



il Cannone

International Symposium

Niccolò Paganini's "Cannone"
and the Conservation
of the Violin

Genoa,
Palazzo Tursi
24 October 2025

Con la collaborazione di:



24 October 2025
Palazzo Tursi, Genoa
Program Overview

h 9.00

Participants check-in and press accreditation

Accreditamento

h 9.30

Institutional greetings

Saluti istituzionali

*Silvia Salis, Sindaca, Giacomo Montanari, Assessore alla cultura
Giovanni Panebianco, Presidente "Premio Paganini"*

h 9.45

Symposium explanation: objectives and thematic overview

Presentazione del simposio: obiettivi e quadro tematico

L. Appolonia, F. E. Capasso

SESSION I

The "Cannone" of Paganini: conservation practices and perspectives

Il "Cannone" di Paganini: pratiche di conservazione e prospettive future

Chairman: G. Rossi Rognoni

h 10.10

Introduction

Introduzione

R. Besta

h 10.30

The "Cannone" through time: a historical overview

Le vicende conservative attraverso i documenti, i protagonisti, le immagini

A. Giordano

h 11.00

Protecting the “Cannone”

Proteggere il “Cannone”

B.A. Carlson

h 11.30

3D synchrotron imaging of Paganini’s violin “Cannone” at the European Synchrotron Radiation Facility

Tomografia 3D con luce di sincrotrone sul violino “Cannone” di Paganini presso l'European Synchrotron Radiation Facility

P. Tafforeau, L. Paolasini, B. Carlson, N. Sodini, A. Giordano, A. Mirone, Y. Watier, C. Muzelle, C. Jarnias, K. Madi, L. Courtois and F. Sette

h 12.00

New organological insights from synchrotron imaging of the “Cannone”: toward a framework for future research

Nuovi aspetti organologici dall' imaging con luce di sincrotrone del “Cannone”: verso un quadro di riferimento per la ricerca futura

L. Paolasini, P. Tafforeau, B. Carlson, N. Sodini, A. Giordano, A. Mirone, Y. Watier, C. Muzelle, C. Jarnias, K. Madi, L. Courtois and F. Sette

h 12.30

Q&A Session

h 13.00

Break

LECTURE

h 14.30

The importance of historical violins in culture: symbolic and heritage values

L'importanza dei violini storici nella cultura: valori simbolici e patrimoniali

J.-P. Echard, M. Thoury

SESSION II

Managing collections: international best practices and strategies

La gestione delle collezioni: strategie e prassi ottimali a livello internazionale

Chairman: E. Marconi

h 15.05

From preservation to performance: strategies for the use and conservation of original string instruments at the Schola Cantorum Basiliensis

Dalla conservazione all'esecuzione: strategie per l'uso e la conservazione degli strumenti ad arco originali della Schola Cantorum Basiliensis

K. M. Menzel

h 15.25

From instruments to be played to instruments to be preserved. The transition of the Berlin collection at the Royal Academy of Music to the Museum of Musical Instruments

Da strumenti da suonare a strumenti da conservare. Il passaggio della collezione berlinese della Royal Academy of Music al Museo degli Strumenti Musicali

B. Brilmayer

h 15.45

Q&A Session

h 16.00

Break

h 16.20

When music leads to loss: arbitrating alteration, preventing deterioration

Quando la musica può danneggiare: valutare l'alterazione, prevenire il deterioramento

B. Soulier

h 16.40

The musical fruition of musealised violins: examples from the Museo del Violino collections

La fruizione musicale dei violini musealizzati: esempi dalle collezioni del Museo del Violino

R. Angeloni

h 17.00

On conservation of historical stringed instruments in museums

Sulla conservazione degli strumenti a corda nei musei

K. A. Tatar

h 17.20

Sound and silence: on the nature of musical instruments in museums

Suono e silenzio: la natura degli strumenti musicali nei musei

G. Rossi Rognoni

h 17.40

Open&interactive round table: how science helps redefining violin conservation / Breaking stereotypes on violin conservation

Tavola rotonda aperta e interattiva: Come la scienza aiuta a ridefinire la conservazione del violino / Rompere gli stereotipi sulla conservazione del violino

*Chairman: L. Appolonia, J.P. Echard, E. Marconi, N. Bruzzo,
M.o Guido, V. Villa*

h 18.00

Conclusions

Conclusioni

G. Panebianco

h 18.30

Conference concert curated by Dimore del Quartetto. The Kobalt Trio performs music by Mendelssohn

Concerto a cura delle Dimore del Quartetto. Il Trio Kobalt suona musiche di Mendelssohn.

LE VICENDE CONSERVATIVE ATTRAVERSO I DOCUMENTI, I PROTAGONISTI, LE IMMAGINI

Alberto Giordano

Abstract

La volontà di Niccolò Paganini di lasciare il suo “Cannone” violino alla città di Genova venne disposta nel lascito testamentario redatto nel 1837. Fu tuttavia solo nel 1851, a undici anni dalla morte, che il violino venne consegnato alle autorità cittadine: il figlio Achille, pur sentendo il dovere di compiere la volontà del padre, ebbe un atteggiamento riluttante, e fu solo grazie alla tenacia della pubblica amministrazione e alla garanzia di un’adeguata condizione conservativa che il “Cannone” venne accasato a Palazzo Tursi. Da allora il violino, divenuto la più importante memoria civica cittadina, è rimasto quale privilegiato prigioniero all’interno di una campana di vetro prima, di una tecnologica vetrina poi. Trascorsi ormai più di centoventi anni dalla consegna, è possibile tracciare un bilancio della storia conservativa del Cannone attraverso i documenti, i protagonisti, le immagini, che ci testimoniano con precisione fortune e sfortune di questo grande capolavoro della liuteria italiana. Queste vicende, per tutti noi che oggi abbiamo la responsabilità di gestire il violino e di vigilarne la salute, costituiscono una guida preziosa per preservarne al meglio l’integrità, la funzionalità e l’immagine.

