the Gaîté	from » 60 to 4 »	do :	1,254
At the Ambigu-Comique	from » 70 to 4 »	do :	1,800
At the Equestrian Circus	from 1 25 to 5 »	do :	1,800
At M. Comte's Theatre	from 1 » to 5 »	do :	1,000
( At this theatre the performers are children, from 5 to 9 years of age. )			

Daily income of a family of five, workers:  
2.35fr

Numbers from around 1831, Paris

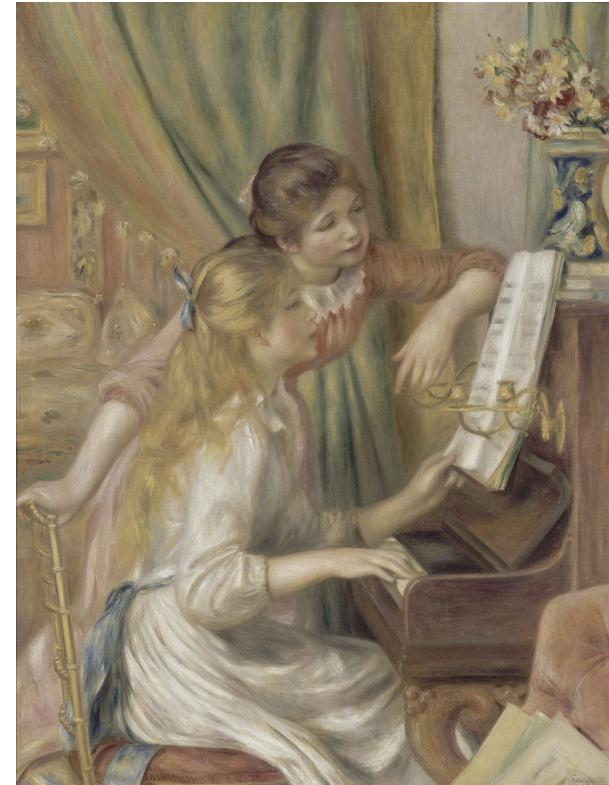
# Motivation - Domestic Music Arrangements in the 19th Century



George Hamilton Barraclough, <https://commons.wikimedia.org/w/index.php?curid=6904104>



Silvestro Lega, <https://commons.wikimedia.org/w/index.php?curid=1549934>



Pierre-Auguste Renoir, <https://commons.wikimedia.org/w/index.php?curid=21857233>

## Two perspectives:

- 1) *A study of Steiner editions of Beethoven's 7th and 8th Symphonies and Wellingtons Sieg will make a detailed comparison between arrangements, systematically identifying a core common to multiple versions, and asking if this reflects the stated values of the publisher.*
- 2) *A survey for patterns of arrangement across a larger sample of lesser-known and often poorly catalogued scores, collating emergent indicators of arrangers' motivations within a narrative of the domestic market - the music industry of its day.*

# Motivation - A study of Beethoven arrangements using digital encodings

Sigmund Anton Steiner



Frühdruck, op. 91, Bearbeitung für 2 Klaviere, Steiner, 2362, C 91 / 8



Frühdruck, op. 92, Bearbeitung für 2 Oboen, 2 Klarinetten, 2 Hörner, 2 Fagotte und Kontrafagott, Stimmen, Steiner, 2563, C 92 / 10



Frühdruck, op. 92, Bearbeitung für 2 Violinen, 2 Violen, Violoncello, Stimmen, Steiner, 2564, C 92 / 23



Frühdruck, op. 92, Bearbeitung für Violine, Violoncello und Klavier, Stimmen, Steiner, 2565, C 92 / 30



Frühdruck, op. 92, Bearbeitung für Klavier zu 4 Händen von Anton Diabelli, Steiner, 2566, C 92 / 27



Frühdruck, op. 93, Bearbeitung für 2 Violinen, 2 Violen, Violoncello, Stimmen, Steiner, 2574, C 93 / 26



Frühdruck, op. 93, Bearbeitung für Klavier zu 4 Händen, Steiner, 2576, C 93 / 16



Frühdruck, op. 93, Bearbeitung für 2 Klaviere von Carl Czerny, Steiner, 2578, C 93 / 21

## Two perspectives:

- 1) *A study of Steiner editions of Beethoven's 7th and 8th Symphonies and Wellingtons Sieg will make a detailed comparison between arrangements, systematically identifying a core common to multiple versions, and asking if this reflects the stated values of the publisher.*
- 2) *A survey for patterns of arrangement across a larger sample of lesser-known and often poorly catalogued scores, collating emergent indicators of arrangers' motivations within a narrative of the domestic market - the music industry of its day.*

# Motivation - A study of musicological patterns in domestic arrangements

The screenshot shows the SOLO (Search Oxford Libraries Online) website interface. At the top, there is a dark blue header with the SOLO logo, the University of Oxford logo, and navigation links for NEW SEARCH, BROWSE, MAP SEARCH, HELP, and TAGS. On the right side of the header are icons for a clock, a lightning bolt, and SIGN IN.

