Beethoven in the House: Digital Studies of Domestic Music Arrangements

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Abstract

Performance of music in the home was the means by which most works were received before the advent of audio recordings and broadcasts, yet the notation sources that form our primary record of this culture have not been the subject of comprehensive or methodical study. Choices made by arrangers adapting music for domestic consumption – of instrumentation, abbreviation, or simplification – reflect the musical life of the 19th century, and can inform our understanding alongside contemporary accounts such as newspapers, adverts, and diaries.

   This position paper gives the background, motivation, and proposed approach of research currently being undertaken within the *Beethoven in the House* project.[1] This will include a study of Steiner editions of Beethoven's 7th and 8th Symphonies and *Wellingtons Sieg*, making a detailed comparison between arrangements, systematically identifying a core common to multiple versions, and asking if this reflects the stated values of the publisher. A second survey will look for patterns across a larger sample of lesser-known and poorly catalogued scores, collating emergent indicators of arrangers' motivations within a narrative of the domestic market – the music industry of its day. Both studies will innovate digital methods which characterise arrangements as music encodings, including 'sparse' approaches to notation and annotation.

1 Introduction – Domestic Music and Arrangements in the 19th Century

Domestic music-making was for centuries the principal way many people discovered and explored music. With no recordings, a piece such as Beethoven's *Große Fuge*, which was performed publicly once just before 1850, could only be heard by those who bought and performed from the edition or from arrangements. Orchestral works such as Beethoven's symphonies might only reach the larger concert venues; operatic works were also difficult to access, although extracts and reductions were commonly given in concert halls. Domestic performances allowed a more leisurely, detailed, and participatory exploration of the music. They also gave enthusiasts access to music that might not otherwise be played locally.

   Concert pieces often required adaptation to accommodate the home environment and reductions for chamber ensembles, or for piano solo or duet, were common. Although some composers arranged their own music, most publishers would employ in-house arrangers to satisfy the huge demand for adapted versions of works originally created with the concert hall or opera house in mind. This transformation from public to private space brought other changes reflected in arrangements. Most obviously, amateurs replaced professional mu-

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1   https://domestic-beethoven.eu/ (accessed January 12, 2022).

sicians. But in an age when instruments were perceived to be suitable for performers of a specific gender,[2] new arrangements could also bring musical works to domestic performers of the other sex.

Despite its importance this part of musical life, especially concerning arrangements of instrumental music, is not well studied. The lower status this music has taken in historiography of the period has also meant little attention has been given to the arrangements themselves, and the music has received little attention in the literature. Notable exceptions are the articles by Christensen [2], Bashford [1], and the workshop presentation by Lewis [7]. The situation is significantly better for operatic arrangements (see, e.g., Christensen [3], Feder [5], Hinrichsen and Pietschmann [6], Pietschmann [10]; also Siegert [11] and [12]), but in comparison to the vast amount of material knowledge is remarkably scarce.

The quality of arrangements was clearly of great importance to composers, but presumably also to purchasers if the adverts[3] by publishers and printed reviews[4] in both national and music journals are to be believed. The presence of a named arranger on the front page of an edition was an attempted reassurance of high musical standards[5] to the extent that the publishers Cranz used a pseudonym to give the *appearance* that all their arrangements were carried out by the ever-reliable G. W. Marks – in reality a group of house arrangers whose numbers included the young Brahms. Mozart planned to make his own wind arrangement of *Die Entführung aus dem Serail*, because no-one else should have "den Profit davon" (letter from 20 July 1782), while Beethoven rejected the arrangement of the *Große Fuge* op. 133 for four hand piano that his publisher Artaria had commissioned and made his own arrangement instead (op. 134). Mozart also referred to the aesthetic difficulties in arranging a piece, the balance of maintaining the effect of the music and making it suitable for the new scoring – central aspects that should be addressed in any study of the material.

Arrangements were marketed in terms of availability and price, but also quality and authenticity. Reviews and adverts for new editions give evidence for the importance of these values and of what constituted quality, which is largely spoken of as fidelity to the model, and clarity and preservation of lines. The publishing house of Sigmund Steiner and Tobias Haslinger is important with regard to both of these values, as it could trade on a (variably) close relationship with Beethoven himself [15] and made statements in adverts about their arrangements of his works that explicitly set them in contrast to other versions on musical criteria.