Short notes or bibliography:

Alberto Giordano si diploma alla Scuola Internazionale di liuteria di Cremona nel 1984; collabora dal 1994 alla conservazione del violino di Giuseppe Guarneri “del Gesù” del 1743 “Il Cannone”. Numerose sono le conferenze nazionali e internazionali, le pubblicazioni, i saggi, gli articoli; collabora con la rivista londinese ‘The Strad’, e con l’italiana ‘Archi Magazine’; per il Museo del Violino di Cremona ha tenuto diverse conferenze e ha curato nel 2014 la mostra “Liutai italiani del Novecento: la scuola genovese”. Nel 2015 ha conseguito con lode e dignità di stampa la laurea magistrale in Storia dell’Arte e Valorizzazione del Patrimonio Culturale; nel 2018 è stato giudice al XV Concorso Internazionale Triennale di Cremona; nel 2024 al 5th China International Violin and Bow Making Competition. Vive e lavora a Genova, dedicandosi oggi principalmente alla costruzione, alla ricerca storica e alla divulgazione del patrimonio liutario italiano.

PROTECTING THE “CANNONE”

Bruce Anders Carlson

Abstract

Il “Cannone” di Niccolò Paganini è considerato in assoluto, nella storia della liuteria, il più importante violino opera di Bartolomeo Giuseppe Guarneri, detto ‘del Gesù’. Il fatto poi di essere collegato alla figura di Niccolò Paganini, il violinista che più influenzò lo sviluppo della tecnica di esecuzione musicale violinistica, lo rende un oggetto unico e insostituibile. Per tali motivi abbiamo il dovere di evitarne l'utilizzo frequente per meglio tutelare la sua incolumità. Un'uscita dalla teca, per un eventuale concerto o manifestazione, deve essere considerata un evento eccezionale e non la norma. ‘Il Cannone’ è un cimelio ‘unicum’, sia per l'opera liutaria importantissima in sé stessa che per la sua gloriosa storia musicale al fianco di Niccolò Paganini.

Il “Cannone” di Paganini è stato suonato molto nel passato, a volte eccessivamente, a causa di una politica essenzialmente condizionata alle forti pressioni dei musicisti. Il violino, ancora prima che diventassi liutaio curatore, mostrava chiari segni di ‘usura post Paganini’ e non solo l'impronta lasciata dal grande violinista. Sono visibili i segni della mentoniera e della spalliera, accessori recenti, che non esistevano ai tempi di Paganini.

L'esame del “Cannone” con la luce Sincrotrone a Grenoble ha mostrato, per la prima volta in modo inequivocabile, i potenziali punti deboli di questo splendido violino: pericoli in agguato che, peggiorando a causa di un impiego frequente, potrebbero compromettere il futuro utilizzo dello strumento.

Keywords: violin, conservation, Paganini, Guarneri

Short notes or bibliography:

Bruce Anders Carlson, violinmaker and restorer, Carlson & Neumann S.n.c., Cremona, Italy

Giunto in Italia nel 1972, Bruce Carlson inizia gli studi alla Scuola Internazionale di Liuteria di Cremona e dopo una pausa di tre anni a Los Angeles con Hans Weisshaar (uno dei più noti restauratori di strumenti ad arco negli Stati Uniti) si diploma nel 1978. Liutaio restauratore a Cremona dal 1979 e dal 1980 opera nel Museo Stradivariano di Cremona sotto la guida del Prof. Andrea Mosconi, allora conservatore della collezione di strumenti ad arco della Città di Cremona.

A Cremona, nel 1987 assiste M° Charles Beare di Londra, studioso e massimo esperto mondiale della liuteria cremonese classica, nella mostra retrospettiva del 250mo anniversario della morte di Antonio Stradivari, contribuendo alla pubblicazione del catalogo commemorativo dell'evento.

Bruce Carlson ha fatto parte della giuria in diversi concorsi di liuteria e ha partecipato all'organizzazione di numerose mostre e alla pubblicazione dei rispettivi cataloghi.

Nel Giugno del 2000 è stato nominato liutaio conservatore della collezione di strumenti ad arco della Città di Genova.

Attualmente membro del Comitato Scientifico del Museo del Violino di Cremona.

3D SYNCHROTRON IMAGING OF PAGANINI'S VIOLIN "CANNONE" AT THE EUROPEAN SYNCHROTRON RADIATION FACILITY

Paul Tafforeau*, L. Paolasini, A. Mirone, Y. Watier, C. Muzelle, C. Jarnias, F. Sette, B. Carlson, N. Sodini, A. Giordano

Abstract

La At the request of the authorities in charge of its preservation, the famous violin "Il Cannone" — once played by Niccolò Paganini — was examined using an advanced, non-invasive imaging technique: 3D X-ray microtomography by synchrotron radiation. This was performed at the BM18 beamline of the European Synchrotron Radiation Facility (ESRF), in Grenoble, France [1].