The main search bar contains the query "Beethoven". Below it is a yellow banner with the text "Sign in to get complete results and to request items" and "Sign In" and "DISMISS" buttons. To the right of the banner is a "LIVE CHAT" button.

The search results page displays 43 results on page 1. The results are listed in a grid format, each with a small thumbnail image of a musical score, the title, the author, and a "Find & Request" link.

On the left side of the results page, there is a sidebar titled "Active filters" which includes "Piano music, Arranged", "Piano music (4 hands), Arranged", "Years: Years: 1800-1900-und...", and "Scores". It also has "Remember all filters" and "Reset filters" buttons.

Below the filters is a section titled "Sort & Filter Results" with options like "Include results without full-text access" (checked), "Sort by Relevance", and "Show only: Physical Resources (43)". There are dropdown menus for "Library", "Creator", "Publication Date", "Topic", and "Language".

The results are numbered 1 through 5:

- 1** SCORE  
Album-Beethoven : dix morceaux brillants pour le piano  
[1842] | Vienne : Pietro Mechetti qm Carlo | 1 v. of music (various pagings) : ill. ; 33 cm
- 2** SCORE  
Album-Beethoven : dix morceaux brillants pour le piano  
[1841] | Vienne : Pietro Mechetti qm Carlo | 1 v. of music (various pagings) ; 33 cm
- 3** SCORE  
Half-hours with the best composers. Beethoven : arranged as solos and duets for the piano forte : with ad lib accompts for flute, violin & violoncello  
Beethoven, Ludwig van, 1770-1827 | Calcott, William H. (William Hutchins), 1807-1882  
[185-] | [Ed.] no. 2, duets. | London : Leader & Cock | 21 p. of music ; 36 cm
- 4** SCORE  
Beethoven's Lieder für das Pianoforte  
Beethoven, Ludwig van, 1770-1827  
[1849] | Leipzig : Breitkopf & Härtel | 19 p. of music ; 33 cm
- 5** SCORE  
Beethoven's Lieder für das Pianoforte  
Beethoven, Ludwig van, 1770-1827

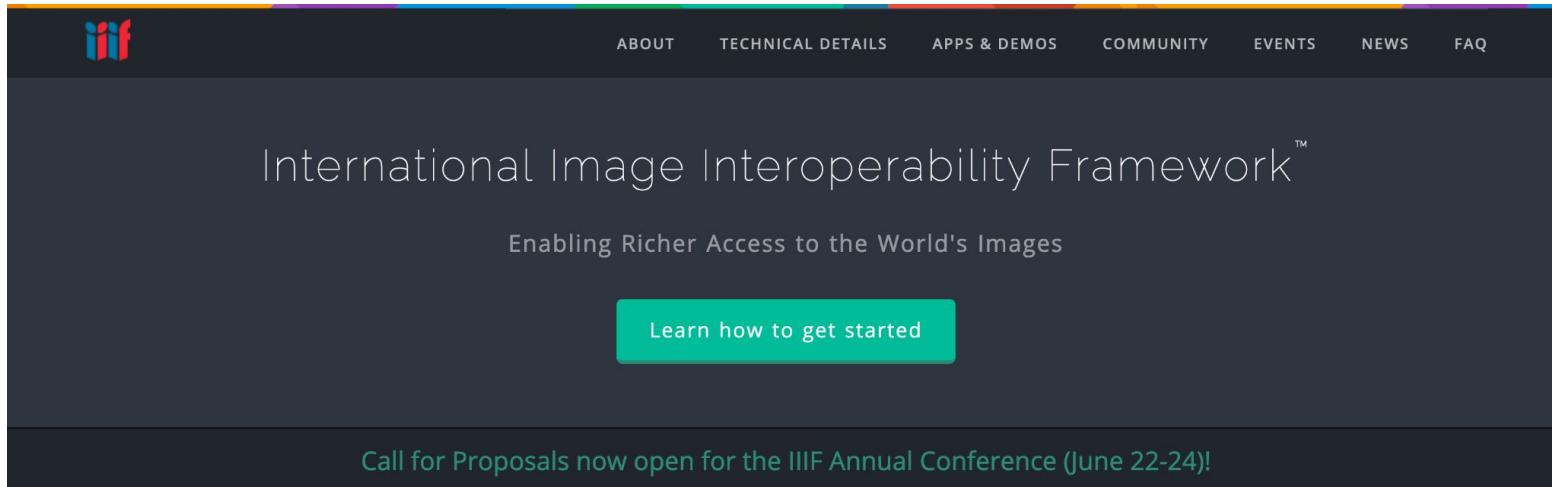
A "PAGE 1" indicator is located at the bottom right of the results area.

