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Gesualdo on-line

the economic model of a digital music edition

Philippe Vendrix (CNRS - CESR, RICERCARLAB)

Presenting the economic model of a scientific edition does not mean suddenly reducing it to a commercial object. On the contrary, approaching it through the medium of project management, including its budgetary dimension, may prove to be a useful way of reflecting on the experience, feeling its dynamics and identifying its pitfalls. Some members of the musicological community question the practice of music publishing, while others call for the maintenance of a demanding philology that requires rare skills and a capacity for decision-making, for the manifestation of scientific authority¹. For several decades now, the digital world has been shaking up our ways of conceiving, working and disseminating. From the collective construction of the Music Encoding Initiative² to the promotion of open science³, we are experiencing profound upheavals that are having a lasting effect on musicology in all its forms, whether philology or analysis, codicology or the establishment of fine chronologies⁴. However, to proclaim the end of one mode of expression in order to proclaim the power of another deserves to take into account the entire chain of knowledge production and dissemination. Through a singular case - the online publication of the work of Carlo Gesualdo da Venosa - we wish to critically review an achievement of 2015 by placing it in the context of the budget. What financial and human resources are we mobilising to make Gesualdo's nearly 600 plays available to all readers? What are the consequences of such a prospect?

The project

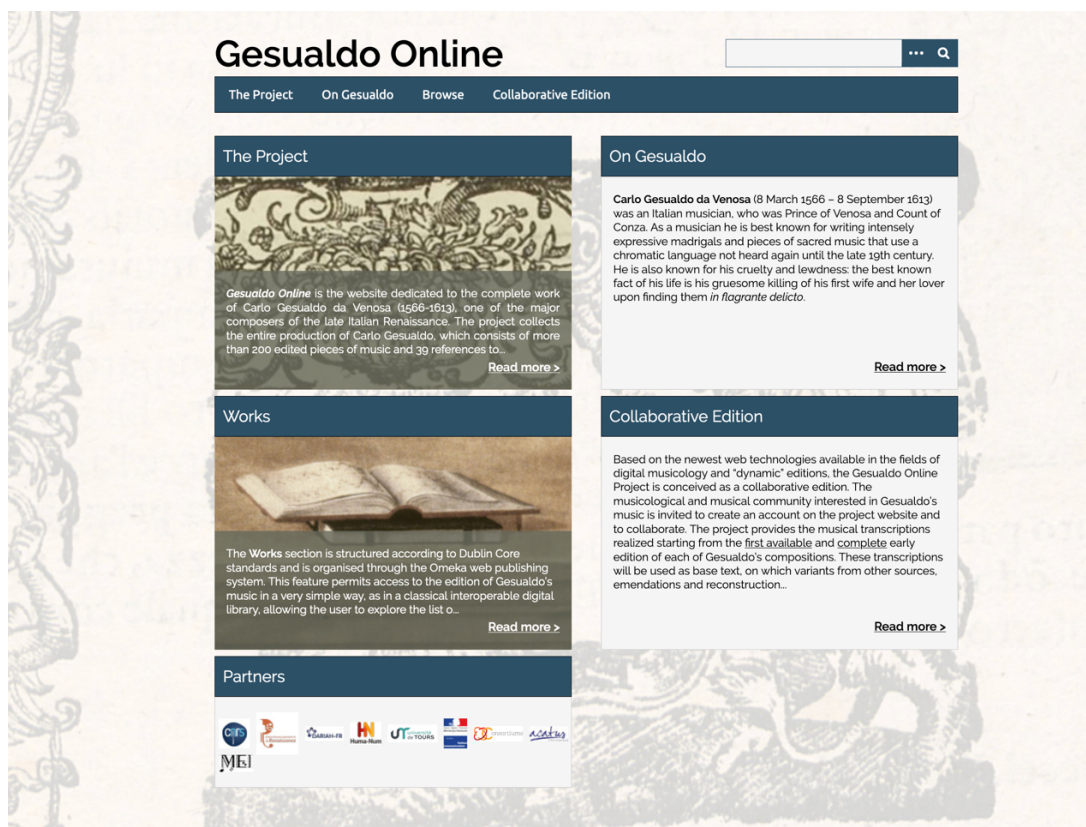
The idea of offering an online edition of Gesualdo's works (GoL) was born from the convergence of several projects (<https://ricercar.gesualdo-online.cesr.univ-tours.fr>).

¹ On music philology, see James Grier, *The Critical Editing of Music. History, Method, and Practice* (Cambridge: Cambridge University Press, 1996); Maria Caraci Vela, *La filologia musicale*, 3 vols. (Lucca: Libreria Musicale Italiana, 2013-2015).

² Perry Roland, Andrew Hankinson, Laurent Pugin, "Early music and the Music Encoding Initiative", *Early Music*, 42 (2014) pp. 605-611.

