The Online Catalogue Raisonné: Challenges of an Emerging Format

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Catalogue raisonnés are one of the most important tools of scholarly art historical research, providing a definitive record of an artist’s oeuvre along with the historical context surrounding its creation (Rogers, 2015, p. 3-4). While catalogue raisonnés have been ubiquitous since the late 18th century, they continue to evolve as a publication medium. In response to the increasing use of online resources for scholarly research, more organizations are choosing to publish catalogue raisonnés in an online format. As the online catalogue raisonné evolves, there is increasing dialogue in the art historical community about how best to treat this transitional medium. While best practices for developing online catalogue raisonnés are still being developed, examination of how museums, artist foundations, and other organizations have dealt with the hurdles of online publication over the past decade can provide guidelines for those initiating new online catalogue raisonné projects.

Online catalogue raisonnés first started to become widely adopted in the mid-2000s (Gabrielli, 2015, p. 42). The National Gallery of Art’s 2001 catalogue raisonné of editions produced by the Los Angeles printing workshop Gemini G.E.L. was likely the first major catalogue raisonné published in an online format (Atwater, 2012, p. 187-188). The Gemini G.E.L. catalogue raisonné began life as text in a Word document, and images for the project were initially stored on CD-ROM. As the project evolved, data for the project was transferred to a relational database, and images were moved to a local server. The NGA’s Gemini G.E.L. site, still online and largely unchanged since its publication, eventually became the model for many other major catalogue raisonnés to follow. While uncertainty about the permanence of the internet initially led to some hesitation in adopting this new format, the increasing use of online databases like JSTOR, the growth of digitization projects within the GLAM sector, and grant
initiatives like the Getty’s OSCI initiative have all contributed to the increasing embrace of the online catalogue raisonné format.

The number of catalogue raisonné projects in general has grown exponentially in recent years (Rogers, 2015, p. 3-4). In particular, there has been a growth in catalogue raisonné projects focused on modern and contemporary artists from the 1950s onwards (Gabrielli, 2015, p. 42). As many important mid to late 20th century are aging and dying, the need to preserve the legacies of these artists has become increasing evident. Living artists are increasingly seeking to cement their artistic legacy by initiating catalogue raisonné projects during their lifetimes, or by establishing artist-endowed foundations to complete this work after their deaths (Rogers, 2015, p. 4). Additionally, the growing trend in libraries and archives to digitize and provide materials online has contributed to an increase in provenance research, as scholars are now able to access records and archival materials that previously required a visit to an institutional reading room to view. Finally, an increase in the discovery of new works and the creation of forged artwork has contributed to the need for catalogue raisonnés as a source of authentication (Gabrielli, 2015, p. 42).

There are many advantages to publishing a catalogue raisonné online. Online catalogue raisonnés offer the flexibility to present media in a variety of formats, making them ideal for artists who work in three-dimensional mediums or in non-traditional formats like performance, video, and installation (Rogers, 2015, p. 5). An online format allows for the inclusion of features previously available only to curators or conservators, such as three dimensional views of sculptural objects and archival materials that can help contextualize an artist’s work (Helmreich, 2015, p. 56). In addition, printed catalogue raisonnés generally carry high production costs, due to which they tend to be printed in limited editions and sold at high prices (Gabrielli, 2015, p.
42). Since the aim of a catalogue raisonné is to preserve and promote the legacy of an artist, limiting access to researchers and institutions than can afford to invest $100 or more on a single book seems counterintuitive to this mission. Additionally, print catalogue raisonnés can easily become obsolete as soon as the provenance or exhibition history of a work changes or if a new work by an artist is discovered.

At the same time, online catalogue raisonnés do present some challenges that are unique to the digital format. An organization must decide on a user interface that is both user-friendly and amenable to serious scholarly research. A database and publication platform must be chosen that can meet the administrative needs and budget of an organization. The online catalogue raisonné must insure the academic authority and accuracy of its content. Finally, an online catalogue raisonné project must plan for the continued updating, maintenance, and preservation of the catalogue website.