Unlike standard medical scanners, this technique provides extremely high-resolution images (up to a few microns) and allows us to "see inside" the instrument in great detail, without opening or damaging it. We were able to assess the general internal condition of the violin, including the glued joints, the presence of fractures and micro-fractures, and traces of repairs or modifications carried out over the centuries.

Before examining Il Cannone, we performed test scans on several modern and historical violins to fine-tune the protocol. Everything was done in close collaboration with expert luthiers, with great care taken to preserve the instrument's integrity. During scanning, the violin was kept in strictly controlled atmospheric conditions: temperature at $23^{\circ}\text{C} \pm 0.2$ and relative humidity at $50\% \pm 1\%$, to match museum standards and prevent any deformation or damage. In addition, radiation exposure was kept extremely low, far below any damaging threshold.

We used high-energy X-rays (135 keV) with long propagation distance (20m) and innovative algorithm to obtain high-quality images of both the wooden and metallic parts, including the iron nails in the neck joint — a detail characteristic of 17th-century Italian violin making.

We studied how the structure of the violin changes when the strings are tightened. Using a technique called Digital Volume Correlation (DVC), we compared two 3D scans of the instrument — one tuned, one untuned — to detect microscopic internal movements. This made it possible to assess whether any fragile zones are under mechanical stress, which is important for evaluating the long-term safety of playing the instrument.

Some critical areas were also scanned at even higher resolution (down to 2.2 microns per voxel), in order to closely examine the structure of micro-fractures or other internal alterations such as traces of xylophagous insects and their attempt or reparation. It was also used to investigate more in details the famous hole in the back of the violin down to the cellular structure.

This unprecedented 3D analysis provides essential information about the current state of Il Cannone, helps to guide future conservation efforts, and offers valuable historical insights into the instrument's construction and evolution over time.

Keywords: microtomography, synchrotron, phase-contrast

Short notes or bibliography:

*Paul Tafforeau, BM18 beamline scientist at the European Synchrotron Radiation Facility, Grenoble, France
J. Vijayakumar, H. Dejea, A. Mirone, C. Muzelle, J. Meyer, C. Jarnias, K. Dollman, S. Zabler, L. Paolasini, A. Bellier, B. Cordonnier, V. Fernandez and P. Tafforeau, (2024). Synchrotron Radiation News, 37(5), 16–25.*

**NEW ORGANOLOGICAL INSIGHTS FROM SYNCHROTRON IMAGING OF THE “CANNONE”:
TOWARD A FRAMEWORK FOR FUTURE RESEARCH**

Luigi Paolasini*, Paul Tafforeau, A. Mirone, Y. Watier, C. Muzelle, C. Jarnias, F. Sette, B. Carlson, N. Sodini, A. Giordano

Abstract

Paganini's *Cannone* violin, crafted by Guarneri del Gesù in 1743, features a remarkably innovative internal structure rooted in specific acoustic principles that set it apart from most instruments of its era. Its powerful projection and rich tonal palette—particularly the resonant low-frequency response of the G string—are closely tied to the design of the body, internal components, and overall geometry, as revealed through high-resolution synchrotron microtomography.

To assess structural integrity and internal mechanics, 3D Digital Volume Correlation (DVC) was applied to scans of the violin in both tuned and untuned states. This non-destructive method validated prior laser interferometry deformation measurements [1] and unveiled internal strain fields and deformation patterns at the micron scale. These findings illuminate how bridge pressure influences the soundboard and generates complex stress distributions throughout the instrument. Comparative analysis with a modern replica underscored structural differences likely stemming from material aging and prolonged use, suggesting a connection to the *Cannone*'s distinctive tonal character.

The results lay the groundwork for future research using advanced finite element modeling (FEM) to simulate acoustic behavior through modal analysis [2]. By incorporating real wood density and experimentally derived strain fields into a segmented digital twin, and accounting for pre-stressed conditions, these models offer a novel approach to exploring how long-term strain evolution affects resonance and sound projection. Such insights could inform studies on the playability and acoustic longevity of historical instruments.

This project highlights the value of interdisciplinary collaboration among conservators, luthiers, and acousticians in developing replicable, non-invasive diagnostic frameworks for the digital preservation of heritage instruments. The recent commissioning of a large tomographic stage at beamline BM18 further expands the potential for studying larger string instruments, including cellos and double basses, with similar non-destructive precision.

Keywords: Synchrotron Microtomography, Digital Volume Correlation (DVC), Finite Element Modeling (FEM), Historical Violin Acoustics.

Short notes or bibliography:

Luigi Paolasini, Scientist at European Synchrotron Radiation Facility, Grenoble, France

[1] M. Fioravanti, G. Golia and B. Carlson *Journal of Cultural Heritage* 13, 145-153 (2012)

[2] Colin E. Gough, *J. Acoust. Soc. Am.*, 137, 1210-1225 (2015)

Luigi Paolasini is a solid-state physicist specializing in the electronic and magnetic properties of materials, investigated using neutron and X-ray techniques. After earning his Laurea in Electronic Engineering and Communication from the University of Ancona, he obtained a PhD in Physics in 1996 from the Université Joseph Fourier in Grenoble, in association with the Institute of Transuranium Elements in Karlsruhe.

