

GETTING BACK TO THE SOURCE, VIRTUALLY: RISM AS A TOOL IN THE DIGITAL ENVIRONMENT¹

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Abstract

The online catalogue of the Répertoire International des Sources Musicales (RISM) contains over 1,088,000 records for music manuscripts, imprints, libretti, and treatises. Since the release in 2010, RISM has launched several initiatives to bring musicologists closer to the primary source materials they are researching. The online catalogue attempts to expand the database beyond simply recording the locations of musical sources. With the availability of the RISM data as linked open data, RISM is able to collaborate with other projects in the digital humanities and provide data as a basis for research projects.

The release of Muscat, RISM's open-source specialized software for cataloguing musical sources, has made it easier for RISM project participants to catalogue musical sources.

This article will describe how the RISM online catalogue brings musicologists closer to primary source materials and how musicologists can work with RISM using Muscat to facilitate and disseminate their own source-based research.

Keywords: musicology, digital humanities, musical sources, databases, librarianship, data exchange, source studies, music cataloguing, RISM, Répertoire International des Sources Musicales

Ključne riječi: muzikologija, digitalna humanistika, glazbeni izvori, baze podataka, knjižničarstvo, razmjena podataka, istraživačke izvora, katalogizacija glazbe, RISM

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When the Répertoire International des Sources Musicales (RISM) released its free, online catalogue in 2010, data on over 700,000 musical sources became available to researchers worldwide at no charge. Since this release, RISM has launched several initiatives to bring musicologists closer to the primary source materials they are researching. The online catalogue, which has in the meantime grown to over 1,088,000 records, attempts to expand the utility of the database beyond simply recording the locations of musical sources, though this certainly remains one of its primary goals. RISM is also able to collaborate with other projects in the digital humanities and provide data as a basis for research projects.

The recent availability of Muscat, RISM's specialized program for cataloguing musical sources, to contributors worldwide has made it easier for RISM project participants to catalogue musical sources. The program also opens up the opportunity for musicologists to use Muscat as a tool in their own documentation projects.

This article will illustrate RISM's role in the digital environment by showing the opportunities available for engaging with RISM data from two directions: both as a user of and a contributor to RISM. Examples will be given of data exchanges between RISM and other institutions and show how to use RISM data as a tool to support research in the digital humanities.

Introduction

RISM (Répertoire International des Sources Musicales/International Inventory of Musical Sources) is an international, non-profit organization with the goal of comprehensively documenting the current locations of musical sources worldwide. It was founded in 1952 and is sponsored by the International Musicological Society (IMS) and the International Association of Music Libraries, Archives and Documentation Centres (IAML). RISM strives to record information about music manuscripts, printed music editions, works on music theory, and libretti. Sources may be housed in libraries, archives, churches, museums, schools, and private collections. In short, RISM documents *what* exists and *where* it can be found. This organization is the largest and only global operation that documents written musical sources.

In more than 35 countries around the world, one or more national RISM working groups participate in the project. Around 100 contributors conduct cataloguing projects in which the musical sources preserved in their countries are described. Their records are transmitted to the RISM Central Office in Frankfurt, which collects, unifies, and publishes the information in an online catalogue (<http://www.rism.info> and <https://opac.rism.info>). The online catalogue is available free of charge and is made possible thanks to an agreement between the Central Office, the Bayerische Staatsbibliothek (Bavarian State Library) in Munich, which hosts the catalogue, and the Staatsbibliothek zu Berlin, Preußischer Kulturbesitz

(Berlin State Library - Prussian Cultural Heritage), which hosts the data on its servers. The Central Office is financed by the Union der Deutschen Akademien der Wissenschaften. National working groups are supported by the Central Office through training on how to describe sources according to RISM standards, methodical supervision throughout the project, and technical support.

Users of RISM include:

- musicologists who use RISM as a basis to compile catalogues of works, create critical music editions, identify anonymous sources by comparing music incipits, or explore questions of transmission and repertoire;
- musicians who discover lesser-known works to give concerts that go beyond the usual repertoire;
- librarians and archivists who find manuscripts or early printed editions for their patrons or to see if additional copies of a print are held at other institutions;
- students who consult primary sources for an assignment or a term paper; and
- music antiquarians who wish to find out how many prints that they are offering are still extant.