When initiating an online catalogue raisonné project, user experience and accessibility are a primary concern in determining the project’s end goals. In assessing the features to include in an online catalogue raisonné, an organization must balance the needs of users from the general public against those of academic researchers (Gabrielli, 2015, p. 42). An online catalogue raisonné should allow for effective keyword searches in order to facilitate access and discovery. At the same time, researchers in the current digital age have come to expect a highly-interactive experience, one which allows for detailed exploration of individual works as well as the ability to discover connections within the works in an artist’s oeuvre as a whole (Helmreich, 2015, p. 57). Creators of an online catalogue raisonné may consider including features such as customizable display views, video and audio content, archival materials, and links to external resources (Gabrielli, 2015, p. 42-43).
The Getty Foundation’s OSCI (Online Scholarly Catalogue Initiative) initiative, launched in 2009, offers a good model of ways to approach user experience in designing a catalogue raisonné website (Helmreich, 2015, p. 56). OSCI is focused on exploring the process of publishing museum collection catalogues, but many of the tools and practices developed by the program can also be applied to online art publications as a whole. Eight different major museums were awarded project grants by the Getty, and each chose to work with the online catalogue format in a unique way. During the course of the OSCI project, the view of the projects’ users shifted from a strictly scholarly audience, to seeing the project as something that could serve a range of users (Helmreich, 2015, p. 58). Participating institutions structured their online catalogues in a way that would allow both for generalized browsing and deeper exploration. The Walker Art Center, for instance, aimed to present their catalogue website as “a blend of book and magazine”, presenting scholarly texts in an engaging, media-rich format incorporating the narrative-based aesthetics of a long-form journalism site. The websites created by organizations participating in the OSCI project, like the Walker’s Living Collections Catalogue, demonstrate how online catalogue publishers can design visually enticing websites with broad user appeal without compromising the quality of the scholarly content they contain.

Once an organization has settled on the basic format and content of their catalogue raisonné website, they must select a database and online publication platform for creating their site. A collection database is an essential tool for any organization seeking to create a catalogue raisonné. The organization’s current collections management database should be assessed at the beginning of the catalogue raisonné project (Gabrielli, 2015, p. 45). Oftentimes, smaller institutions like artist foundations may need to update their CMS in order to accommodate the volume of data generated by a catalogue raisonné project. Online catalogue raisonné project
frequently begin with the migration of data from an organization’s legacy database to a new
database purchased for the project, or with the incorporation of data from the database of the
artist themselves or their gallery. This process may take several weeks to accommodate ingestion
time and conversion to the organizational database’s new schema. Additionally, an organization
may need to bring together disparate types of content in addition to the object data in its
database, including digital image content, which may be stored on a server or in a digital asset
management system, and textual content such as scholarly essays and object records (Helmreich,
2015, p. 58).

There are a wide variety of commonly used database systems an organization can select
from for use in a catalogue raisonné project. Possible selection criteria include the organization’s
budgetary restrictions, whether the database will be accessed via a local network or through an
online content management system, and whether the organization has IT staff that can handle the
more technical aspects of database management (Gabrielli, 2015, p. 45). Of particular use may
be a content management system than can function both as a database and as a publication
platform. There are a number of art database platforms that integrate online publication
capabilities (Gabrielli, 2015, p. 43). These include Artbase, a Filemaker-based system popular in
galleries, Collective Access, a web-based application commonly used with archival collections,
and the eMuseums module for The Museum System (TMS). Additionally, there are a number of
emerging software systems, including Artifex Press and panOpticon, that have been developed
specifically for online catalogue raisonné creation. Artifex and panOpticon in particular are
increasingly becoming the platform of choice for many major online catalogue raisonné projects.