Another challenge to study this element of musical culture is the sheer volume of material, although the digitisation of Hofmeister's catalogue of 1844 makes it easier to see the breadth of music available to amateur musicians.[6] Hofmeister alone lists almost 9,000 piano duets, a vast number of which are reductions, with the most popular composers being Czerny followed by Beethoven. Famous orchestral works such as Beethoven's symphonies or Weber's overtures could have many arrangements, with instrumentations ranging from piano solo to flute and string sextet. Christensen [2] quotes a claim that, by 1871, there were around 60 different reductions of some of Haydn's symphonies; and that in 1872: "The arrangements of Beethoven's works already existing are well-nigh countless in number, and 'the cry is still they come'"[7]. With so many versions, so much music and, for the most part, quite nuanced musical differences in a text that is largely the same music in all cases, manual comparison is labour intensive and scales poorly for those who want to maintain an overview.

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2   Strings were restricted to male players in many places for much of the 19th century; piano could be either, but frontispiece imagery and dedications strongly associate it with women.

3   Beethoven's symphonies presented "for the first time in a truly artistic way, in regard to their sound quality and purity of setting [...] in which the features of voice leading [...] are here never obscured" (advert in the *Leipziger Allgemeine Musikalische Zeitung* 11, no. 20 [May 17, 1876], col. 320, quoted in Christensen [2, pp. 271–272]).

4   "Czerny packed both hands full, so that very often the possibility of making single tones and voices prominent ceases; [...] a continual screaming discant tortures the nerve of hearing" (*Dwight's Journal of Music* 4, no. 6 [November 12, 1853], p. 41, quoted in Christensen [2, p. 270]).

5   Self arrangers include: Beethoven, Brahms, Mendelssohn, Schumann, Dvořák, and Tschaikovsky.

6   https://hofmeister.rhul.ac.uk/2008/index.html (accessed January 12, 2022).

7   *Monthly Musical Record* 2, no. 10 (October 1, 1872), p. 152, quoted in Christensen [2, p. 259].

2 Project Approach

The *Beethoven in the House* project is currently exploring the issues introduced in the previous section. It is doing so through an interdisciplinary collaboration between musicologists and technologists, broadly organised into four areas of research: two musicology studies (described in sections 2.1 and 2.2, below), accompanied by two pieces of technological innovation (2.3 and 2.4) which take their requirements from, and will be evaluated through, the musicologists' studies. Taken together they present a new and novel integrated approach which will advance the field of digital musicology. In this section we describe the research proposed for each of these four areas, which are currently progressing through their initial stages of realisation within the project.

2.1 A Study of Beethoven Arrangements Using Digital Music Encodings

The original prints of Beethoven's symphonic *Wellingtons Sieg* as well as the 7th and 8th Symphonies were presented in various 'editions' (*Ausgaben*), as his publisher Steiner called them, distinguishing them from simple 'arrangements' (*Bearbeitungen*): for orchestra (score and parts), piano (two hands, four hands and two pianos), piano trio, string quintet, and wind music. They have, however, not yet been studied as a whole and will now be contextualised with Steiner's advertising strategies as well as the discourse linked to them, especially in letters and reviews.[8] Through this example, we will be able to depict a more detailed picture of the musical life in Beethoven's Vienna drawing attention to an often-neglected musical practice. It might, moreover, help us to better understand the huge success of the three works in the years just before the Congress of Vienna.

This close study is investigating whether there are significant differences in the musical structure between the Steiner 'editions' and other arrangements (including those published in newspapers[9] and collections), analysing the most interesting points of these works as well as of the arrangements. It will use a digital environment and the novel application of digital methods to undertake the exploration and structure the research output, evidencing findings for digital publication and dissemination. In doing so we aim to provide a complete, focussed, motivation and evaluation of the new digital methods developed across the project.