He joined the European Synchrotron Radiation Facility (ESRF) in 1998, working at the magnetic scattering beamline ID20. Since 2013, he has been based at the inelastic scattering beamline ID28, dedicated to the study of sound propagation in materials. His research interests also extend to the acoustics of musical instruments and the construction of quatuor instruments.

In addition to his scientific activities, Luigi Paolasini is an Associate Professor at Université Grenoble Alpes and is responsible for the Higher Education and Doctoral Program at ESRF.

**THE IMPORTANCE OF HISTORICAL VIOLINS IN CULTURE: SYMBOLIC AND HERITAGE
VALUES AND PARIS COLLECTION EXPERIENCE, PARIGI**

Jean-Philippe Échard*, Mathieu Houry**

Abstract

Most classical music concertgoers have at least some knowledge or opinion on 16th-18th-centuries Italian violins. In the past 200 years these violins' renown transformed into a widespread cultural hyperbole, often associating "quality" to an aura based on secrets and myths. [1] This paper invites to consider, in this context, possible contributions of museums in the collective social construction of the authenticity of historical violins.

In the last decade, several violins of the collection of the Musée de la musique were prepared and programmed for concerts and recordings, while at least ca.40-60 16th-18th-centuries Italian violins, violas and cellos could be heard under soloists' bows each year in the concert halls of the Philharmonie de Paris. This paper addresses the diversity of heritage and cultural values that concertgoers and museums' visitors generally associate with historical violins, and what makes the specificity of performances of historical violins of museum collections *from the listeners' viewpoints*, how diverse are the heritage and cultural values that, and how does the status of a violin belonging to a museum collection change the assessment of its expected "quality".

Historical violins are not only musical instruments, but also objects from the past. Their materiality embeds information, which can be analyzed to retrieve knowledge on the material culture of the craftsmen – the violin makers– as well as the material history of each of these artefacts from their making until now. Historical violins serve as tangible evidence of musical evolution, particularly through the technical modifications made to alter their playability and tone over time. However, retrospectively analyzing the physical traces left by changes in configuration—such as replacements or repositioning—presents significant challenges, both in terms of establishing effective investigative protocols and accurately interpreting the significance of these alterations. The challenges of reconstructing these past states, and the inherent uncertainty in doing so, have led to an approach that moves away from a strictly positivist reconstruction of history. Instead, it allows space for acknowledging ambiguity and incorporating margins of uncertainty into the interpretation.

The historical value of the materiality of these artefacts for music history, contemporary instrument making, and historically-informed practices will be illustrated by our study using X-ray Computed-Tomography imaging technique of one instrument of the Paris collection, the violin "Sarasate" (Antonio Stradivari, Cremona, 1724, inv. E.1729). The provenance of this instrument is completely known, and it still bears its original neck [2,3]. Using the otherwise inaccessible wooden elements and holes within the violin body and neck, it was indeed possible to digitally and non-invasively reconstruct and reposition the neck of the instrument in its original 1724 position, as well as in the 1774-5 position, when the neck was tilted back by Giovanni Battista Guadagnini, that is in the state where Niccolò Paganini played it, after he purchased it from the count Cozio di Salabue July 1817. This work also provided an opportunity to examine and reconsider the relationships between the presence of structural elements, the inferences made about their roles within various configurations, and the uncertainty involved in determining those configurations.

Keywords: cultural values, heritage science, CT-scan, stradivarius

Il Cannone di Paganini e la Conservazione del violino storico.

Collezioni di strumenti musicali ad arco, confronti e strategie

24 ottobre 2025

Genova, Palazzo Tursi

Short notes or bibliography:

*Collection curator, musée de la Musique, Cité de la musique – Philharmonie de Paris and Centre de Recherche sur la Conservation, CNRS, ministère de la Culture, MNHN, UAR3224, Paris, France

**Laboratory director, IPANEMA, CNRS, ministère de la Culture, UVSQ, UAR3461, Université Paris-Saclay, F-91192 Gif-sur-Yvette, France

[1] Jean-Philippe Échard, "Aux sources du mythe", *Stradivarius et la lutherie de Crémone*, 2022, Paris, Éditions de la Philharmonie, pp.7-10.

[2] Jean-Philippe Échard, "Reconstructing the History of the 1724 'Sarasate' Stradivarius Violin, with Some Thoughts on the Use of Sources in Violin Provenance Research", *The Galpin Society Journal*, 2020, 73, pp.111-132 & 196-198.

[3] Jean-Philippe Échard, *Le violon Sarasate, Stradivarius des virtuoses*, 2018, Paris, Éditions de la Philharmonie.

Jean-Philippe Échard is curator of stringed instruments at the Musée de la musique in Paris (Cité de la musique – Philharmonie de Paris, France) since 2014.

Jean-Philippe Échard trained as a chemist, with a doctorate from the Muséum National d'Histoire Naturelle (2010) on 16th-18th-c. varnishing techniques in instrument-making. He conducted research in the laboratory of the Musée de la musique (1999-2004 ; 2006-2013) and at the National Gallery of Art, Washington DC, USA (2004-2005).

Échard's current research is focused on organology in its cultural, social, economic, material context. His recent contributions mostly relate to the history and heritage values of musical instruments. He is the author of two books as well as numerous papers and articles.