Artifex Press was launched with the publication of the Chuck Close Catalogue raisonné
in 2012 (New York Public Library, 2012). Artifex’s president and editor-in-chief, David Grosz,
was previously editor-in-chief at Artinfo before launching the company. Besides the Close catalogue raisonné, a number of other catalogue raisonné projects are currently being assembled using the Artifex Press software platform, including those of Agnes Martin, Sol LeWitt, Frank Stella, and Richard Tuttle (Artifex Press, 2016).

Artifex Press’ web-based software is designed to encompass digital archiving, cataloging, and publication. Artifex’s catalogue raisonné designs have an attractive, responsive interface that resembles an online magazine format, similar to the Walker’s *Living Collections Catalogue*. Artifex’s online catalogue raisonnés include a section that explains the format of each site, as well as a biographic overview of the artist’s career and practice and a checklist of their solo exhibitions (Dashkin, 2014). Artifex’s sites also incorporate audio and video content, although the later is often hosted externally on YouTube. Each object record incorporates multiple high-res views of the piece, along with its provenance, exhibition history, and bibliography. Artifex’s sites also incorporate a search interface, although this is limited to one search term at a time. Additionally, users can browse works by medium, location, chronology, and theme. These interactive features, as well as the ability for multiple users to access its’ online content management system at the same time, demonstrate Artifex’s potential for creating visually appealing and user-friendly catalogue raisonné websites.

The panOpticon platform, another popular catalogue raisonné platform, has been used for numerous published and currently-in-production online catalogue raisonné projects, including the catalogues of Paul Cézanne, Arshile Gorky, Roy Lichtenstein, and Jack Tworkov (panOpticon, 2016). PanOpticon, like Artifex, is a web-based content management system. Its cataloguing interface was created in accordance with Catalogue Raisonné Scholars Association guidelines, and incorporates the Getty’s Categories for Describing Works of Art (CDWA)
metadata standard. PanOpticon includes four main indexes; works, owners, exhibitions, and literature (which includes books, articles, and other publications featuring a particular work). PanOpticon also allows for the linking of a variety of reference materials to a particular catalogue raisonné object, including images, archival materials, reports, sketches, and scholarly texts. Besides functioning as an object database, panOpticon also supports publication on a new or existing website. PanOpticon offers a number of pricing tiers, one of which includes the migration and normalization of data from an organization’s legacy database. This optional data conversion in particular makes panOpticon an attractive choice for organizations seeking a database system to use in creating and launching an online catalogue raisonné.

_The Paintings of Paul Cézanne_ is perhaps panOpticon’s highest-profile catalogue raisonné project. The initial _Paintings of Paul Cézanne_ is limited to the artist’s oil paintings, but will eventually incorporate Cezanne’s works in other mediums as well (Feilchenfeldt, Warman, & Nash, 2014). The first attempt at creating a catalogue raisonné of Cezanne’s work was undertaken by Cezanne’s dealer, Ambroise Vollard, in 1904. This catalogue raisonné was envisioned as a set of photo albums accompanied by text annotations by Cezanne’s son, but ultimately, the project did not end up coming to fruition. The first finished print catalogue raisonné of Cezanne’s work was published in 1936 by art dealer Paul Rosenberg and art historian Lionello Venturi. Shortly after the publication of this catalogue raisonné, a researcher named John Rewald wrote his PHD thesis on Cezanne’s relationship with Emile Zola, leading to his continued study of Cezanne and, ultimately, his succeeding Venturi as the preeminent scholar on Cezanne’s work. Rewald came to disagree with many of Venturi’s dates and attributions in the first Cezanne catalogue raisonné, and ended up publishing two catalogue raisonnés of his own, one of Cezanne’s watercolors in 1983, and one of Cezanne’s paintings as a whole, _The Paintings_
of Paul Cézanne, in 1996. While lauded by scholars, The Paintings of Paul Cézanne was hindered by the fact that it only contained black and white images. Additionally, many new archival materials and scholarly texts related to have become available in the 20 years since The Paintings of Paul Cézanne was published, necessitating the creation of a new Cézanne catalogue raisonné.