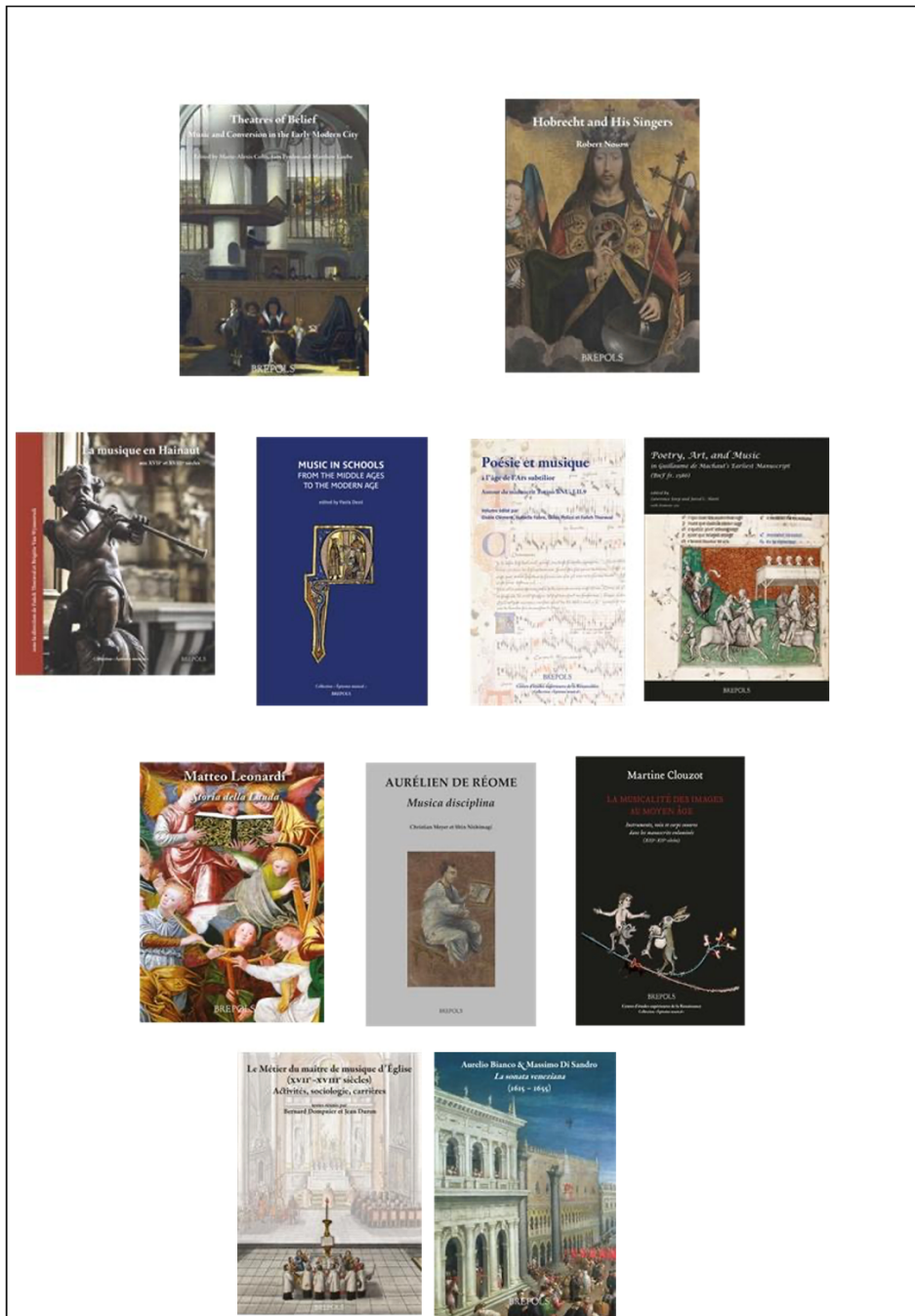
³ Rachel Scott, Anne Shelley, "Music Scholars and Open Access Publishing", *Notes*, 79 (2022) pp. 149-178.

⁴ Ronald Broude, "Musicological Editions and the Textual Fallacy: On the Critical Use Of Musical Texts", *Notes*, 79 (2023) pp. 335-365.