Mathieu Thoury is a CNRS researcher and has headed the IPANEMA laboratory since September 2023. A physicist by training, he earned his PhD from the University of Paris VI in 2006 with a thesis on spectroscopic characterisation of paint varnishes. He completed a postdoctoral fellowship at the National Gallery of Art in Washington, D.C., studying pictorial materials through hyperspectral imaging. He then joined the Centre de recherche sur la conservation des collections, focusing on the preservation of colour molecules in fossils.

At IPANEMA, he develops advanced imaging techniques for studying ancient materials, with research centred on the physico-chemical evolution of materials and the interplay between preservation and alteration. His work combines synchrotron and laboratory imaging approaches. His main interests include the conservation of biomolecules and biopolymers in fossils, taphonomic processes, corrosion in archaeological metal artefacts, and artistic techniques in 20th-century paintings.

**FROM PRESERVATION TO PERFORMANCE: STRATEGIES FOR THE USE AND
CONSERVATION OF ORIGINAL STRING INSTRUMENTS AT THE SCHOLA CANTORUM
BASILIENSIS**

Kathrin Melanie Menzel

Curator, Schola Cantorum Basiliensis | HSM FHNW, Basilea, Svizzera

Abstract

The Schola Cantorum Basiliensis (SCB) houses a unique collection of original string instruments that are not only preserved as historical artifacts but are also actively used in performance and pedagogical contexts [1]. This paper explores the institution's integrated approach to conservation and use, examining the specific strategies employed to balance the physical preservation of these instruments with their continued function as tools for historically informed performance. Drawing from case studies within the SCB's "played collection," the presentation addresses the ethical, practical, and curatorial challenges of maintaining musical functionality while adhering to rigorous conservation standards. Particular attention is given to how documentation, diagnostics, and preventive conservation practices support sustainable usage. In the context of an international dialogue on conservation — as exemplified by the symbolic role of Paganini's *Cannone* — the SCB model offers a relevant contribution to broader debates on the dynamic role of historical instruments within living musical cultures.

Keywords: Historical string instruments, Conservation and performance, Played collection, Preventive conservation, Historically informed performance practice

Short notes or bibliography:

Kathrin Melanie Menzel, curator, Schola Cantorum Basiliensis | HSM FHNW, Basilea, Svizzera

[1] Kirnbauer, Martin: «Die 'Instrumentenfrage' der Schola Cantorum Basiliensis», in: Martina Wohlthut (Hg.), *Tonkunst macht Schule. 150 Jahre Musik-Akademie Basel 1867-2017*, Basel: Schwabe 2016, 309-317.

**FROM INSTRUMENTS TO BE PLAYED TO INSTRUMENTS TO BE PRESERVED. THE
TRANSITION OF THE BERLIN COLLECTION AT THE ROYAL ACADEMY OF MUSIC TO THE
MUSEUM OF MUSICAL INSTRUMENTS**

Brilmayer Benedikt

Abstract

The collection of the Musikinstrumenten-Museum Berlin (MIM) was established in 1888 and originally affiliated with the Royal Academy of Music of Berlin. In the early years, the instruments were not only collected as cultural artefacts, documenting the artisanal traditions of instrument making, but also for their historically characteristic sound qualities.

In addition to concerts and demonstrations during academic lectures, the instruments were soon integrated into historically informed teaching practices, enabling students to discover “original timbres” as well as tactile and mechanical aspects (significantly different across individual instruments) while practicing and learning.

With the increasing awareness of conservation imperatives and the institutional reorganization of the museum under the State Institute for Music Research in 1935, ethical considerations regarding the handling and use of collection objects underwent a fundamental transformation. During the 1950s, former MIM director Alfred Berner (1910-2007), among others, played a formative role in the establishment of CIMCIM (the International Committee of Museums and Collections of Instruments and Music, now ICOM-Music). The development of institutional frameworks and codified ethical guidelines laid the foundation for a more differentiated discourse on the conditions under which historical instruments may be played.

Today, the Musikinstrumenten-Museum offers multiple modalities of presenting the sound of its collection to the public. These include audio guide tours and live performances on historical instruments. Additionally, CD recordings offer a permanent possibility to listen to the collection, and are sold in the museum shop. In recent years, new types of recordings have been developed, to present samples a selection of instruments from our collection with a focus on accessibility for educational and interpretive purposes.

This presentation examines potential and limitations of different approaches in the presentation and the performance use of historical instruments in a museum. Particular emphasis is given to the institutional, ethical, and practical prerequisites that drives such practices at the Musikinstrumenten-Museum Berlin.

Keywords: recording and/or performing on historic instruments, accessibility of sounds, development of ethical guidelines for handling musical instruments as collection objects

Short notes or bibliography:

Brilmayer Benedikt, curator and researcher, Musikinstrumenten-Museum, Berlin, Germania

[1] *Wege zur Musik. Staatliches Institut für Musikforschung PK, Berlin 1984.*

[2] *100 Jahre Berliner Musikinstrumenten-Museum. Staatliches Institut für Musikforschung PK, Berlin 1988.*

WHEN MUSIC LEADS TO LOSS: ARBITRATING ALTERATION, PREVENTING DETERIORATION

Balthazar Soulier *

Abstract

Any handling of a violin inevitably leads to irreversible material alteration on a certain scale. It is therefore essential to determine which types and degrees of alteration may be regarded as acceptable in a given context. Addressing this question requires first establishing the scale at which material changes — and subsequent conservation treatments — should be assessed. The continuous development of analytical and imaging technologies deepens our understanding of materiality and enables the optimisation of conservation practices, while simultaneously rendering such assessments more complex.