The Paintings of Paul Cézanne online catalogue raisonné was launched in 2014, in part to remedy the lack of color images in John Rewald’s 1996 publication, as well as to include updated information on the provenance and exhibition history of Cézanne’s work (Morse, 2014). The online catalogue raisonné was created by Rewald’s co-authors for his 1996 catalogue raisonné, Walter Feilchenfeldt and Jayne Warman, along with gallerist David Nash of Mitchell-Innes & Nash, who also contributed funding for the project. The Cézanne online catalogue raisonné, designed by panOpticon, features high-resolution color images of all of Cezanne’s paintings. Visitors to the Cezanne catalogue raisonné site can browse through paintings by a few broad categories (landscapes, portraits, figure compositions, still lives, and bathers), or search for images based on specific keywords. The site’s search keyword and filtering options are extensive, allowing users to narrow results by decades, or to search for keywords related to the subject matter of paintings (specific animals, objects featured in still lives), or by techniques and condition elements (parallel brush strokes, added strips of canvas, paintings that have been dated or signed). Image filtering options are extensive as well; users can sort image thumbnails by catalogue number, date, title, and height and width, and they can even see the thumbnails scaled in relative size to one another (Morse, 2014). Additionally, the Cezanne catalogue raisonné features a variety of archival materials and ephemera, including contemporaneous photographs and postcards of places that Cezanne painted, and film and video of exhibitions of his work.
during his lifetime. Overall, the Cezanne online catalogue raisonné is an excellent illustration of
the online medium’s potential for offering interactive exploratory resources.

In publishing a catalogue raisonné online, establishing the authenticity of its content may
be one of the medium’s biggest challenges (Atwater, 2012, p. 188-189). Since online catalogue
raisonnés do not have publication by a major scholarly press as a means of proving their
authority, the organization publishing them must be explicit in detailing their qualifications for
providing a definitive record of an artist’s work. While a catalogue raisonné site created as some
unaffiliated individual’s passion project may be helpful for a more casual researcher, an online
catalogue raisonné is not be considered an acceptable source for academic research unless the
source of its information is a recognizable scholarly authority. Additionally, provenance
researchers from commercial galleries or auction houses run the risk of major legal and financial
consequences if they end up unintentionally providing false information on a work thanks to
inaccurate or unverified details in a catalogue raisonné source.

One emerging solution to issues of authenticity in online catalogue raisonnés may be the
integration of linked open data. Linked data holds great promise as a means not only to verify the
authority of the information in online catalogue raisonnés, but to greatly enrich their content as
well. The implementation of linked data allows for interoperability across institutions, enabling
researchers to easily access and compare content with other organizations (Mayer, 2015, p. 3).
The creators of an online catalogue raisonné can use linked data to cross-reference their
information with data from museums and academic institutions, and they can also metadata and
media content from these outside institutions into their own site. Similarly, museums that have
objects featured in an online catalogue raisonné can use metadata from that catalogue raisonné to
enhance their own documentation and curatorial scholarship on a work. Additionally, having the
content of an online catalogue raisonné represented as linked data could promote greater visibility for the project and help to make it more accessible to users across the Web.

The American Art Collaborative has codified a series of steps for organizations seeking to publish their data as linked open data (Mayer, 2015, p. 6-8). These include creating a dataset, relating that dataset to an established ontology, mapping the dataset to RDF (a machine-readable metadata model), and linking the data to external datasets. Smaller institutions with more limited budgets can supplement their metadata with linked data from larger organizations with greater budgets. Additionally, a number of authorities in the GLAM sector have created controlled vocabularies that can easily be incorporated into linked data datasets. These include the Library of Congress Subject Headings (LCSH), OCLC’s Virtual International Authority File (VIAF), and the Getty Vocabularies.