Digital approaches to musicology allow and urge us to reconsider the conceptual basis of our research. It might, for example, be a fruitful approach to rethink the genre of opera as a network structure with single pieces moving from one opera to another [14], works can be considered and, ideally, edited as the sum of their single and diverse manifestations.[10]

Here we will consider the idea of a 'core', developed by the *Beethovens Werkstatt* project, which identifies and encodes that which can be found in multiple versions (in this case: arrangements) of the same work.[11] We propose this investigation since Steiner used the term 'editions' in a completely non-hierarchical way; he gives no emphasis on the 'original' scorings of the works, so all 'editions' are obviously of the same value for him. Our encoding must therefore outline this core and should be located on the work level concerning the Functional Requirements for Bibliographic Records (FRBR) standard,[12] an abstract entity that has an abstract core to which the concrete 'editions' are related.

In presenting the results of this study we will test what is possible to be encoded using MEI, and what has to be contextualised or presented in other ways. Points of special interest will be, for example, the initial fanfares, the 'moving' of the sound, and the quotations in *Wellingtons Sieg*, performance indications like 'pizzicato', pedal use, specific instrumental restrictions which aim to describe the characteristics of these arrangements. Concerning the central aspects of sound, especially in *Wellingtons Sieg*, it seems necessary to demonstrate the sounds; which makes clear that the study has to be presented in a digital way.

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8   Nancy November has recently published a series of editions of Beethoven's symphonies, including some Steiner editions [9].

9   E.g. an arrangement of the second movement of the 7th Symphony for piano published in *The Harmonicon* 2, part 2 (1824), pp. 69–71 (see [4, p. 598 (vol. 1)]).

10   This was suggested in a paper by Andreas Münzmay and Christine Siegert presented at the congress of the *Arbeitsgemeinschaft für germanistische Edition* in Frankfurt in February 2018 [8]. In this context, the concept of authorship has also to be reconsidered. For a model of shared authorship concerning the genre of opera see Siegert [13].

11   A (german) description of the concept of a musical core ('Satzkern') can be found in the project's glossary at https://beethovens-werkstatt.de/glossary/satzkern/ (accessed January 12, 2022).

12   https://repository.ifla.org/handle/123456789/830 (accessed January 12, 2022).

Comparing multiple arrangements of the same work will also help to identify different approaches and priorities that arrangers may have had, which in turn may help to better understand the audience or contexts for which a particular arrangement was made. Even without full encodings of all arrangements to be considered by the project, the concept of a work's core might be applied during the comparison, and in doing so the musicological study benefits from this new digital methodology.

2.2 A Study of Musicological Patterns in Domestic Arrangements

A domestic audience represented a complex market for publishers. Levels of musicianship could vary substantially, and the arranger would have weighed the requirements for idiomatic performance on new instrumentation with the use of the music as *aide memoire* or study score for its model. This balance will have involved conscious decisions, but these are offset by the pragmatic realities of a rush to publish a popular new work and the abilities of the arranger.

Drawing on work gathering contemporary descriptions of home music-making [1], along with published reviews and adverts for reductions of works, plus title pages and illustrations in the books themselves, we are exploring the relationship between the music of domestic arrangements on the one hand, and the market and the narratives around it on the other. This will be achieved through technological approaches which support and enhance the processes of finding, gathering, comparing, and annotating materials. Thus the musicological research will both be assisted by the digital methods and provide a case study of a rich humanistic investigation to direct the technical innovations. An important aspect of this exemplary role is the incomplete state of cataloguing and digitisation for much of the material, which forces an incremental, investigative approach on the researcher as in common with much research but not always reflected in digital tooling.

Whereas the previous study (section 2.1) is framed as a close reading of a smaller number of arrangements, this research area exemplifies a broader, shallower survey, aiming to investigate as-yet unexplored collections of domestic music arrangements. In undertaking this more speculative study we hope to make this little understood material more accessible for future scholarship.

We have begun to select and digitise pieces with multiple arrangements in the Bodleian Libraries and Beethoven-Haus collections, or arrangements elsewhere that are of specific interest. In each case, we will create full or partial transcriptions of the notation. Where possible, we will also acquire licence-free audio. With reference to contemporary descriptions, we will gather the material together and explore how the arrangements have been produced, how they differ from each other and the model, and speculate on why that is. This will take into account timbral aspects of reinstrumentation, player competence, preservation of voice leading, and other musical and practical factors. These observations will initially be structured around annotations made using the tools, models, and representation outlined below.