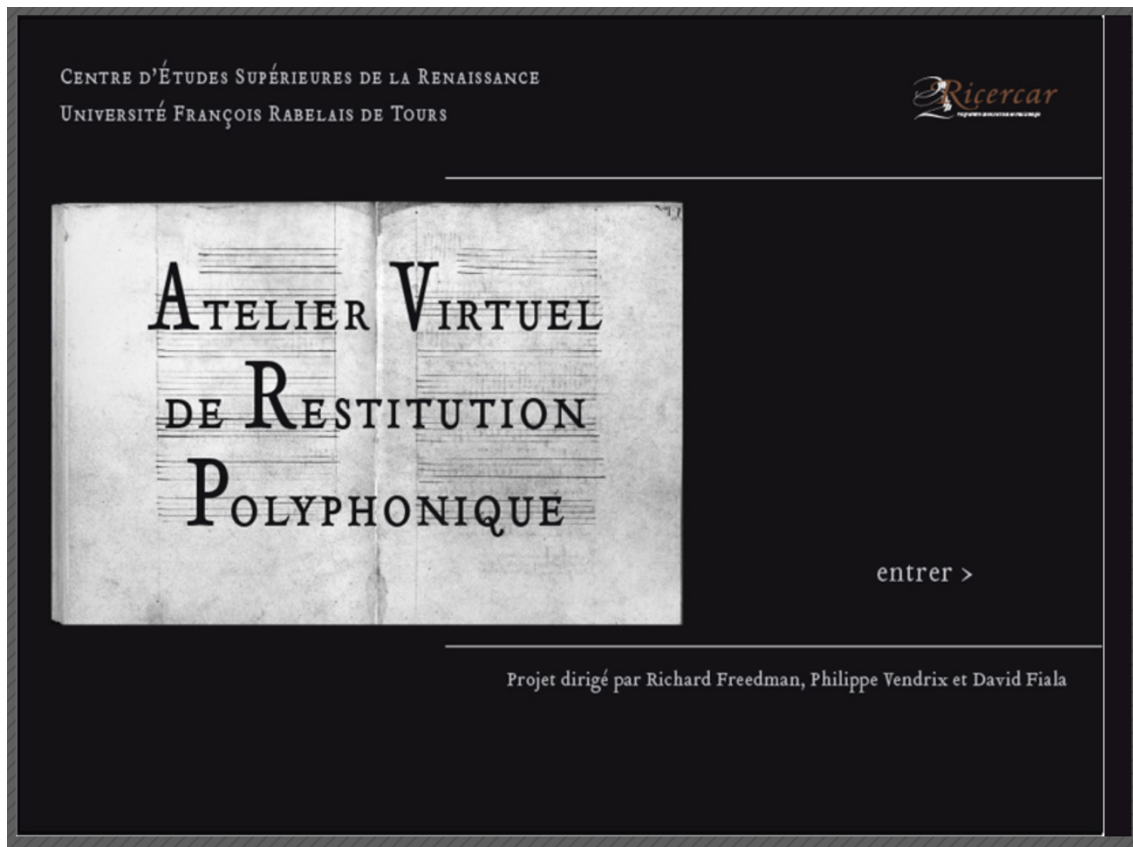
First of all, there was the decision by Brepols to revise the editorial programme of the Epitome Musical collection. This collection brings together monographs, collective works, reference works and critical editions (<https://www.brepols.net/series/em>). The latter were struggling to find their place in the catalogue of a publishing house with a rich catalogue marked by the defence of humanistic scholarship and a great tradition of philological publications. The critical editions we proposed were also suffering from poor sales (though not catastrophic by comparison⁵). In short, we had to find a new way of sharing this important part of the musicological work on the early repertoire. And finding a solution was all the more important because the editions are one of the privileged places where musicologists and performers can engage in dialogue. This dialogue is essential for one of our patrons, the Ministry of Culture.

⁵ There is no study of the sales of monumental editions. This assertion is based only on informal exchanges of information.



A second factor has been added to this first one. Since 2010, the RICERCARLAB has been carrying out a project for the recovery of incomplete Renaissance works. This has been a long-term project, with researchers working full-time on these restitutions. It was also the occasion for intensive workshops lasting several days, bringing together experienced researchers and students or doctoral candidates. A Virtual Workshop for Polyphonic Restoration (AVRP) was then created, whose purpose was not to enrich an already impressive repertoire with “new” works. The AVRP was conceived as a place for

reflection and exchange on Renaissance contrapuntal techniques. A series of unfinished pieces from the first half of the 15th century to the beginning of the 17th century were selected to illustrate the diversity of approaches, to establish links between compositions and theoretical texts, and to avoid the application of a single reading grid to a diverse repertoire. The aim was at once pedagogical, historical, and analytical.



In other words, this workshop set out to lay the foundations of an experimental musicology applied to Renaissance counterpoint⁶. This workshop worked both classically and with the help of digital tools. It was first classical, when musicologists and experienced performers confronted each other with their solutions to the mystery of a missing part. It was then based on a digital project, when Richard Freedman attempted to systematise the reconstitution process on the basis of a repertoire that lent itself to it: the songs published by Du Chemin between 1549 and 1568⁷. This systematic approach has fed the Lost Voices

⁶ This workshop is the first of its kind and has spread widely. See again recently the work by Niels Berentsen: "Reimagining Ciconia's Lacunary Ballate", *Studi Musicali*, 13 (2002) p. 7-48. See also Fabrice Fitch, *Renaissance Polyphony* (Cambridge, Cambridge University Press, 2020). Other initiatives have been carried out, such as the one led by Magnus Williamson at Newcastle University.

⁷ Richard Freedman, Philippe Vendrix, "The Chansonniers of Nicolas Du Chemin: A Digital Forum for Renaissance Music Books", *Die Tonkunst*, 5 (2011) p. 284-288.

project website (<http://digitalduchemin.org>) and led to the development of efficient digital tools for musical analysis.