The Getty Vocabularies, including the Art and Architecture Thesaurus (AAT) and the Union List of Artist Names (ULAN), could be particularly useful in the context of an online catalogue raisonné. The AAT provides controlled terms for art-related concepts like mediums and materials that can be used to provide consistency in cataloging objects in a catalogue raisonné (J. Paul Getty Trust, 2015). ULAN provides the preferred and variants spells of the names of hundreds of thousands of artists, along with bibliographic and biographical information, which may assist in verifying information on a catalogue raisonné artist and the other artists they were friends with or influenced by. A third vocabulary, CONA (Cultural Objects Name Authority), is still being developed, and includes authority records for cultural works, including visual art as well as architecture, performing art, and archeological artifacts. In addition to using CONA as a provenance research source, creators of a catalogue raisonné could
incorporate CONA’s authority files for particular works into their catalogue raisonné object entries, providing a persistent, authoritative record of the work’s existence.

While linked data has been incorporated into a number of prominent museum collection websites and other cultural heritage projects, it has yet to be implemented in the context of online catalogue raisonnés. However, a project currently in development at the Harvard University Center for Italian Renaissance Studies at Villa I Tatti, *Florentine Renaissance Drawings: A Linked Catalogue for the Semantic Web*, may soon provide a model for incorporating linked data into online art catalogues. *Florentine Renaissance Drawings: A Linked Catalogue for the Semantic Web*, expected to launch in early 2017, is focused on converting Bernard Berenson’s seminal 1903 catalogue of Italian Renaissance drawings, *The Drawings of the Florentine Painters*, into an open-access, machine-readable format (Provo, 2016). Berenson, the founder of Villa I Tatti, was one of the most important early 20th Century scholars on Italian Renaissance art (Sorenson). *Drawings of the Florentine Painters*, first published in 1903, was a catalogue raisonné of all known Florentine Renaissance drawings at the time, along with images and scholarly texts. Two new editions of *Drawings of the Florentine Painters* were published in 1925 and 1938, and the book has remained an essential work of art historical scholarship since.

The I Tatti Florentine Renaissance Drawings project combines the three editions of *Florentine Renaissance Drawings* into one comprehensive online resource (Provo, 2016). In keeping with the American Art Collaborative’s guidelines for LOD creation, the project began with the collection of data from the three editions into a single spreadsheet. This data was then cleaned and normalized using controlled vocabularies and name authorities like the Getty AAT and ULAN, VIAF, and Geonames. Using these name authorities allowed the Florentine Drawings team to account for discrepancies and misspellings in the *Florentine Renaissance*
Drawings text, and made it easier to link the data in the Berenson online catalogue to OCLC and the Getty’s external datasets. Next, the project team created a conceptual data model for the project’s linked data using CIDOC-CRM, a conceptual reference model increasingly being adopted by art museums, and currently in use by institutions like the British Museum and the Smithsonian American Art Museum. Finally, this data was used to build a catalogue website combining linked data access with a user-friendly, media-rich interface.

Thanks to the use of linked data URIs (uniform resource identifiers), users of the Florentine Renaissance Drawings online catalogue will be able to access resources not only from Berenson's book, but also from institutions around the world (Provo, 2016). Researchers on the catalogue site can, for example, access images and other online content from museums like the Louvre and British Museum that have works featured in Florentine Renaissance Drawings in their collections, and these museums can, in turn, use Berenson’s scholarly texts to enhance their own curatorial content. Additionally, the event-based structure of the CIDOC data model used for the Florentine Renaissance Drawings project’s linked data allows for a record of the changes in the catalogue over its three editions. Researchers using the Florentine Renaissance Drawings site can see whether Berenson added or removed any artworks from the book or changed the attribution of a particular piece over the course of subsequent editions. The ability to record changes and updates across different editions of a catalogue raisonné, to easily enrich catalogue content with materials from other cultural institutions, and the ability to link object records to name authority records, makes linked data incorporation an exciting new frontier in online catalogue raisonné publication.