This objective complements the study of Steiner's 'editions', where the material has already been identified. Between these two objectives we aim to validate an end-to-end digital approach to musicology, both in the sourcing of materials for study and by the close analysis of those materials.

2.3 A Prototype Digital Environment for Musicological Exploration of Digital Material

Discovering, collating, and annotating music-related historical materials is a central element of many musicological investigations (Figure 1), including the two studies introduced above. Digitised materials may come in the form of images (whether facsimiles of pages of scores, texts and pictures, or photographs of objects), audio-visual files, or encoded texts and scores. Deploying, coordinating, and collaborating with these materials on a computer can be cumbersome, especially given limited screen space.

In support of our musicological research studies, we are devising a novel prototype digital environment to support quick, accessible, juxtaposition and combined annotation of materials, making efficient use of any catalogue and descriptive information as it is available – as opposed to making metadata improvement a precondition for research, valuable through it is. In a similar vein, it will support the addition of *partial* transcriptions of music and text as well as complete additions, allowing a thesis to be developed during the process of exploration without requiring a full transcribed encoding of notation.

Where possible, the materials being delivered will be coordinated automatically in ways that increase the likelihood that related parts are presented together by the system; where helpful in aiding such alignment and creating musicological annotations, computational analysis will be made available to the musicologist. We will primarily work to find instances of candidate materials held in libraries that use the International Image Interoperability Framework (IIIF) specifications, which can then be supplemented by music encodings. Annotations will always be saved, and organising and retrieving these will be supported.
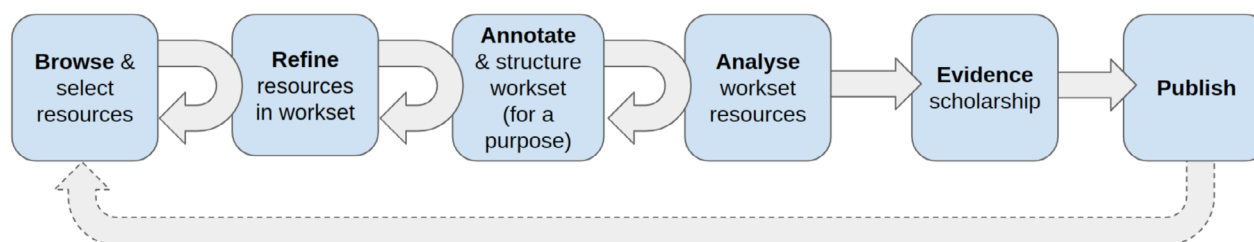

Figure 1: Stages of a musicological investigation undertaken using digital materials, to be supported in the prototype research environment.

2.4 Innovative Digital Annotation Methodologies Supporting Musicological Studies

An investigation of the musical world surrounding home music-making requires an approach that combines traditional archival and library work with digitally supported scholarship. Such work will also accumulate a secondary layer of note-taking and record keeping by the researcher, recording observations about and connections between different materials.

In conjunction with our musicological studies – which we are using to both motivate and evaluate our proposed digital environment – we are refining and expanding several methods to support the musicological annotation of domestic music collections from the Beethoven-Haus, Bodleian Libraries, and beyond. Each of these will provide a specific solution to a research need and, in doing so, potentially act as a methodological template for future practice in other areas of digital musicology.

We are creating the necessary encoding extensions to MEI so that an unchanged core can be marked as consistent between arrangements and editions, enabling comparison of differences; and for partial 'sparse' encoding of fragments during the gathering and relating of digital source materials as they are discovered and collated. MEI-based encoding practice will need to cover a range of situations, beginning from sparse encodings containing nothing more than information about the performing forces or numbers of measures, and ending with full and detailed encodings of printed copies with manuscript entries and corrections.