This paper proposes a typology of the main alterations occurring in played violins. Drawing on selected case studies from both private and public collections, it explores how the threshold at which an alteration is considered critical varies according to the specific values attributed to an instrument within its context of reception.

Finally, it presents ongoing preventive conservation strategies, highlighting the practical and ethical challenges inherent in the continued use of historical violins.

Keywords: Preventive conservation, Materiality, Alteration, Deontology

Short notes or bibliography:

*Balthazar Soulier *, conservator and Expert in violin family instruments, Atelier Cels, Paris, France & Bern University of Applied Science, Switzerland.*

Balthazar Soulier is a conservator-restorer, luthier, and expert in instruments of the violin family. Following classical studies in cello and an apprenticeship at the Mittenwald School of Violin Making in Bavaria, he trained for several years in restoration and expertise with J.-F. Schmitt in Lyon and H. Köstler in Stuttgart.

In 2005, he entered the Conservation and Restoration program for Paintings and Wooden Sculptures at the Academy of Fine Arts, Stuttgart, earning a Master's degree in 2010 with a focus on Renaissance lute varnishes.

In 2014, he founded Atelier Cels in Paris, an innovative studio specialising in technological documentation, conservation-restoration, expertise, and provenance research of fine stringed instruments. His expertise is sought after by leading international artists, collectors, and public institutions. Alongside his practice as a conservator-restorer and expert, Soulier contributes to European research projects on historical varnishes and conservation techniques. Since 2018, he has held a part-time research position in art technology at the Bern University of the Arts in Switzerland.

THE MUSICAL FRUITION OF MUSEALISED VIOLINS: EXAMPLES FROM THE MUSEO DEL VIOLINO COLLECTIONS

Riccardo Angeloni*

Abstract

Founded in 2013, the Museo del Violino in Cremona brings together civic and private collections that were assembled at different times and according to different criteria. Most of the instruments are kept in functional condition, and some of them are regularly played, to varying degrees, in musical performances open to the public.

The decision to play a musealised musical instrument requires both cultural and conservation considerations.

First of all, it is necessary to understand why one would play: what is the cultural and social return on the experience of playing an ancient instrument? To what extent can it be a practical and economic resource for a museum institution?

These issues cannot be discussed without considering the cost of use in terms of conservation: which historical, technological and aesthetic elements are affected by use? How can these effects be identified and limited? To what extent, if any, is deterioration acceptable?

Far from a theoretical solution to these issues, the only compass available is intimate knowledge regarding not only the class of musical instruments, but also the individual artefact, its material characteristics and its unique cultural and conservation history. The reasons for and when the exemplar was placed in a museum are of fundamental importance in deciding whether and how much to play a violin, and the protocols for managing its use become the preferred conservation tools, together with good maintenance and remedial and preventive conservation practices.

Keywords: Museo del Violino, violin conservation, historical instruments, sound

Short notes or bibliography:

[1] Cacciatori, F. (2022). *Cenni di Storia della Collezione del Novecento*, in *Liutai Italiani Del Novecento nelle collezioni del Museo del Violino*. Edizioni Museo dei Violino.

[2] Cacciatori, F., Angeloni, R. (2025) *Storia di una Collezione*, in *Lo Scrigno dei Tesori*. Edizioni Museo del Violino.

[3] Invernizzi, C. (2020). *Advanced multi-analytical methods for the study of microscopic layered structures: the case of musical instruments*.

[4] Wilder, T. (2025). *A Cultural History of the Violin in Nineteenth-Century London: From Instrument to Art*. Boydell & Brewer.

[5] Beare, C. (2016) *The Life of a Masterpiece*, in *The Absolute Stradivari, the Messie violin 1716-2016*, edited by Cacciatori, F., Alf, Gregg. Edizioni Museo del Violino

[6] Échard, J.P. (2020). *Reconstructing the History of the 1724 'Sarasate' Stradivarius Violin, with Some Thoughts on the Use of Sources in Violin Provenance Research*. *Galpin Society Journal*, 2020, 73, pp.111-132, 196-198.

Riccardo Angeloni, *Conservator, Museo del Violino, Cremona, Italy

*Professional position, Institute, city, country

Riccardo Angeloni, Curator at Museo del Violino

Trained as a luthier, he specialised by becoming the first person in Italy to obtain a master's degree in Conservation and Restoration of Cultural Heritage, specifically for musical and technical-scientific instruments, with a thesis on the history of Venetian violin-making and the conservation of an 18th-century violin. After training and professional experience in workshops and museums in Italy and abroad, he took on the role of Curator of the Collections of the Museo del Violino in Cremona, where he also teaches as an adjunct professor in the Master's Degree in Conservation and Restoration of Cultural Heritage at the Department of Musicology and Cultural Heritage of the University of Pavia. He collaborates in the organisation of training and research activities with the UNESCO Plan for the Safeguarding of Traditional Cremonese Violin Craftsmanship of the Municipality of Cremona. Among the latest conservation projects, in 2025, he worked in collaboration with Bruce Carlson on the Stauffer, Ex Cristiani 1700 cello by Antonio Stradivari.