After an online catalogue raisonné is launched, an organization must take into account its future maintenance and preservation (Gabrielli, 2015, p. 44). Organizations publishing catalogue
raisonnés online must be prepared to plan and provide resources both to continuously update the catalogue raisonné website with new information, and to update its design and infrastructure to keep pace with new technology and trends in access (Rogers, 2015, p. 5). Additionally, in order to maintain credibility as a reference, online catalogue raisonnés should indicate any changes and updates to the website’s content in a clear and consistent manner.

Web archiving is one way to document the changes in an online catalogue raisonné over time, as well as to preserve the site for research purposes should it cease to be updated or hosted online. NYARC, the New York Art Resources Consortium, was awarded a two-year Mellon Foundation grant in 2013 to focus on the preservation of a number of types of online art research resources, including online catalogue raisonnés (Duncan, 2015, p. 50-52). NYARC, started in 2006, includes the libraries of the Frick, the Brooklyn Museum, and the MoMA. NYARC first began its exploration of web archiving with a 2010 pilot study at the Frick Art Reference Library. This study led to a one-year grant from the Andrew Mellon Foundation in 2012 focused on evaluating the types of online resources that would be most beneficial to archive for art historical research use. Online catalogue raisonnés were identified as one of these, along with auction websites, artists’ websites, gallery websites, websites related to art restitution, and NYARC’s internal websites. After these resources were identified, NYARC received an additional two year grant from the Mellon Foundation to begin implementing its web archiving initiative in full.

NYARC’s first online catalogue raisonné archiving project, begun in 2014, was focused on capturing the website of the *Isamu Noguchi Catalogue Raisonné* (Duncan, 2015, p. 53-54). NYARC ended up encountering some difficulty in capturing the full extent of the Noguchi website’s subpages during its initial attempts at archiving the site. Ultimately, NYARC settled on
capturing the “print layout” of the Noguchi site as a PDF, making this PDF available via its Archive-It collection. NYARC also created a record for the online Noguchi catalogue raisonné in its internal OPAC, Arcade.

Since its first capture of the *Isamu Noguchi Catalogue Raisonné*, NYARC has continued its work archiving online catalogue raisonnés (Duncan, 2015, p. 54-55). NYARC has captured a number of other online catalogue raisonnés, including the NGA’s seminal Gemini G.E.L. catalogue and those of artists George Bellows and William T. Trego, and plans to work with the Estate of Jack Tworkov and with Artifex Press on future archiving projects. Thanks to their work with the Noguchi Foundation, NYARC were able to begin to codify best practices for making an online catalogue raisonné preservable. NYARC, referencing the Columbia University Libraries’ *Guidelines for Preservable Websites*, found that choosing to create sites based in HTML/XHTML versus proprietary formats like Flash and JavaScript allows for more effective web crawling during later archiving. Organizations creating catalogue raisonné websites can also assist in making their sites easier to preserve later by creating a sitemap, or by creating a text-only version of their website if their main site is flash-based.

Publishing a catalogue raisonné online brings challenges unique to the digital medium. As online catalogue raisonnés become an ubiquitous format, however, organizations have been discovering best practices and digital tools to guide the online publication process. The Getty’s OSCI project has been exploring ways of making art catalogue websites visually appealing and accessible to a broad user base while remaining valuable resources for scholarly research. Companies like Artifex Press and panOpticon have developed software solutions specifically tailored to the organizational and publishing needs of catalogue raisonné projects. Linked open data is emerging as a means of ensuring the veracity and authority of online catalogue raisonnés.
while allowing catalogue raisonné publishers to enrich their resources with content from institutions across the Web. And, as the online catalogue raisonné matures as a medium, organizations like NYARC are ensuring that these often mutable resources are preserved and documented for future researchers. While the challenge of creating an online catalogue raisonné while the format is still evolving can seem overwhelming to some, cultural organizations can look to the successes of their peers to find inspiration and guidance in this new frontier of publishing. As online catalogue raisonné publication progresses, the unprecedented degree of accessibility it provides researches and its ability to promote exploration and discovery will cement catalogue raisonnés as one of art researchers’ most valuable scholarly resources.
References