Scope of RISM

For a long time, most of the sources in the RISM online catalogue were mainly in European and North American libraries and the majority of the sources included in RISM dated from the time between 1600 and 1850. Such a scope is still true for the most part, but in recent years a lot has caused these geographical and chronological boundaries to open.

The first RISM working group in Asia was founded in 2006 in Japan. Since then, one working group was founded in South Korea and most recently a working group for the Chinese-language region (presently including China, Hong Kong, and Taiwan) was formed in 2015. In Latin America, projects are underway concerning sources in Brazil and Mexico. A conference hosted by RISM in 2016 called »Documenting Musical Sources in Latin America« brought to light the source documentation activities occurring in Central and South America and the Caribbean and confirmed the interest in international cooperation to document sources there.² Seeking partnerships worldwide remains one of RISM's goals.

As to chronological limits, RISM has traditionally laid out the time frame of 1600 to 1850 as a way to support projects that are grant funded or working within other limitations. Because it is nearly impossible to secure funding for a project

² See the conference website at <http://www.rism.info/en/publications/latin-america-conference-2016.html> (accessed 1 May 2017).

without any sort of scope, 1600-1850 serves as a convenient time frame for many, especially in Europe, and in many countries, work even within this limit is far from finished.

However, RISM recognizes that some national groups, given their unique histories and constellations of sources preserved in their countries, may find other chronological frameworks that are more appropriate. In other cases, sometimes RISM contributors would prefer to catalogue an entire collection or archive rather than leave portions unprocessed due to chronological limits. Due to these factors, RISM receives data from beyond what many regard as the classic RISM period of 1600-1850. RISM welcomes data on relevant sources – especially manuscripts – from any time period, and we encourage contributors to not feel restricted by chronological limits when appropriate.³ In the RISM database, researchers will find sources by Sofia Gubaidulina, Gustav Mahler, Giacomo Puccini, Richard Strauss, and Giuseppe Verdi. Among the most recent manuscripts in RISM are autograph partsongs by Karsten Gundermann dating from 2016.

RISM contributors from the Croatian working group, which has been active since the 1960s, have contributed over 9,300 descriptions of manuscripts and printed music that are available in RISM's online catalogue.⁴ The online RISM sigla directory shows the locations of 120 institutions in Croatia that house musical sources.⁵ Among the significant Croatian sources in RISM are over 3,600 records for part of a collection that belonged to Nikola Udina-Algarotti (1791-1838), a priest and teacher from Krk who spent part of his career in Salzburg and Vienna.⁶ Udina-Algarotti evidently mostly collected music of his own time and surroundings. The manuscripts and printed editions bear witness to the activities of contemporary minor composers, but also include compositions by Luigi Gatti, Joseph Haydn, and Wolfgang Amadeus Mozart.⁷ In addition, the online catalogue documents works composed and owned by Elena Pozza-Sorgo (1784-1865), one of the earliest woman composers in Croatia.⁸

³ As far as printed music is concerned, databases such as WorldCat (<http://www.worldcat.org/>) provide ample coverage of modern printed editions, and RISM does not wish to duplicate efforts in this area.

⁴ A history of the RISM Croatia and an overview of their projects are available in Vjera KATALINIĆ – Lucija KONFIĆ: Project RISM Croatia: The Last 10 Years, http://www.rism.info/fileadmin/content/community-content/events/RISM_Conference_2012/KatalinicKonfic.pdf (accessed 1 May 2017).

⁵ The RISM Directory of Library Sigla is available at <http://www.rism.info/en/sigla.html>. Sigla for Croatian institutions begin with HR.

⁶ The records can be found in RISM by searching by the library siglum HR-Zha.

⁷ Zdravko BLAŽEKOVIĆ: Music Autographs in the Nikola Udina Algarotti Collection in Zagreb (circa 1740 - circa 1840), *Current Musicology*, 57 (1995), 127-164.

⁸ Vjera KATALINIĆ: *Sorkočevići: dubrovački plemići i glazbenici (The Sorkočevićes: Aristocratic Musicians from Dubrovnik)*, Zagreb: Muzički informativni centar, 2014, 133.

What RISM offers

RISM approaches its goal of documenting all musical sources worldwide by dividing the work into three main series. Special volumes have also been published.