# Beethoven in the House

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1. Motivations
2. Project Approach

# Contributing technologies - sources - IIIF

A screenshot of the International Image Interoperability Framework (IIIF) website. The header features a navigation bar with links for About, Technical Details, Apps & Demos, Community, Events, News, and FAQ. Below the header is the IIIF logo, which consists of the lowercase letters "iiif" in white with blue and red highlights. The main title "International Image Interoperability Framework™" is displayed prominently in large white font. Below the title is the subtitle "Enabling Richer Access to the World's Images". A teal button with white text reads "Learn how to get started". At the bottom of the page, a teal banner contains the text "Call for Proposals now open for the IIIF Annual Conference (June 22-24)!".

International Image Interoperability Framework™

Enabling Richer Access to the World's Images

Learn how to get started

Call for Proposals now open for the IIIF Annual Conference (June 22-24)!

<https://iiif.io>

**Interoperability:** IIIF offers a standardized way to access image and AV resources

# Contributing technologies - sources - Digital Bodleian

Main digitization platform for Bodleian Libraries

Sources digitized as part of the project will be published here

Delivers IIIF images and manifests

Digitized sources are available beyond this project

The screenshot displays the Digital Bodleian website. At the top, there is a navigation bar with links for SEARCH, BROWSE, ABOUT, and LOG IN. Below the navigation bar, a header indicates the source is 'Bodleian Library MS. M. Deneke Mendelsohn c. 21'. The main content area shows a detailed view of a handwritten musical score on multiple staves. A large watermark in the center of the image reads 'par Beethoven 1810 a Baaden'. To the left of the main image, a sidebar lists thumbnail images for folios 19r through 26v. Above these thumbnails, there are options to 'View in Mirador for advanced features', 'View in Universal Viewer', and 'View IIIF manifest'. On the right side, a search results panel is visible, showing a list of items related to 'beethoven'. The first item in the list is a score signed 'par Beethoven 1810 a Baaden' from folio 19r. The URL at the bottom of the page is <https://iiif.bodleian.ox.ac.uk/iiif/manifest/a908f6fe-48b2-4804-a21d-9268d5d99ba4.json>.

# Frontend

## Edirom Online

2011–2016  
but still active  
development

ExtJS, XQuery  
eXist, Digilib  
Verovio

MEI, TEI, Audio, IIIF,  
proprietary Edirom  
data format

25+ active editions  
online

The screenshot displays two windows side-by-side. The left window, titled 'A Autograph Score', shows a facsimile of a handwritten manuscript page from Bach's Mass in B minor. The page contains musical notation and several handwritten annotations in ink, including 'Nr. 3' and 'Christa'. Below the manuscript is a list of vocal parts: 5 Voci, 2 C. soprani, Alto, Tenore, Basso, 3 Trombe, Tamburi, 2 Flaventz, 2 Oboi, 2 Pochini, 1 Viola, and C. Continui. The right window, titled 'Full Score', shows a digital reconstruction of the same score. It includes a title page for 'Messe in h-Moll' by Johann Sebastian Bach, BWV 232, followed by the 'I. Missa' section. The score is presented in a standard musical notation format with multiple staves for different instruments and voices. A vertical sidebar on the right lists various contents and sources, such as 'Autograph Score', 'Facsimile Edition 1924', and 'Original set of Parts (Kyrie-Gloria)'. At the bottom of the right window, there is a copyright notice: '© 2011 by Camerata Stuttgart. ISSN 1122-0833. Verwaltung und Betrieb der Camerata Stuttgart e.V. by the association of the former members of the ensemble. All rights reserved. Printed in Germany. Verwertungen jeglicher Art sind grundsätzlich untersagt. Alle Rechte vorbehalten. / Any unauthorized reproduction is prohibited by law. All rights reserved.'

## Backend

## Edirom Backend

2020–  
but some predecessors

XQuery, eXist  
Swagger, OpenAPI

REST  
JSON, XML

MEI, TEI, Audio,  
proprietary Edirom  
data format

The screenshot shows the Swagger UI interface for the Edirom Online Backend API. At the top, it displays the title "Edirom Online Backend 1.0.0", the base URL "localhost:9090/exist/restxq", and the GitHub URL "https://raw.githubusercontent.com/Edirom/Edirom-Online-Backend/master/swagger.json". A green "Explore" button is also visible.