The Lost Voices Project

Companion resource to *Les livres de Chansons Nouvelles de Nicolas Du Chemin (1549–1568)*, hosted by the *Centre d'Études Supérieures de la Renaissance in Tours, France*

The Project ▾ Browse ▾ Reconstructions Links ▾ Help



Project News

VISUALIZATION TOOLS

Here you can find various documents and resources for data analysis concerning the Du Chemin Lost Voices Project:

- Similarity Network 2015: [Similar Cadences by Type, Final Tone, and Adjacent Cadence](#)
- Similarity Network 2015: [All Pieces as Strings of Cadences](#)
- Similarity Network 2015: [Similar Pieces according to Cadential Structure and Final Tone](#)
- [Freedman Presentation for International Musicological Society 2015 on Visualizations](#)

FREE USER ACCOUNTS

Our free user accounts allow you to take private 'notes' about individual works and reconstructions. You can also participate in live public 'discussions' about any work. To request an account, just send an email to admin@digitalduchemin.org (or follow the link to request an account at the upper right). For more information how to use notes and discussion, see 'notes' and 'discussions' under the [help menu](#)

DYNAMIC DIGITAL EDITIONS

[Music Encoding Initiative \(MEI\)](#) compliant encodings are the basis of our dynamic digital editions. Pieces with variant readings, emendations, or reconstructions now feature a sidebar where you can choose among alternatives. Read about how it works in our help menus. Want to look at the MEI itself? Look for the MEI link on each page piece (upper right).

RECONSTRUCTIONS (AND MISSING VOICES)

Explore the problem of the "lost voices" in pieces from Books 12 through 16 of the *Chansons nouvelles*. We have only the superius and tenor parts for some 80 compositions from these books. Browse by Book (see banner link above) to review the contents of the volumes, or browse our proposed Reconstructions (see banner link above). Read more about how to use the Work View to display the text of each piece and the various reconstructions. Want to try your hand at your own reconstructions, or use them with classmates and students? Follow the links on the Du Chemin Editor's Forum for PDFs and Sibelius files of each piece, worksheets with texts, and a dossier explaining our methods: [Editors Forum](#).

Among the famous incomplete works, the second book of Gesualdo's *Sacrae Cantiones* occupies an essential place⁸. The restitution of the two missing voices (*sextus* and *bassus*) has

⁸ *Sacrarum cantionum Liber Primus. Quarum una septem vocibus, cetera sex vocibus* (Naples, Giovanni Pietro Cappuccio; Costantino Vitale, 1603); the volume containing the five-voice motets, published the same year, is complete. The restitution of the *Madrigali a sei voci* of 1626 is impossible: five of the six voices are missing. The only preserved voice has not been published on GoL.

been the subject of extensive work⁹. The result, which is currently being edited, perfectly illustrates what we meant by ‘classical’ above.

51

C et in ho - ra, mor - tis me - æ, et in ho - ra mor - tis me - æ,
 S - - - - - tis me - æ, et in ho - ra mor - tis me - æ,
 A - - - - - tis, mor - tis me - æ,
 Q nunc et in ho - ra,
 T me - æ, et in ho - ra mor - tis me - æ,
 B - - - - - ra, et in ho - ra mor - tis me - æ,

55

C et in ho - ra mor - tis me - æ. et in ho - ra mor - tis me - æ.
 S et in ho - ra mor - tis me - æ, mor - tis me - æ.
 A et in ho - ra mor - tis me - æ.
 Q et in ho - ra mor - tis me - æ.
 T et in ho - ra mor - tis me - æ.
 B et in ho - ra mor - tis me - æ.

✓ Mes. 54: Ralentissement du débit rythmique avant une courte pause générale. Cf. Exemple 10 : SC5, 3, mes. 26-31

✓ Mes. 58: Chute de tierce (nota cambiata) à l'arrivée du Sextus. Ce procédé en voie de disparition à cette époque se retrouve néanmoins encore dans les *Responsoria*. Cf.: Resp. VI, 9, mes. 77-78

C ce re - fri - ge - ri - um! O, o Ma - ri - a,
 A ce re - fri - ge - ri - um! O, o Ma - ri - a,
 Q ce re - fri - ge - ri - um! O, o Ma - ri - a,
 T ri - um! O, o Ma - ri - a,
 B ce re - fri - ge - ri - um! O, o Ma - ri - a,

✓ Mes. 56-58 : Le Sextus est le seul à répéter le texte « mortis meæ » car si l'on veut conserver le profil de notes répétés sur « et in hora », l'alternative (cependant moins élégante) serait la suivante: Variante 3

77
 C -lor me - us.
 S -us.
 A -us.
 T -lor me - us.
 Q do - lor me - us.
 B me - us.

56
 S ho - ra mor - tis me - æ.

⁹ This is not the first attempt to restore these motets. See James Wood, *Gesualdo: Sacrae Cantiones II. An analysis towards reconstruction* (Oxon, Vision Edition, 2014). This reconstruction resulted in a recording by the Vocalconsort Berlin conducted by Wood (Harmonia Mundi, 2013).

In 2013, Dinko Fabbris launched a long-awaited editorial project, that of a monumental edition of the work of Carlo Gesualdo. He set up a scientific committee, convinced Bärenreiter to include this edition in its catalogue, and the project was launched¹⁰. The RICERCARLAB is responsible for the volume of the *Sacrae Cantiones*. The first volumes of the monumental edition will appear in 2017 with the *Madrigali a cinque voci. Libro quinto* (1611), edited by Maria Caraci Vela. A fifth volume dedicated to the *Madrigali a cinque voci. Libro primo* (1594) was published in 2022 under the responsibility of Marco Della Sciucca. At the rate of one volume per year, the project should be completed by 2027. Each volume will be structured in the same way, in strict accordance with the tradition of musicological philology: an extensive introduction will be followed by an edition of the texts, then the musical transcriptions and, at the end of the volume, the critical apparatus. The global scholarly ambition of this monumental work is unparalleled. The sources are meticulously studied; the texts and compositions are the subject of detailed analyses that place Gesualdo's works in their poetic and musical context. Some illustrations allow the reader to measure the differences in the work of Gesualdo's editors, both during his lifetime and after his death. The volumes of the Baerenreiter edition do not provide links to library resources (to view the full source), catalogues (such as the *Tasso in Music Project*: <https://www.tassomusic.org/>) or GoL.