- Series A: A/I indexes individually issued printed music before 1800. A/II is an index of manuscripts.
- Series B: Bibliographies that focus on specific topics such as printed anthologies, polyphonic music, music theory, Middle Eastern sources, and lute tablatures.
- Series C: The *Directory of Music Research Libraries*, which contains contact information and descriptions of music holdings for countries around the world.

Currently, the RISM online catalogue is the focus of RISM's work. It is here in this online environment that the boundaries between the series admittedly begin to blur. The online catalogue originally comprised the data of series A/II (music manuscripts). In 2015, all of the data from A/I were incorporated into the catalogue, along with data covering anthologies printed between 1500 and 1550 that had originated in volume B/I, *Recueils imprimés, XVIe-XVIIe siècles*.⁹ The Central Office is currently converting the remaining data from B/I (to the year 1700) with the aim of importing them into the online catalogue in 2018. It is hoped to likewise import data from B/II (which continues coverage through the eighteenth century) in the future.¹⁰ Comments collected in a survey of RISM users carried out from October 2014 to February 2015 indicate that including data from the books is a welcome expansion of the catalogue.¹¹

The online catalogue adds on average around 2,800 new records each month. Records for over 977,800 manuscripts and 112,000 printed editions can be searched through an interface that offers a simple search and an advanced search. In the advanced search, 23 indexed fields are available, including fields for the catalogue of works number, genre, holding institution, key, language, liturgical festival, music incipit, names, provenance, title, scoring, shelfmark, source type, watermarks, year, and for printed editions, publisher and plate number. For users of the online catalogue, a field of particular importance is the incipit search, which allows users to search and compare the opening notes of a piece. This is invaluable for tracking the dissemination of a work or identifying an anonymous source.

⁹ François LESURE: *Recueils imprimés, XVIe-XVIIe siècles*, Munich: Henle, 1960.

¹⁰ François LESURE: *Recueils imprimés, XVIIIe siècle*, Munich: Henle, 1964.

¹¹ Martina FALLETTA – Alexander MARXEN – Jennifer WARD: The RISM Online User Survey: Report, p. 50, http://www.rism.info/fileadmin/content/community-content/Zentralredaktion/Umfrage/RISM_User_Survey_English_Report.pdf (accessed 1 May 2017).

In order to offer data that can be searched in such detail, the RISM Central Office provides a special program called Muscat¹² for the purpose of describing musical sources to a high professional and scholarly standard. This program was released to RISM contributors worldwide in November 2016 and is available free of charge. Muscat was developed through a collaboration between the RISM Central Office and RISM Switzerland and was based on an earlier program jointly developed by RISM Switzerland and RISM United Kingdom.¹³

Muscat has over 40 fields available for describing musical sources. Many fields are music specific: detailed instrumentation, references to catalogues of works, opus numbers, keys, genre, liturgical festival, source type (such as autograph manuscript or copy), watermarks, plate number, and music incipits (Figure 1). Standardizing the data is facilitated through authority files for names and institutions, a thesaurus for the liturgical festivals, places, subject headings, standardized titles, and texts, and a database of secondary literature.

The screenshot displays the Muscat web interface for a music manuscript record. At the top, a navigation bar includes 'Administration', 'Language', 'Comments', 'Folders', 'Faceted search', 'Source' (highlighted), 'Authorities', 'Guidelines', 'Jennifer Ward', and 'Logout'. Below the navigation bar, the header reads 'ADMIN / SOURCES / Music manuscript [201004090]'. The main content area is divided into two columns. The left column, titled 'Summary', contains the following fields: NAME (Horsel Fanny (1805-1847)), DESIGNATED TITLE (Der Jahr), NUMBERING (Körper), SCORING SUMMARY (pf), KEY OR MODE (b), TITLE ON SOURCE ([capitula lib. 1.] Der September | [right side] Fanny Mensel), ADDITIONAL TITLE (Der September), RULE TYPE (RISM), and WORK NO. (201004090). The right column, titled 'Actions', contains buttons for 'Create', 'Return to the list', 'Edit', 'Delete', and 'Duplicate'. Below the 'Summary' section is the 'Library information' section, which includes the LIBRARY SIGLUM (D-LEM PM 106). The 'Content' section follows, with fields for WORK NUMBER (111), TITLE OF MOVEMENT, TEMPO (Andante con moto), VOICE/INSTRUMENT (pf), and KEY OR MODE (b). A 'PAB Code' link is also present. At the bottom of the 'Content' section is a music incipit in bass clef, 6/8 time, showing a sequence of notes with fingerings (6, 3, 6, 3, 6, 3, 6, 3).