The main content area is divided into sections:

- Schemes:** A dropdown menu set to "HTTP".
- Objects:** Objects of Edirom Online Editions
  - GET /editions** Get all editions
  - GET /editions/{editionID}** Get details for a single edition
  - GET /getDefaultEdition** Get default edition set by environment variable
- Models:** A collapsed section containing:
  - Edition >**
  - Language >**

# Contributing technologies - Edirom

## Measure Detector

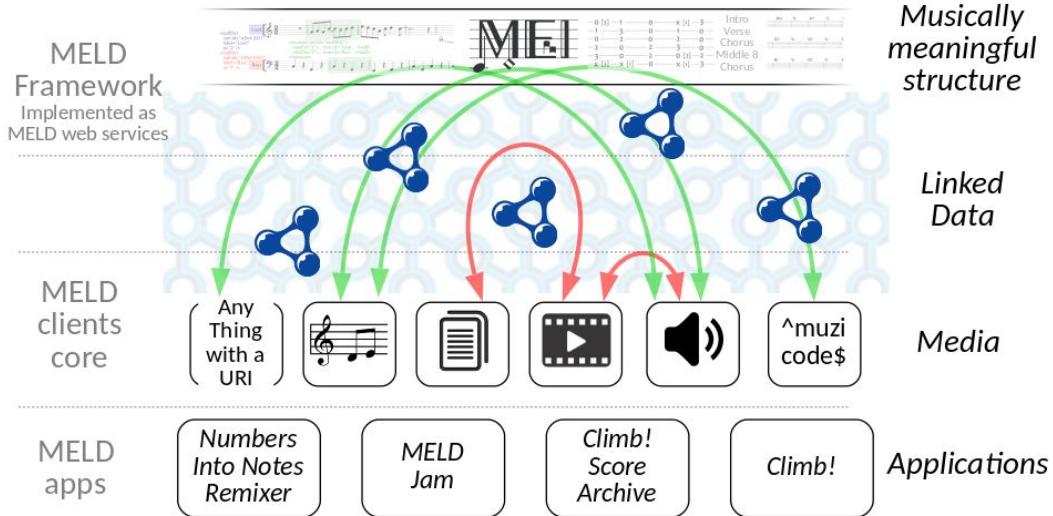
Tensorflow  
Python, Javascript

MEI

cemfi.Deep Optical Measure Detector v1.0.2

Beethoven\_op.98\_ED\_S.5.jpg

# Contributing technologies - Music Encoding and Linked Data (MELD)



**Annotations:** a framework for combining annotations of multiple formats of music-related material

- MELD provides the framework for annotations which reference multiple sources.
- We will extend MELD with the ontological modelling necessary to represent complex musicological relationships *in the data*.

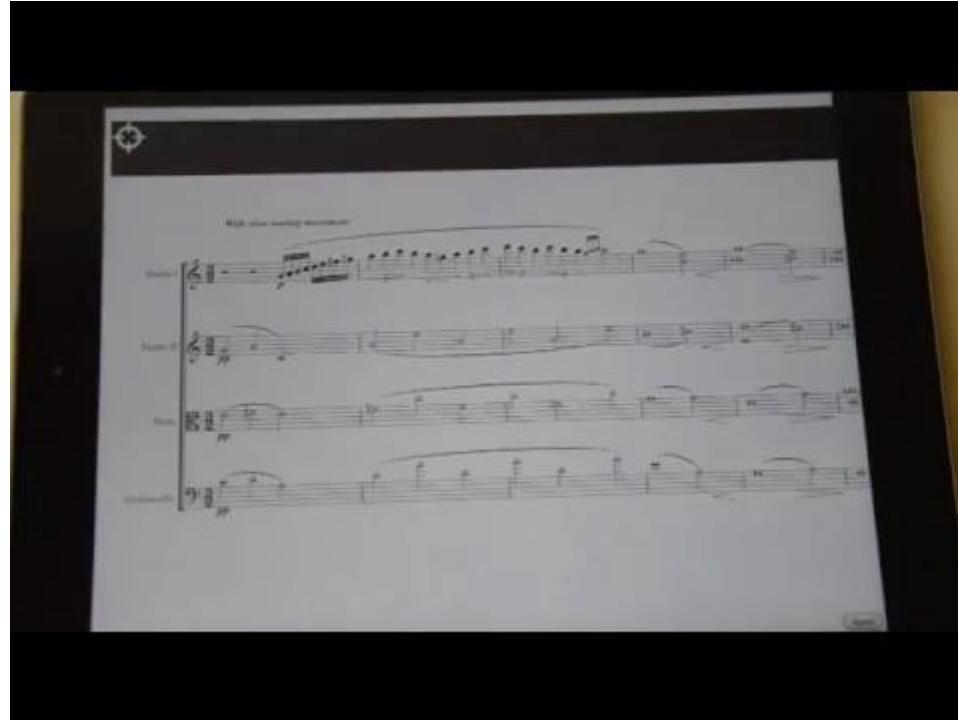
## Contributing technologies - MELD



**Authoring** annotations: the Delius quartet app is a very simplistic annotation authoring tool

- Other, more sophisticated, MELD apps are presentational only (e.g. Lohengrin TimeMachine).
- This current project will create an authoring environment to gather annotations relating to domestic music arrangement, compatible with MELD.