LA SOTTOSCRIZIONE

L'edizione consta di dodici volumi.
I volumi possono essere acquistati singolarmente, oppure è possibile prenotare l'opera completa a un prezzo ridotto.

Ciascun volume contiene una Introduzione (in italiano e in inglese), una sezione di documenti e l'edizione dei testi intonati, accompagnati da un commento critico (in italiano e in inglese).
Formato 23 x 30 cm, tela

THE SUBSCRIPTION

The edition will comprise twelve volumes.
They can be purchased individually or the whole series can be subscribed to at reduced prices.

Each volume contains a Preface (Ital/Eng), a facsimile section, a critical edition of the texts set to music as well as a Critical Commentary (Ital/Eng).
Format 23 x 30 cm, linen-bound

DIE SUBSKRIPTION

Die Ausgabe umfasst zwölf Bände. Sie können einzeln bezogen oder komplett zu reduzierten Preisen subskribiert werden.

Jeder Band enthält ein Vorwort (ital./engl.), einen Abbildungsteil, eine Edition der vertonten Texte, ferner einen Kritischen Bericht (ital./engl.).
Format 23 x 30 cm, Leinen

¹⁰https://www.baerenreiter.com/fileadmin/Service_Allgemein/Werbemittel/deutsch/SPA274_Gesualdo_Prospekt_web.pdf

The invitation to contribute to the monumental edition and the work accumulated during the restitution workshops, combined with the digital ambitions of the Lost Voices Project, convinced us to develop a new tool that would serve both musicologists and performers: the realisation of a digital edition of Gesualdo's oeuvre.

The conception

This brief reminder of the context in which GoL was conceived gives an idea of the synthesis that underpinned the design of the digital edition. It was a question of combining experience and new ambitions, while taking care to

- Develop a new means of dissemination.
- Provide a response to the challenges of digital humanities in terms of publishing, without being limited to computer problems.
- Promote dialogue, not only to propose new recompositions of the missing pieces, but also to try to create a collective dynamic.
- To act quickly.

GoL is designed to be an interoperable digital library. The data is aligned with Dublin Core standards, while the whole is published under Omeka. The site provides three categories of data: links to sources, data on works, and information on individuals related to Gesualdo's production. The information on individuals is limited to essential data and links to resources useful in the case of Gesualdo (Treccani). The pages dedicated to the sources allow a simple navigation based on the reference to the works, on the references to the persons and on the links to the copies of the source in question (these links are now obsolete, but their updating to permalinks can easily be done).

Amor pace non chero — seconda parte

MEI PDF

◀ 1/6 ▶

1 Canto
A - mor, pa - - ce non che - ro, non cheg gi'u sber - g'o scu - - -

2 Alto
A - mor, pa - - ce non che - ro, non cheg gi'u sber - g'o scu - -

3 Quinto
A - mor, pa - - ce non che - ro, non cheg gi'u sber - g'o scu -

Tenore
pa - - ce non che - ro, A -

Basso
A - mor, pa - - ce non che - ro,

◀ 1/6 ▶

Measure	Voice	Type	Source/Responsibility
M2	Alto	Variant	in G1743
M2	Alto	Variant	in G1743
M5	Alto	Variant	in G1743
M5	Alto	Variant	in G1743
M8	T	Variant	in G1743
M8	B	Variant	in G1743

▸ Base text

▸ Source G1743

Source

[Madrigali. A Cinque Voci. Ilibro primo](#)

How to quote

"Amor pace non chero — seconda parte." *Gesualdo Online*, accessed March 22, 2023, <https://ricercagesualdo-online.cesr.univ-tours.fr/items/show/5978>.

Book position

9

Composer

Gesualdo, Carlo

Sigle RISM Library, Shelfmark

[I-MOe. Mus.F.496](#)

Catalogue

[RISM A I. G-1725](#)

[Vogel 1161](#)

Concordance Manuscript

[Egerton 3665](#)

Concordance Print

[1603. RISM A I. G-1726](#)

[1604. RISM A I. G-1727](#)

[1608. RISM A I. G-1728](#)

[1613. RISM A I. G-1743](#)

[1617. RISM A I. G-1729](#)

[1617. RISM A I. G-1730](#)

Number Voice

5

Voices name

S, A, 5, T, B

Textual Incipit

Amor pace non chero — seconda parte

Lyrics

Amor, pace non chero,
non cheggio usbergo o scudo,
ma contro al petto ignudo,
se ella medica sia, sia tu guerriero.