Figure 1: An extract from a complete record in Muscat with music-specific fields, including composer, title, scoring, key, and music incipits.

¹² More information about Muscat, including tutorials and access to a version of the program that anyone can try out, can be found at <http://www.rism.info/en/community/muscat.html> (accessed 1 May 2017).

¹³ Cédric GÜGGI – Laurent PUGIN: Zehn Jahre Entwicklungs- und Katalogisierungserfahrung mit Muscat, *Forum Musikbibliothek*, 38 (2017) 1, 20-21.

Muscat runs from an internet browser and is platform independent. No separate installation is required. Muscat users can take advantage of the multilingual interface, version control, commenting system, folders, built-in connection to the Virtual International Authority File (VIAF), integrated online catalogue search, templates specific to source types, and overall intuitive look and feel. Muscat cataloguers are offered autocomplete prompts in fields linked to authority files and controlled vocabulary, and navigation within a record is enabled through a menu on the right-hand side (Figure 2).

The screenshot shows a web interface for 'People and institutions'. The main form is titled 'COMPOSER/AUTHOR (100)' and contains several sections with autocomplete suggestions:

- COMPOSER/AUTHOR (100)**: Name: Hensel; Life dates: Hensel, Family; Attribution: Hensel, Fanny - 1805-1847.
- ADDITIONAL PERSONAL NAME**: Name: Hensel, Friederike Sophie - 1738-1789; Life dates: Hensel, Gottlob - 1765c-1826c; Attribution: Hensel, Johann Daniel - 1757-1839; Attribution: Hensel, Julie - 1836-1901; Attribution: Hensel, Luise - 1798-1876; Function: Hensel, Sebastian - 1830-1898.
- ADDITIONAL INSTITUTION (710)**: Institution: Hensel, W.; Attribution: Hensel, Walther - 1887-1956; Attribution: barmming ruocm; Function: Former owner.

The bottom of the form shows the institution 'Musikbibliothek Peters'. On the right, a sidebar titled 'Sections and actions' lists various options: Library information and relations, People and institutions, Title and content description, Material description, Facets, References and notes, Administration, Show all sections, Show preview, Save and continue editing, Save and close, Cancel, Show modification history, Attach a new image, and Basic functions.

Figure 2: An extract from the cataloguer's view of Muscat where names are entered.

Data are structured using MARC21, which is a common format used in libraries worldwide, so Muscat has an internationally widespread and standardized data model at its core. Information entered with Muscat is published in the RISM online catalogue through monthly updates. For RISM contributors, Muscat represents a modern and innovative way of catalogueing sources and is a vast improvement to RISM's predecessor programs.

RISM in the digital environment

For many decades, documentation of musical sources contributed by RISM project partners was available solely through book publications, CD-ROMs, or subscription services. In recent years, this model has changed. The availability of the catalogue as a free, online resource since 2010 and the introduction of Muscat in late 2016 have opened up new opportunities for RISM to collaborate with other partners, projects, and individuals.

Data contributed to the RISM project can be retrieved in various forms. This ensures that the data are not only visible and used but also usable and reusable in

other, external projects. This enables RISM contributors, librarians,¹⁴ and archivists – but also musicologists and researchers from the digital humanities and music information retrieval technology – to use RISM data for their own catalogues, digital archives, and other projects.

After the release of the online catalogue in 2010, the next major step in making the RISM data available in a practical, reusable form was the release of the data as open data in 2013 and linked open data in 2014. Linked open data allows information in the RISM records to be easily connected to other online environments using common vocabulary and syntax. The open data services are available on a page directly from the RISM online catalogue.¹⁵ Open data can be used by libraries that wish to import their records into local catalogues, as metadata in digital projects, or in scholarly projects that want to use a certain pool of sources as a basis for research.

The data are licensed under a Creative Commons Attribution 3.0 Unported license (CC BY 3.0) and the data can be reused nearly without restriction. Such a license allows users to download and redistribute RISM data, but also adapt and change them for other purposes (including commercial).