## Contributing technologies - MELD - Delius quartet annotation



Video: 45 sec max.

# Contributing technologies - MELD - Delius in Performance article



Group photograph of Frederick Delius, Jelka Rosen Delius, Beatrice Harrison, and Evelyn Howard-Jones

[View images from this item \(1\)](#)

Usage terms [Public Domain](#)  
Held by [© Public Domain](#)

## An Empty House?

All written music requires performers to make decisions about how to perform the notes as written down by the composer. Many early music notations are famously under-prescriptive, either assuming performers would adopt particular practices, or leaving many choices undetermined. Even in more modern repertoire, however, composers have varied in how much they choose to convey to the performer. [Edward Elgar](#) gave very detailed performance indications regarding phrasing, dynamics, and instrumental techniques. Delius, in contrast, has long been accused of laxity bordering on indifference to the performance of his works. His most influential interpreter, Beecham, had much to say on this theme, both in interviews and writing.

Tonality in crisis? How harmony changed in the twentieth century

Music and the Russian Revolution

Stravinsky and Neoclassicism

Delius and America

Delius, Paris, Grez

Vaughn Williams and The English Hymnal

The Use of the Instruments of the Orchestra

## Other Related Articles

[Delius's workshop](#)

[Delius and America](#)

[Delius, Paris, Grez](#)

## Related Works

[String Quartet \(1916\)](#)

[Brigg Fair](#)

[Cello Sonata](#)

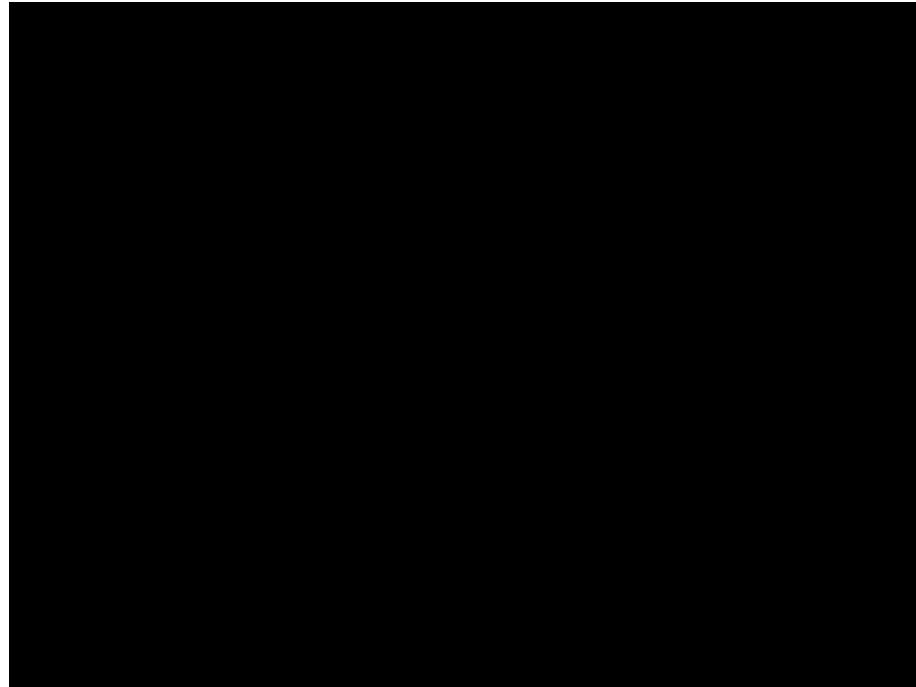
[Piano Concerto in C minor](#)

## Related People

### Tip

Click on bold, underlined text to show relevant materials. Try selecting curly-underlined technical terms and double-underlined person names for more information.

## Contributing technologies - MELD - Lohengrin Digital Companion

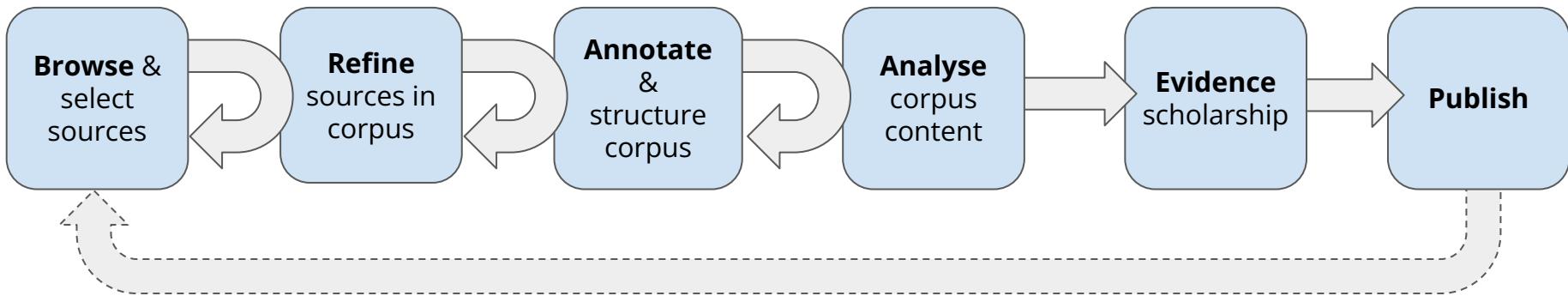


Video: 3 min.