Lyricist-Poet

Tasso, Torquato

Literary form

Madrigal

Rhymes

deeD

Document Viewer

Viewing: [CG01_RISM_A_I_G-1725_06b_Se_da_si_nobil_REV.pdf](#)

For each work, this project provides a transcribed musical text from the oldest and most complete edition (in two formats: PDF from Sibelius files and MEI files). These transcriptions will then serve as a basis for integrating variants from other sources, emendations and reconstructions (if any). All contributions must be submitted to the project manager (using the form available in the Collaborative Publishing section). After validation by the editorial team, the variants will be included in the edition and the user's name will be listed among the contributors to the Gesualdo Online project. Users will be able to consult the edition directly on screen in a special interface that allows them to visualise (1) all the variants documented in subsequent early editions, (2) possible emendations, and (3) reconstructions of incomplete works. Variants, emendations and reconstructions can be viewed in three different ways:

- by clicking on the green dot at the top right of the measure in which the variant is located;
- by clicking on the typography of the variant in the list that follows the score;
- or by selecting the source and the bar in the drop-down menu at the bottom of the interface.

The screenshot displays a musical score for five voices: Canto, Alto, Quinto, Tenore, and Basso. The lyrics are: "A - mor, pa - - ce non che - ro, non cheg gi'u sber - g'o scu - - do, - do, A - ce non che - ro, che - ro, non cheg gi'u sber - g'o scu - - do, - do, A - mor, pa - - ce non che - ro, non cheg gi'u sber - g'o scu - - do, A - mor, pa - - ce non che - ro,". A variant list table is shown at the bottom of the interface.

Measure	Voice	Type	Source/Responsibility
M2	Alto	Variant	in G1743
M2	Alto	Variant	in G1743
M5	Alto	Variant	in G1743
M5	Alto	Variant	in G1743
M8	T	Variant	in G1743
M8	B	Variant	in G1743

A dialogue box below the interface allows the user to read relevant critical comments. Registered users can add comments and make changes to the musical text. These criticisms can be both technical and epistemological. On the technical side, one only has to compare GoL's model with the updated RICERCARDATALAB model to see how far it has come in a few years. Navigation on GoL is constrained by Omeka, the richness of which we have probably not yet exploited. It is quite different from what is currently practised.

At the epistemological level, things are much more complex. The fundamental question - and it's at the heart of everyone's concerns - remains how to anchor the principles of a classical philological edition in digital projects. We have tried to offer an alternative, without calling into question the fundamental principles, by bringing to life the information usually confined to critical apparatus¹¹. These critical apparatuses are usually not easy to read! We have therefore opted for a system of variants in pop-up windows, with their explanations below the VexFlow visualisation of the file.

Some have criticised GoL for not offering authoritative editing. We will come back to this point with the measure of the user. In fact, a digital edition makes it possible to get rid of the principle of authority in order to provide all the data related to a piece of music in a comprehensible way. There is no claim to authority; there is the will to provide usable musical data according to modalities that everyone is free to define. Not everything has been achieved in terms of musical data. In 2015, the possibilities for annotating music files and the nature of headers in MEI files were far from what we know today.

Any negative criticism is not only audible, but essential to thinking about digital publishing today¹². However, it seems essential to remember that the design at work in GoL is based on the superimposition of diplomatic readings of the sources. And in the case of Gesualdo, the confrontation with the sources is not extensive: the concordance tables bear eloquent witness to this, as does the critical apparatus of the few volumes published by Baerenreiter.

The cost

The GoL enterprise is far from complete. It lacks information, data and metadata. Above all, GoL should be integrated into an updated digital publishing structure¹³. But that is not our goal today. Beyond describing an already "outdated" realisation, we want to try to measure the cost of this still available resource. Strangely enough, in the now abundant

¹¹ Franz Fischer, "Digital Classical Philology and the Critical Appartus," *Digital Classical Philology: Ancient Greek and Latin in the Digital Revolution*, Saur, De Gruyter, 2019, pp. 203-2019.

¹² Christopher Ohge, *Publishing Scholarly Editions. Archives, Computing, and Experience*, Cambridge: Cambridge University Press, 2021.

¹³ There is not yet a practice guide for digital music publishing. The publication of a Digital Music Publishing Manual is in preparation within the framework of the MUSICA2 consortium of Huma-Num (<https://musica.hypotheses.org/>).

literature on digital editions, the question of cost is rarely raised¹⁴. On the other hand, there is no shortage of reflections on the obsolescence of digital resources and on the means available in the academic world to counteract it¹⁵.

Putting a corpus online means mobilising resources for its production, realisation and dissemination. It also requires resources for its maintenance and the permanence of its accessibility. This is true of any book that is kept in a library under the watchful eye of specialised staff in dedicated buildings.

There is no economic model to refer to. However, financial data can be entered under traditional accounting headings, organised as follows

- Acquisition of documentation
- Encoding of textual and musical data
- Project supervision and monitoring (including data comparison); scientific missions
- Realisation of the site
- Maintenance of the resource
- Transformation and adaptation of the resource

Expense item	2012	2013	2014	2015	TOTAL
Documentation	1000	1000			
Data encoding	42195	22600			64795
Monitoring	4000	6425	11525	32750	54700
Missions			500		500
Website				19950	19950
Total					140945

This summary table calls for several comments. First, there is the question of marginal costs: travel and documentation. The accessibility of the collections makes it possible to carry out certain projects without incurring significant costs for travel or the acquisition of reproductions. This is a not inconsiderable saving of time and resources for an edition such as the GoL, which does not offer any new information on sources, the transmission of repertoires or a careful analysis of the choices and decisions made by printers or copyists in the late sixteenth and early seventeenth centuries.