Each entry in the online catalogue can be viewed and downloaded in MARCXML and RDF/XML format. A SPARQL endpoint and an SRU interface (search and retrieve via URL) are available to query the data when larger batches of data are desired. The full open data dataset includes the records for the 1,088,000, musical sources, 180,000 authority files (personal names and corporate bodies), and 31,700 bibliographic records for secondary literature. Common ontologies are employed for authority records.¹⁶ All this is to demonstrate that the RISM data are available in a variety of formats, through multiple access points, and are interoperable with common vocabularies. Moreover, the data are available in a way that encourages them to be reused. In 2016, RISM's open data files were downloaded over 500 times.

RISM would like to propose the opportunity to work together with musicologists to create and manage data about musical sources. The records for musical sources freely available in the RISM online catalogue combine with Muscat to create a powerful tool for musicological research. Muscat is RISM's own program and this gives the developers full control over a cataloguing program that meets the needs of its contributors. RISM would like to see Muscat become the standard program in musicological source-based research. Musicologists can use Muscat for a catalogue of works, for critical editions, for source studies, or for the study of

¹⁴ Jennifer A. WARD: The use and reuse of RISM data in libraries, *Journal of Electronic Resources Librarianship*, 28 (2016) 2, 129-133.

¹⁵ See RISM's open data page at <https://opac.rism.info/index.php?id=8&L=1> (accessed 1 May 2017).

¹⁶ Klaus KEIL – Jennifer A. WARD: Applications of RISM Data in Digital Libraries and Digital Musicology, *International Journal on Digital Libraries* (forthcoming).

music in a particular region or institution. The availability of Muscat reduces the need to create a database from scratch because Muscat has music-specific fields not found in any other widely available program.

RISM's data can be used as a starting point for editing and organizing data to suit a project or entirely new records can be created for items not in RISM. Existing RISM records can be enhanced with new research or data from external projects can be combined with the larger Muscat database and thereby integrated into the international RISM online catalogue. Furthermore, as an open source program, Muscat can be shaped to other specifications besides RISM's. Muscat can be adjusted to fit the needs of any given project and fields can be added or removed.

The wide availability of Muscat and RISM's catalogue online have opened up new possibilities for RISM to be integrated into the work of musicologists. RISM is looking for opportunities to collaborate with musicologists whose research involves musical sources. RISM would welcome the opportunity to be in touch with anyone who is interested in using RISM's data or the Muscat program.

Applications of RISM in the digital environment

RISM has taken advantage of the digital environment and the availability of linked data on the web to enrich the experience of catalogue users and bring them one step closer to the sources themselves.

In authority files for personal names (visible on the full view of a record), RISM links to images stored in Wikimedia Commons when available. This link is enabled through the authority file control numbers of the Deutsche Nationalbibliothek (DNB, the German National Library) and in some cases the Virtual International Authority File (VIAF) that are found in each of RISM's authority files (Figure 3).

The image shows a screenshot of the RISM authority record for Fanny Hensel. The record is titled "Hensel, Fanny" and includes a portrait of her. The record is structured as follows:

- Name:** Hensel, Fanny (1805-1847)
- Nationality:** XX-DE
- Place:** Hamburg, Berlin
- Profession:** Composer, Performer, Pianist
- Spouse of:** Hensel, Wilhelm
- Descendant of:** Mendelssohn Bartholdy, Lea
- Ancestor of:** Hensel, Sebastian
- Years active:** 14.11.1805-14.05.1847
- Bibliographic citation:** Rismann,1|1|3
- MGK(P)P:**
- MGK suppl.**

The record also includes sections for "Work information" (e.g., "Das Jahr (Excerpts) in Op. 10, No. 1"), "Source description" (e.g., "Title on source: [Baptism rite, 1772]"), and "Incipits" (e.g., "1. 1. 1. pf, 8/8 Andante con moto; 1/2").

Figure 3: Authority record for Fanny Hensel with picture from Wikimedia Commons.

The RISM catalogue provides access to digital surrogates of objects described by linking directly to the holding institution's online repository when available. Users of the catalogue can use the facets to limit their search to only records containing links to digitized music, and links to the digital surrogates are displayed prominently in the respective records.