ON CONSERVATION OF HISTORICAL STRINGED INSTRUMENTS IN MUSEUMS

Karolina Anna Tatar*

Abstract

Conservation of historical musical instruments in museums and public collections has been discussed at least since 1934 when Curt Sachs, one of the founders of organology, wrote his major, albeit later partly rejected, contribution “La signification, la tâche et la technique muséographique des collections d'instruments de musique.” Subsequently, starting from the 1960s, the newly established ICOM (International Council of Museums) committee CIMCIM (today ICOM MUSIC) elaborated numerous related publications (latest in Barclay 1997) which set the museum standards and still constitute their reference point on the international scale. That evolutionary discussion was and continues to be characterised by the divergence of viewpoints of different museum professionals and collaborators (specifically, curators, directors, conservators, restorers and organologists). In parallel, the topic of conservation of historical instruments, particularly violins, has occasionally entered the non-scientific public debate (Fisher 2007) reinforcing popular myths on their preservation methods. The paper aims to present a comprehensive and an up-to-date overview on the conservation of historical musical instruments in museums focussing on bowed strings. Moreover, it concentrates on the crux of both the past and the present debates that is the use of historical instruments and their conservation for functionality reasons – a contradiction to how museology conceptualised a museum object (Pomian 1987). The debatable issue will be addressed by raising research questions regarding the loss of original historic substance and, hence, integrity as well as a possible ontological transformation from a museum object to a post-museum object all resulting from playing a historical instrument. Apart from that, given the intricacy of the functional, sound quality of a musical instrument over time, the study advocates for making copies on the basis of measurements and technical drawings provided by museums. The following part of the paper is dedicated to a study case of the Musical Instrument Gallery of Turin Conservatory (Caviglia et al. 2006), an object of the author's doctoral study aimed at its new interpretation. The educational institution hosts 29 bowed instruments of which 13, mainly representatives of the 1800 and the 1900 Piedmontese School of Lutherie, are regularly maintained in functional conditions (effectively performing two functions: of museum objects and of study instruments). To conclude, consequential concrete everyday challenges and decisions of complex balancing between conservation, use and strategies for promoting a musical instrument collection are explored and evaluated.

Keywords: museum conservation, historical stringed instruments, functionality, ontology, Musical Instrument Gallery of Turin Conservatory

Il Cannone di Paganini e la Conservazione del violino storico.

Collezioni di strumenti musicali ad arco, confronti e strategie

24 ottobre 2025

Genova, Palazzo Tursi

Short notes or bibliography:

- Barclay R. L. (ed.). (1997). *The Care of Historic Musical Instruments*. Ottawa: Canadian Conservation Institute; London: The Museums and Galleries Commission (UK); and Edinburgh: CIMCIM.
- Barclay R., Gétreau F., Hellwig F., Karp C., Lambrechts-Douillez J. & Palmer F. (1985). *Recommendations for Regulating the Access to Musical Instruments in Public Collections*. CIMCIM.
- Berner A., Van Der Meer J. H. & Thibault G. (1967). *Preservation and Restoration of Musical Instruments: provisional recommendations*. London: Evelyn, Adams & Mackay.
- Birley M., Eichler H. & Myers A. (1998). *Voices for the silenced: Guidelines for Interpreting Musical Instruments in Museum Collections*. CIMCIM.
- Caviglia G., Leoni S., Massimino E. & Odling F. (Eds.). (2006). *La Galleria degli strumenti. Guida al percorso di visita*. Turin. *Copies of Historic Musical Instruments*. (1994). CIMCIM Publications No. 3.
- Dehail J. (2020). *Conflicting Authenticities in the Museum: The Exhibition of Musical Instruments*. In Kimmel D & Brüggerhoff S. (Eds.), *Museen – Orte des Authentischen? Museums – Places of Authenticity?* Mainz: RGZM – Tagungen 42.
- Echard J.-P. (2022). *Stradivarius et la lutherie de Crémone. Cité de la musique - Philharmonie de Paris*.
- Ferrari Bassi E. & Laini M. (Eds.). (1987). *Per una carta europea del restauro: conservazione, restauro e riuso degli strumenti musicali antichi*. Atti del Convegno internazionale: Venezia, 16-19 ottobre 1985. Florence: L. S. Olschki.
- Ferraris M. (2012). *Alla ricerca del suono perduto: filologia del violino barocco*. Monza: Casa musicale Eco.
- Fisher I. (2007). *Fingers That Keep The Most Treasured Violins Fit*. *The New York Times*, 3 June, sec. Europe. <https://www.nytimes.com/2007/06/03/world/europe/03cremona.html>
- Fricke H. *Music Museums and Musical Instrument Collections*. <https://miz.org/en/articles/music-museums-and-musical-instrument-collections>.
- Galleria degli strumenti. <https://www.conservatoriotorino.eu/studiare-qui/il-conservatorio/museo-degli-strumenti/>.
- Harnoncourt N. (1988). *Baroque Music Today: Music as speech: Ways to a new understanding of music*. Portland, Or.: Amadeus Press.
- Karp C. (1979). *Restoration, Conservation, Repair and Maintenance: Some Considerations on the Care of Musical Instruments*. *Early Music*, Jan., Vol. 7, No. 1, pp. 79+81+83-84.
- Lamb A. (1995). *To play or not to play: the ethics of musical instrument conservation*. *Conservation Journal*, April 1995, Issue 15. http://www.vam.ac.uk/content/journals/conservation-journal/issue-15/to-play-or-not-to-play-the-ethics-of-musical-instrument-conservation/?srltid=AfmBOope6wyifi3S2R_crDMuavLpDqQ5fDIOA-bXUSD3PGBxFR-uwP
- Pollens S. (1989). *Curt Sachs and Musical Instrument Restoration*. *The Musical Times*, Oct., Vol. 130, No. 1760, Aspects of the Keyboard (Oct., 1989), pp. 589-594. <http://www.jstor.com/stable/965574>
- Pomian K. (1987). *Collectionneurs, amateurs et curieux: Paris, Venise, XVIe-XVIIIe siècles*. Paris: Gallimard.
- Recommendations for the conservation of musical instruments in collections: an annotated bibliography*. (1993). CIMCIM Publications No. 1.
- Restauro, conservazione e recupero di antichi strumenti musicali*. (1986). Atti del Convegno internazionale, Modena, 2-4 aprile 1982. Florence: L. S. Olschki.
- Rossi Rognoni G. (2019). *Preserving Functionality: Keeping Artifacts 'Alive' in Museums*. *Curator: The Museum Journal*, 62/3 (July 2019), pp. 403-414.
- Sachs C. (1934). *La signification, la tâche et la technique muséographique des collections d'instruments de musique*. *Mouseion*, vol. 27-28, pp. 153-184.
- Tiella M. & Zanisi T. (1990). *Contributi allo studio del restauro degli strumenti musicali*, Cremona: Turris.
- Training in Musical Instrument Conservation*. (1994). CIMCIM Publications No. 2.
- Karolina Anna Tatar*, PhD Candidate in Cultural Heritage and Historical-Artistic, Audiovisual and Multimedia Production, University of Turin, Italy.
- Karolina Anna Tatar is a PhD student at the University of Turin with a research project on the new interpretation of the Gallery of Musical Instruments of the Conservatory of Turin "Giuseppe Verdi" coordinated by prof. Silvia Pireddu. She bears two Bachelor's Degrees, in Conducting Musical Ensembles from the "Fryderyk Chopin" University of Music in Warsaw and in English Studies from the University of Warsaw and four Master's Degrees, in Choir Conducting from the "Fryderyk Chopin" University of Music in Warsaw, in Specialised Translation and in Teaching Italian as Second Language from the University of Turin and in Conference Interpreting from the tuttoEUROPA Training Agency. In 2023, Karolina won the "Translation, multilingualism and intercomprehension" research grant at the University of Turin coordinated by prof. Silvia Verdiani. Lately, she concluded a course in the harpsichord and pianoforte playing at the Conservatory of Turin under the guidance of prof. Francesca Lanfranco.