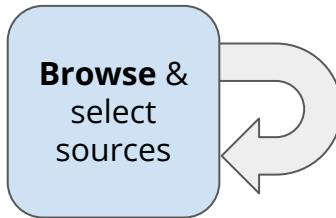
<https://um.web.ox.ac.uk/lohengrin>

# Project goal: a prototype digital environment

An iterative sequence of interactions...

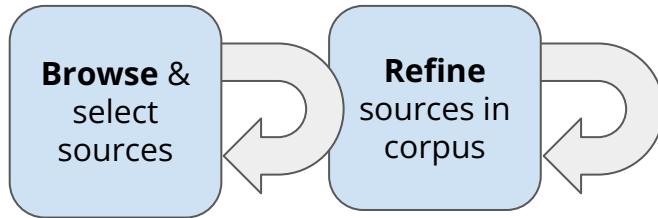


# Realising our proposed digital environment



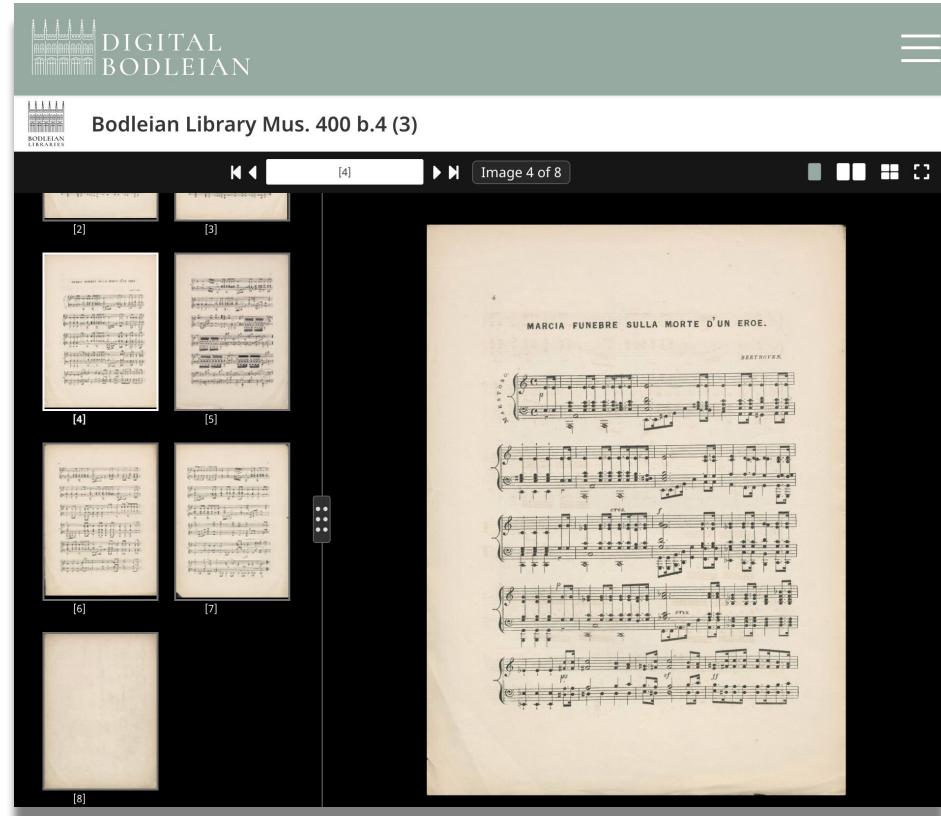
Explore  
Bodleian and  
Beethoven-Haus  
catalogues for  
vocal  
arrangements

# Realising our proposed digital environment

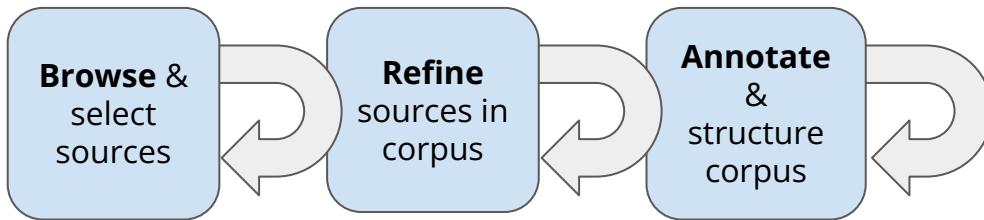


Explore  
Bodleian and  
Beethoven-Haus  
catalogues for  
vocal  
arrangements

Browse IIIF  
images of scores  
and catalogue  
information  
enriched from  
GND for  
promising items