Some RISM working groups enable closer inspection of musical sources by making handwriting samples available for some composers and copyists. Links to digitized handwriting samples are included in the individual's authority file. Other working groups systematically carry out paper studies and attach images of watermarks to the records.

By providing links to digital surrogates of music, handwriting, and watermarks, RISM aims to improve the understanding of sources and provide information that goes beyond only a catalogue description. So far, the online catalogue offers 43,000 links to digital objects.

Outside of its own catalogue, RISM's data have been successfully incorporated in a variety of external digital initiatives. Several may be mentioned here briefly.

RISM records in local catalogues

These institutions have harvested the RISM records that describe their respective holdings for use in their local catalogues:

- Bibliotheksservice-Zentrum (Germany)
- Koninklijk Conservatorium Brussel (Belgium)
- Moravian Music Foundation (United States)
- Sächsische Landesbibliothek – Staats- und Universitätsbibliothek (Germany)
- Staatsbibliothek zu Berlin (Germany)

Metadata in digital projects

- The Juilliard School: Manuscripts held by the Juilliard School in New York were catalogued by the RISM United States working group the metadata later served as the basis for the Juilliard Manuscript Collection digital library.¹⁷
- The Music Library Digital Scores Collection, University of Washington: RISM records describing ca. 300 of the university's manuscript holdings of vocal music from the seventeenth and eighteenth centuries were used in

¹⁷See the Juilliard Manuscript Collection, <http://juilliardmanuscriptcollection.org> (accessed 1 May 2017).

the university's CONTENTdm database. Links to the digitized manuscripts were added to RISM records after the digital library was created.¹⁸

Linking through RISM authority files

- Entries in the Neue Deutsche Biographie (New German Biography) and the Bayerisches Musiker-Lexikon Online (Bavarian Online Dictionary of Musicians) link to RISM through authority file numbers in order to enhance biographical entries by providing direct access to musical sources about a person in addition to biographical sources.¹⁹

RISM data in larger data pool

- ViFaMusik (Virtuelle Fachbibliothek der Musikwissenschaft/Virtual Library of Musicology): RISM data are integrated into this tool's metasearch of musicological databases.²⁰
- The Hochschule für Musik und Theater »Felix Mendelssohn Bartholdy« Leipzig: RISM records that include a URL to digitized objects are integrated into a search that focuses on digitized resources worldwide.²¹

RISM data in the digital humanities

- Incipit analyses: Experiments on RISM's music incipits carried out by Rizo and Iñesta²² as well as Shanahan and Bell²³ show applications of RISM data in the Music Information Retrieval (MIR) community.

¹⁸ Anne GRAHAM – Deborah PIERCE: RISM Data as Metadata for Digital Collections, http://www.rism.info/fileadmin/content/community-content/events/RISM_Conference_2012/Graham_Pierce.pdf (accessed 1 May 2017).

¹⁹ See the Neue Deutsche Biographie, <http://www.ndb.badw-muenchen.de/> (accessed 1 May 2017) and the Bayerisches Musiker-Lexikon Online, <http://www.bml.o.lmu.de/> (accessed 1 May 2017).

²⁰ See ViFaMusik, <https://www.vifamusik.de/> (accessed 1 May 2017).

²¹ Anke HOFMANN and Barbara WIERMANN: Customizing Music Discovery Services: Experiences at the Hochschule für Musik und Theater, Leipzig, *Music Reference Services Quarterly* 17 (2014) 2, 61-75, doi: 10.1080/10588167.2014.904699.

²² David RIZO VALERO – José M. IÑESTA: A Grammar for Plaine and Easie Code, in: Perry Roland – Johannes Kepper (eds.): *Music Encoding Conference Proceedings 2013 and 2014*, Charlottesville, Virginia and Detmold, Germany: Music Encoding Initiative, 2015, 54-64, <http://nbn-resolving.de/urn:nbn:de:bvb:12-babs2-0000007812> (accessed 1 May 2017).

²³ Daniel SHANAHAN – Eamonn BELL: Re-Examining National Influences and Stylistic Shifts with the RISM Dataset, in: Roland and Kepper (eds.), *Music Encoding Conference Proceedings 2013 and 2014*, Charlottesville, Virginia and Detmold, Germany: Music Encoding Initiative, 2015, 159-161, <http://nbn-resolving.de/urn:nbn:de:bvb:12-babs2-0000007812> (accessed 1 May 2017).