¹⁴ Most of the works mention, without providing precise data, the question of the environmental sustainability of digital productions.

¹⁵ Such an ambition requires an extension of the missions of university libraries that house the skills required to maintain specialized digital resources, particularly in the humanities and social sciences. This is a discussion to be deployed in as many institutions as possible, at the national and European levels. The project of a Cloud for European Heritage is undoubtedly an opportunity to do so for the "music" field.

Two lines of expenditure, however, show significant amounts. The first is devoted to the editorial work itself. Two musicologists (Marc Busnel, Cristina Cassia) were responsible for the musical transcription, the restoration of the missing parts of the *Sacrae cantiones* and the compilation of the poetic texts. Between them, they have accumulated 18 months of full-time work. Albert Napoli, Antoine Tanguy and Marco Gurrieri revised the data and prepared it for online publication. Finally, two CNRS engineers from RICERCARLAB, Hyacinthe Belliot and Vincent Besson, coordinated all the operations, ensured the integration of the data and supervised the work entrusted to an external private agency responsible for the design of the site. We will come back to three essential points: teamwork, complementarity of skills and management of the working time of all those involved. In this respect, there is a clear difference between the solitary daily life of the editor of a monumental volume and the obligatory coordination of different skills to achieve an expected result within a limited timeframe.

Person in charge ¹⁶	Workload	Mission
Marc Busnel	12 months at 65%	Restitution of missing parts
Cristina Cassia	12 months at 80%	Music engraving/variants
Alberto Napoli	3 months at 100%	Data editing
Antoine Tanguy	8 months at 40%	Database model
Marco Gurrieri:	3 months at 100%	Sib to MEI conversions
Hyacinthe Belliot	6 months at 100%	Project management; source orders; Zotero bibliography creation and feeding; data alignment/revision under Dublin Core; preparation of xls./csv files for DB import; follow-up of Omeka CMS website creation.
Vincent Besson	6 months at 100%	Project management; elaboration of the specifications; follow-up of the creation of the CMS Omeka website; processing and updating of Sib. files; processing and updating of Sib. conversions into MEI.

¹⁶ Hyacinthe Belliot and Vincent Besson are permanent CNRS research engineers at RICERCARLAB. The others have worked under a fixed-term contract, sometimes modulating their activity between several projects. Marc Busnel worked under a research engineer contract; the others, as study engineers.

Finally, the budget includes a line of €19,950 for Acatus, an Orléans company responsible for developing the site on the Omeka CMS and installing plug-ins for reading MEI files and their variants. This cost also requires comment. It is not a question here of assessing the amount incurred, which is relatively reasonable given the market at the time for the creation of sites. It corresponds to 9 months of full-time work for a musicologist (such as Marc Busnel or Cristina Cassia). Outsourcing (a private company outside the research institution) can guarantee a rapid response if the contract is scrupulously respected. In the long term, however, it raises questions: what ownership will internal staff have of a tool developed outside the laboratory? These concerns become problematic if the initial design is not based on a precise data management scheme that guarantees its future use under other CMS or other configurations.

This table (and therefore the averages derived from it) is incomplete. The costs are not considered in their context: the working environment should indeed take into account the resources of the laboratory in which the GoL was designed. Finally, it is not possible to specify the maintenance costs of a resource such as GoL, despite the obvious ecological stakes.

Recently, RICERCARLAB has launched public tenders that would make it possible to think about the cost of a resource like GoL in terms of transformation. As mentioned above, GoL was designed on Omeka in 2014-2015. Today, the new technical environment involves the transfer of the data to be poured in the RICERCARDATALAB model. This raises two issues of competence. One is the alignment of the data and the other is the standardisation of the musical data in a musical input file or in an MEI file. On the basis of Sibelius files that are ready for distribution and MEI files that still have shortcomings in terms of headers and annotations, we have agreed on a retro-conversion cost of €40 per piece of music (format such as a song or motet, or even a section of a mass). Applying this rate to the 595 pieces of Gesualdo would mean mobilising 23800€ today just for the adaptation of the files to cast them in a new digital environment.

The screenshot displays the GoL interface for a musical score titled "Messe 'Je suis deshéritée'". On the left, the "Options" panel is visible, showing settings for "Layout" (page 25), "Orientation" (Page), "Font" (Leipzig), "Critical apparatus" (checked), "Audio" (highlight, note), "Instrument" (Harpischord), and "Tempo (old level)" (0.08 to 0.45). The central area shows the musical score with lyrics and annotations. The right panel shows the "Critical apparatus" section, which includes "Annotations" (e.g., [rest] - Annotation A - John Doe), "Variations" (Source A), and "Annotations" (e.g., [no tem] - Annotation E - Jane Doe).

GoL has 595 pieces. The input and the online adjustment would therefore be 236€ per piece of music. Such a rate applied to Lassus would have to be more than 500,000 €. It would be more or less the same for Palestrina, and the total would be close to one million euros for Philippe de Monte...