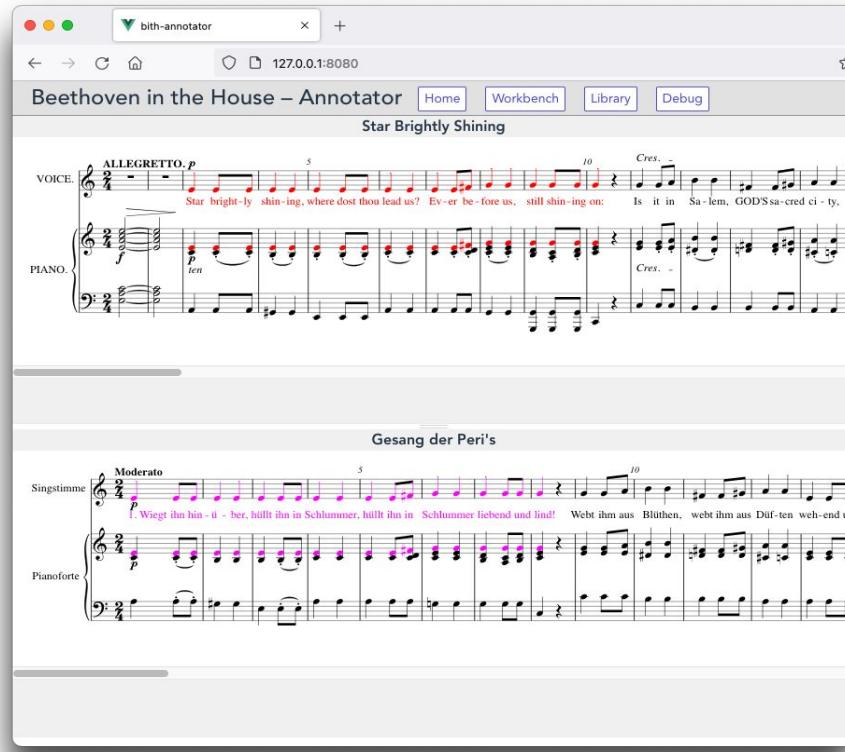
# Realising our proposed digital environment



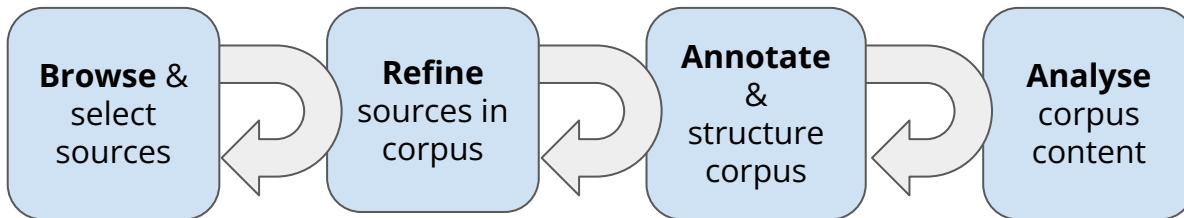
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Annotate  
parallel  
passages for  
rapid  
comparison  
(over images  
or digital  
notation)