- Detmolder Hoftheater (Detmold Court Theatre): RISM data form the basis for further investigation of material held by the Lippische Landesbibliothek.²⁴ After being converted to the MEI schema, records are enhanced in a way that goes into more detail than is typical for RISM catalogueing, including incorporating details from archival business documents.
- Big Data: The Big Data History of Music project (British Library and Royal Holloway, University of London) showed how principles of big data, more at home in the sciences, can be applied to musicology.²⁵ RISM data flowed into a pool of other large bibliographical datasets to explore the historical development of European musical culture.

Conclusion

Musicology as a historical discipline is dependent upon knowledge of the sources. As musicologists, we rely on the written transmission of music to inform our interpretation of (musical) history. In order to understand and evaluate this history, we need access to the objects that helped write it. The RISM online catalogue brings musicologists closer to primary source materials and scholars in the digital humanities can also work with RISM to facilitate and disseminate their own source-based research. RISM hopes that Muscat can be a useful tool for scholarship thanks to its user-friendly navigation and various digital possibilities. Creating digital descriptions of music can begin with RISM and go beyond it: data can be created, used, and reused to document musical heritage, build databases, and closely collaborate with projects that use RISM data. RISM is open to a continuing dialogue about the development of digital cooperative initiatives between the project and people working in digital environments.

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²⁴ Irmlind CAPELLE – Kristina RICHTS: Die Welt des Detmolder Hoftheaters – erschlossen mit MEI und TEI, *Bibliotheksdiens*t 50 (2016) 2, 199-209, doi: 10.1515/bd-2016-0022.

²⁵ Stephen ROSE – Sandra TUPPEN – Loukia DROSOPOULOU: Writing a Big Data History of Music, *Early Music* 43 (2015), 4, 649-660, doi: 10.1093/em/cav071.

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*Sažetak*POVRATAK IZVORU, VIRTUALNO: RISM KAO ALAT
U DIGITALNOM OKRUŽENJU

Kad je 2010. Međunarodni repertoar glazbenih izvora (*Répertoire International des Sources Musicales* – RISM) objavio svoj besplatan, *online* dostupan katalog, podaci o više od 700.000 glazbenih izvora postali su dostupni istraživačima diljem svijeta bez naknade. Danas katalog sadrži više od 1,067.000 zapisa o glazbenim rukopisima, tiskovinama, libretima i traktatima te njegova popularnost raste iz mjeseca u mjesec.

Od objavljivanja *online* kataloga, RISM je pokrenuo nekoliko inicijativa kako bi se muzikologe približilo primarnim materijalnim izvorima koje istražuju, što je olakšano preko digitalizacijskih projekata koje provode knjižnice i istraživačke ustanove. *Online* katalog pokušava proširiti bazu podataka izvan okvira suštog zabilježavanja lokaliteta na kojima se glazbeni izvori nalaze, iako to zasigurno i dalje ostaje jedan od primarnih ciljeva. RISM nudi poveznice do digitalizirane glazbe izravno preko institucija koje ih posjeduju (tamo gdje je to dostupno), uključuje uzorke rukopisa skladatelja i prepisivača te prikazuje slike vodenih žigova.

Godine 2014. cjelokupni korpus podataka RISM-a objavljen je kao povezani otvoreni podaci (*linked open data*). Zahvaljujući tome, RISM je u mogućnosti ostvariti suradnju s drugim projektima iz područja digitalne humanistike i osigurati podatke kao osnovu za istraživačke projekte. U isto vrijeme, vanjski projekti teže povratno poslati svoje podatke – često s ispravicima i poboljšanjima – kako bi obogatili RISM-ov katalog.

Objavljivanje Muscat-a, RISM-ovog specijaliziranog *open-source* programa za katalogiziranje glazbenih izvora, RISM-ovim je suradnicima olakšalo katalogiziranje glazbenih izvora. Ovaj novi program također daje priliku muzikolozima da *Muscat* koriste kao alat u svojim vlastitim projektima dokumentiranja.

Cilj je ovoga članka opisati na koji način RISM-ov *online* katalog muzikologe približava primarnim glazbenim izvorima te, također, kako muzikolozi mogu surađivati sa RISM-om, a da bi olakšali i promicali svoje vlastito istraživanje glazbenih izvora.