Perspectives

The aim of the present demonstration is not the market valuation of a digital resource. Except in the case of an exceptional philanthropic action, it would be utopian to imagine that a research or conservation institution would buy GoL in order to dispose of its data and distribute them according to its own modalities. It is even less conceivable that the project will be financed by public funds (Centre Val-de-Loire region, Ministry of Research, European funds), which presuppose a clearly stated policy of open access. A look at the resources required to carry out a project of this modest scale leads to a number of observations.

GoL is only possible in the context of a laboratory that has a set of competences. These competences are related to document management, to textual and musical philology, to musicology in general, but also to computer science. Bringing these skills together in a single location not only encourages high-quality exchanges, but also allows for a certain speed of action. Any delay in a project such as GoL is detrimental to its completion. The outsourcing of services for the Omeka part makes it difficult to redirect or modify the project, even slightly. At the same time, the concentration in one place of a set of skills acquired over time is a challenge in most of our musicological laboratories. This question is related to the one of obsolescence already mentioned, but it also raises the more fundamental question of how to think about a certain kind of musicological work. And this musicological work is at the same time a resource for researchers and performers, professionals and amateurs, but also a contribution to musicology as a science of data (like other disciplines such as archaeology, linguistics, etc.). Without this data science perspective, musicology risks not having a constructive (and strong) dialogue with the world of cultural and creative industries. This would be a missed opportunity, as the current cultural landscape is being visibly reconfigured.

GoL requires the mobilisation of skills and resources. It also implies the building of a community. One failure of GoL is certainly that it has not taken the time to build a community of interest. The fault lies with its producers, who did not take care to build a network. At the same time, a Gesualdo network here, a Janequin network there, would only have accentuated the fragmentation of the field of “Renaissance musicology” and thus accelerated the process of fatigue. The need for concertation between digital publishing projects is therefore becoming ever more urgent. It is not only a question of agreeing on a data management model; it seems necessary to project editorial achievements into an institutionally sustainable future.

Interpreters have made use of this resource, whether they say so or not: it is intended to be open to all. Of particular note is the recording of the first book of the *Cantiones Sacrae* by the Odhecaton ensemble conducted by Paolo Da Col (Ricerca, 2014), which has taken over the GoL edition. Marc Busnel's renditions of the second book of the *Cantiones Sacrae* were recorded by La Main Harmonique under the direction of Frédéric Betous (Ligia, 2015). On the other hand, the publishers of Baerenreiter's monumental Gesualdo have remained silent about the digital resource. A quick comparison, however, does not deny the GoL enterprise. Certainly, the site does not provide the kind of information and analysis found in the introductions to Baerenreiter's volumes. On the other hand, as far as musical and textual data are concerned, GoL can claim to provide musicologists and performers with the necessary elements for stylistic analysis or for creating a recording according to the artistic choices of the musical ensembles.

GoL has required many hours of work by musicologists trained in palaeography and music philology. Given the current state of technological development, one could imagine seemingly faster solutions. The first would be to digitise existing editions in order to have a starting point. It is not certain that this would save time: meticulous re-reading would take as many hours as direct encoding. Above all, this digitisation would be the image of an edition that responds to the principle of authority that GoL precisely questions. The ideal would be a scanning system that could quickly take into account the graphic peculiarities of the sources, in order to have, within a reasonable time, a series of files, each one representing a diplomatic edition. It would then be necessary to work with superimposition systems, as Laurent Pugin and Mauro Calcagno have imagined with Luca Marenzio (<http://www.marenzio.org/index.xhtml>). This stage is still only a prototype, but it is undoubtedly the one that seems to be the most financially sustainable in a more or less near future.

Beyond the issues of transcription, beyond the work of evaluating the sources, beyond the technical issues of the information contained in the MEI files, it is perhaps a broader issue that the GoL experiment should address. The cost of a digital publishing enterprise implies the mobilisation of resources that are not easily acquired. This kind of publishing also implies a collective participation that crosses the skills of musicologists and performers, scholars and amateurs. Despite these resources and the mobilisation of skills that are clearly complementary, GoL has struggled to find its audience. It would undoubtedly be appropriate to question the design of the digital edition. All the tools are available to navigate between a source and its visualisation in high definition, transcriptions accessible in interoperable formats, exceptional recordings available on platforms. We were all too quick to consider the question of ergonomics, of effectiveness in attracting the attention of Internet users of different backgrounds, when we developed GoL. We have learned to take care of printed works (typographic choices, covers, illustrations, balance of page fill, etc.). But we still don't do that for digital editions, or at least GoL doesn't.

In the 1950s and 1960s, musicologists debated the difficulty of making such prestigious collections as the *Corpus Mensurabilis Musicae* workable: impossible to put these large formats on desks, too many pages per piece for each voice. Finally, the musicologist would have limited his readership and the users of his work. Digital editions make it possible to avoid these reproaches, to open up to all types of users, from the researcher to the amateur, from the listener to the curious person seeking a musical experience rich in information. What digital publishing allows us to do today is to rethink the way we present a part of musicology that is not necessarily popular with the community, namely the valorisation of the musical heritage through editorial work.