The combination of such diverse encodings in a single project is new and will require very careful modelling in order to allow consistent validation of data, a necessary precondition for reliable musicological use. We have begun this process by encoding selected arrangements nominated in the course of the two studies described above, and identifying commonalities in their relevant musicological 'features of interest'. Taking these prototype models we will manually derive an ODD customisation, which will then be used to validate encodings of a wider range of arrangements associated with the studies. This will be an iterative process, with novel observations from newly modelled music documents resulting in changes to the ODD customisation, converging on a stable encoding which can be sustainably documented.

Beyond that which is solely encoded in MEI, we are working to identify and declare musicological concepts which bridge the varied resources from across our studies, enabling them to be consistently referenced in our scholarly findings, using Linked Data technologies to formalise an ontological model. By applying the same model to both of our focus studies (which are representative of different stages of research maturity – see 2.1 and 2.2), we will demonstrate a single model applied across the research lifecycle – from the resource finding and triaging activities exemplified in the second study, to the close study and analysis found in the first.

The most significant aspect of this contribution will be the encoding of *a* (rather than 'the'!) high-level musicological framing, consistently applied to materials which themselves were not created or conceived as explicitly conforming to a common model or schema. We will realise this work through an extensible and self-describing

machine readable model according to Semantic Web and Linked Data principles: with semantic relationships and constraints implemented using the Web Ontology Language (OWL); and anchored to digital materials using Web Annotations. In this way we will connect evidential resources in a manner which can be incorporated consistently within future digital workflows, encompassing digital materials not only encoded using MEI, but also those with less detailed or curated records.

We have begun this work by identifying an initial set of digital resources necessary to progress our musicological studies and their narratives (sections 2.1 and 2.2), then creating a first draft model which can distinguish both the type of material (e.g. score, edition, advert, etc.) and granularity of association necessary to disambiguate scopes within that material (e.g. work, score, note). Next, we will elicit the cross-cutting musicological concepts required to formulate a single narrative incorporating all types of material from our studies. We anticipate these relationships may be indirect, i.e. intermediate abstract concepts may need to be instantiated to maintain a clear and consistent model. The method will be 'MELD-compatible', such that the annotations can be visualised using the Music Encoding and Linked Data framework [16].

3 Conclusion

This paper gives an introduction to the *Beethoven in the House* project, which encompasses two novel and complementary studies into domestic music arrangements of the 19th century, a digital research environment which will be co-developed alongside the studies, and the innovative application of digital musicology methods within this environment. Above, we have given the motivation and our proposed approach for our four interrelated areas of work, which are currently being undertaken within the research project. We look forward to reporting on our progress and results from each of these in future papers, so advancing the state of the art in digital methods. Working within and across each of these contexts, we hope to highlight the opportunities provided by such combinations of scholarship, technology, and collections.

Acknowledgements

Works Cited

[1]   Bashford, Christina. "Historiography and Invisible Musics: Domestic Chamber Music in Nineteenth-Century Britain" *Journal of the American Musicological Society* 63, no. 2 (2010), 291–360, https://doi.org/10.1525/jams.2010.63.2.291.

[2]   Christensen, Thomas. "Four-Hand Piano Transcription and Geographies of Nineteenth-Century Musical Reception" *Journal of the American Musicological Society* 52, no. 2 (1999), 255–298, https://doi.org/10.2307/831999.

[3]   Christensen, Thomas. "Public Music in Private Spaces. Piano-Vocal Scores and the Domestication of Opera" in *Music and the Cultures of Print*, ed. Kate van Orden. New York and London: Garland, 2000, 67–93.

[4]   Dorfmüller, Kurt, Norbert Gertsch, and Julia Ronge, eds. *Ludwig van Beethoven. Thematisch-bibliographisches Werkverzeichnis. Revidierte und wesentlich erweiterte Neuausgabe des Verzeichnisses von Georg Kinsky und Hans Halm*, 2 vols. München: G. Henle, 2014.

[5]   Feder, Georg. "Die Bearbeitung von Haydns Armida für Streichquartett" in *Festschrift Otto Biba zum 60. Geburtstag*, ed. Ingrid Fuchs. Tutzing: Hans Schneider, 2006, 113–126.