SOUND AND SILENCE: ON THE NATURE OF MUSICAL INSTRUMENTS IN MUSEUMS

Gabriele Rossi Rognoni

Abstract

- 'Violins kept in vitrine dry out and die. It is the use and the humidity emanated by the player that keeps them alive' (Lorin Maazel, *The New York Philharmonic in Victorian New York*, 6 December 2002).
- 'Instruments, by continual use, are apt to become weary. They may even virtually be killed. Give them rest. We feel it a duty to urge most strongly that fine instruments should not be brought to premature death by ceaseless use' (W. Henry, Arthur F., Alfred E. Hill, *Antonio Stradivari: His Life and Work (1644-1737)*, 1902, p. 239).
- '[The musician's] task is to consume musical instruments' (*CIMCIM Bulletin* 50, 2002).

These three powerful quotations encapsulate a debate that has developed for well over a century and on which the world of musical instrument curators and conservators is still widely divided. How much does a musical instrument, the moment it becomes part of a museum, shift its identity from being a sound-producing device to becoming a source for historical and technological knowledge and how much is the latter impaired or put at risk by the former? How integral is sound in the nature and identity of a musical instrument, and can one be univocally identified as prevailing on the other? While an emotional response is almost obvious, the ontological, technical and practical implications of this choice has shifted several times in the past, leading to contrasting perspectives and policies that still result today in opposed approaches.

However, while the discussion about functionality of musical instruments in museums has reached a standstill, the discussion on tangible and intangible cultural heritage has obtained increased international attention, new advancements in science led to new possibilities to monitor and assess the state of health of instruments and quantify risk, and new alternatives have emerged to the use of originals, such as 3D-printed reproductions and increasingly accurate digital simulations.

The paper offers a reassessment of the core motivations that inform institutional policies against the recent developments of theoretical, cultural and technological debates, mostly looking at what is happening outside the world of musical instruments and considering how the broader discussion on functional heritage (objects that had a functional purpose and have been singled out as cultural heritage) can inform choices in music collections.

Keywords: functional heritage, music museums, playability.

Short notes or bibliography:

The paper is a development of previous contributions by the author on this topic, and in particular:

G. Rossi Rognoni, 'Preserving Functionality: Keeping Artefacts 'Alive' In Museums', *Curator: The Museum Journal*, 62/3 (July 2019), pp. 403-413.

G. Rossi Rognoni, *Perspectives from a Changing Culture: One Hundred Years of Debate on the Role of Musical Instruments, in Effects of Playing on Early and Modern Musical Instruments*, ed. by G. Rossi Rognoni and A.M. Barry (London: Royal College of Music, 2017), pp. 13-17.

Gabriele Rossi Rognoni, professore Ordinario di Musicologia, Università di Roma 'La Sapienza', Roma, Italia Curator and Chair of Music and Material Culture, Royal College of Music, London, UK.