# Realising our proposed digital environment



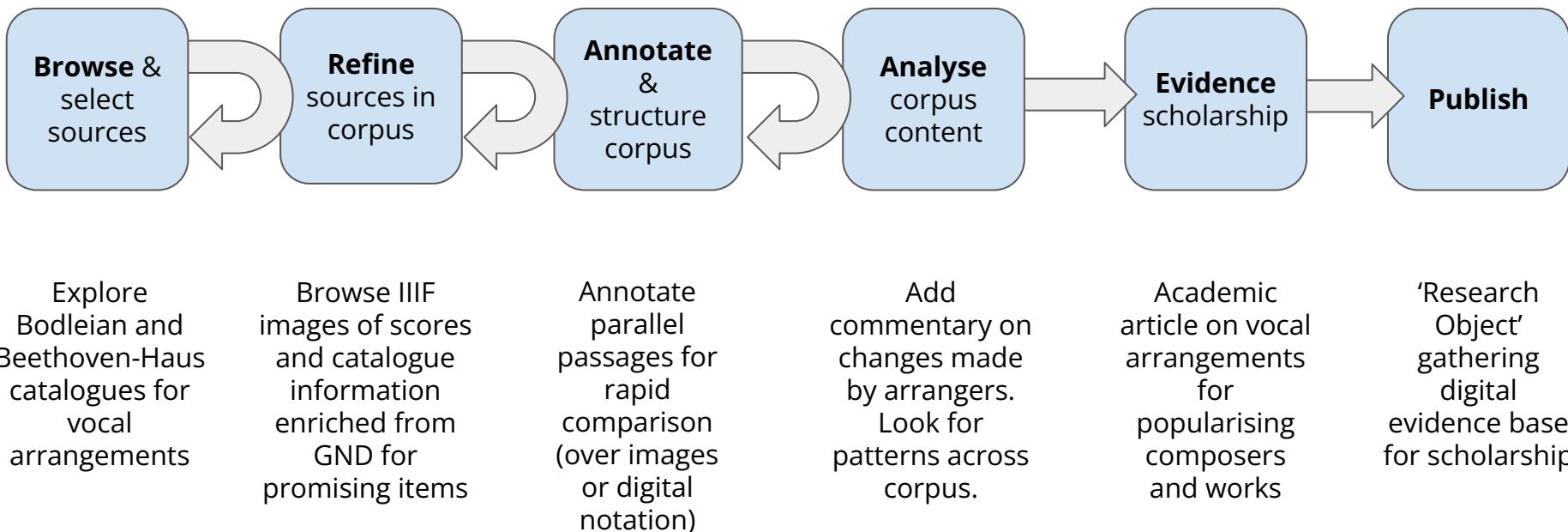
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Annotate  
parallel  
passages for  
rapid  
comparison  
(over images  
or digital  
notation)

Add  
commentary on  
changes made  
by arrangers.  
Look for  
patterns across  
corpus.

# Realising our proposed digital environment



## Goals - what will we have at the end of the project?

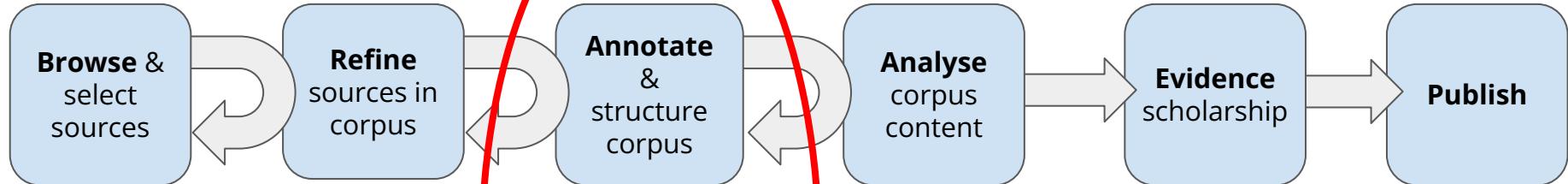
- The two musicology studies:
  - A study of Beethoven arrangements using digital music encodings
  - A study of musicological patterns in domestic arrangements
- A prototype digital environment for musicological exploration of digital material
- Innovative digital methodologies supporting musicological studies

But wait...

*Not as simple as it might sound!*

This requires a semantic model to annotate between and across sources...

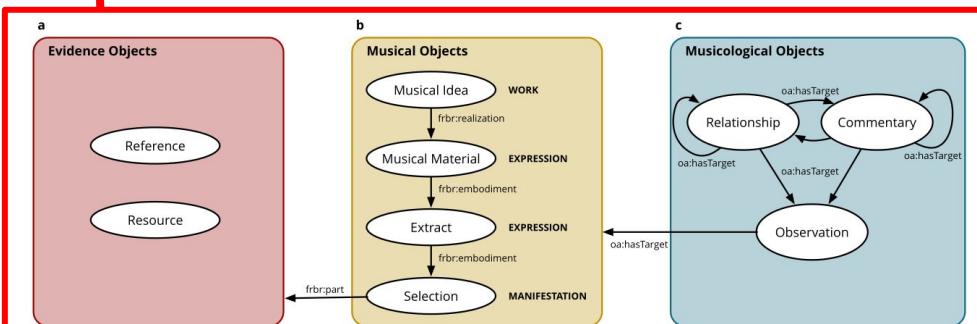
...our DLfM paper on Thursday will discuss the details!



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# **Beethoven in the House**

## *Annotating Digital Sources to Contextualise Musicology Studies*

<https://domestic-beethoven.eu/>

**Thank you!**

Find out more about our annotation model during DLfM  
Thursday, 11am, Hall B

*Beethoven in the House* is gratefully supported by a UK-Germany funding initiative: in the UK by the Arts and Humanities Research Council (AHRC), project reference AH/T01279X/1; and in Germany by the Deutsche Forschungsgemeinschaft (DFG), project reference 429039809.

We also thank project team members Christine Siegert, Johannes Kepper, and Christin Heitmann for their ongoing contributions to project discussion and research.