[6]   Hinrichsen, Hans-Joachim, and Klaus Pietschmann, eds. *Jenseits der Bühne. Bearbeitungs- und Rezeptionsformen der Oper im 19. und 20. Jahrhundert. Symposiumsbericht der IMS-Konferenz Zürich 2007* (Schweizer Beiträge zur Musikforschung, 15). Kassel: Bärenreiter 2011.

[7]   Lewis, David. "Owning Another's Music: Edition, Arrangement and Musical Influence" in *Dagstuhl Seminar Proceedings 09051: Knowledge Representation for Intelligent Music Processing* (2009), 52.

[8]   Münzmay, Andreas, and Christine Siegert. "Phonographischer Text, Interpretation und Aufführungsmaterial als kritisch edierbarer Sachzusammenhang. Ein Beitrag zur Theorie der Edition von Klangdokumenten" *editio* 33 (2019), 10–30, https://doi.org/10.1515/editio-2019-0002.

[9]   November, Nancy, ed. *Chamber Arrangements of Beethoven Symphonies. Part 1. Symphonies Nos. 1, 3, and 5 Arranged for Quartet Ensembles*; *Part 2.* Wellington's Victory *and Symphonies Nos. 7 and 8 Arranged for String Quintet*; *Part 3. Symphonies Nos. 2, 4, and 6 Arranged for Large Ensembles* (Recent Researches in the Music of the Nineteenth and Early Twentieth Centuries, 75, 77, and 79). Middleton (Wis.): A-R Editions, 2019–2020.

[10] Pietschmann, Klaus. "Die Opernklavierauszüge in der Musikaliensammlung Ferdinands III. von der Toskana" *Die Tonkunst* 8, no. 2 (2014), 205–216.

[11] Siegert, Christine. "Zu Gestalt und Funktion von Partiturauszügen im späten 18. Jahrhundert" in *Gattungsgeschichte als Kulturgeschichte. Festschrift für Arnfried Edler*, ed. Christine Siegert, Katharina Hottmann, Sabine Meine, Martin Loeser, and Axel Fischer (Ligaturen. Musikwissenschaftliches Jahrbuch der Hochschule für Musik und Theater Hannover, 3). Hildesheim: Georg Olms, 2008, 109–121.

[12] Siegert, Christine. "Opernbearbeitungen Haydns in seiner Instrumentalmusik. Überlegungen zu Form, Musiksprache und Aufführungspraxis" in *Aufführungspraxis von Musik der Klassik. XXXVI. wissenschaftliche Arbeitstagung Michaelstein, 23. bis 25. Mai 2008*, ed. Boje E. H. Schmuhl in cooperation with Ute Omonsky (Michaelsteiner Konferenzberichte, 76). Augsburg: Wissner, 2011, 159–172.

[13] Siegert, Christine. "Autograph – Autorschaft – Bearbeitung. Überlegungen zu einer Dreiecksbeziehung" in *Das Autograph – Fluch und Segen. Probleme und Chancen für die musikwissenschaftliche Edition. Bericht über die Tagung der Fachgruppe Freie Forschungsinstitute in der Gesellschaft für Musikforschung, 19.–21. April 2013*, ed. Ulrich Krämer, Armin Raab, Ullrich Scheideler, and Michael Struck (Jahrbuch des Staatlichen Instituts für Musikforschung Preußischer Kulturbesitz 2014). Mainz: Schott, 2015, 99–111.

[14] Siegert, Christine, and Kristin Herold. "Die Gattung als vernetzte Struktur. Überlegungen zur Oper um 1800" in *'Ei, dem alten Herrn zoll' ich Achtung gern'. Festschrift für Joachim Veit zum 60. Geburtstag*, ed. Kristina Richts and Peter Stadler für den Virtuellen Forschungsverbund Edirom. München: Allitera, 2016, 671–702, https://doi.org/10.25366/2018.43.

[15] Tyson, Alan. "Beethoven in Steiner's Shop" *The Music Review* 23 (1962), 119–127.

[16] Weigl, David M., and Kevin R. Page. "A Framework for Distributed Semantic Annotation of Musical Score: 'Take It to the Bridge'" in *Proceedings of the 18th International Society for Music Information Retrieval Conference* (ISMIR 2017), 221–228, https://archives.ismir.net/ismir2017/paper/000190.pdf.