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Historical Musical Instruments: A Claim to Use, an Obligation to Preserve

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THE LAST CENTURY AND A HALF has seen the birth and growth of the early music revival with its claim to antique musical instruments as functioning tools. The same period has also seen the rise of museums as a force in our society, and, with museums, the development of new disciplines in the study and preservation of history through study and preservation of the material legacy. Museums and musicians represent two fundamentally different ways of viewing antique musical instruments, each view with its own demands on proper use and care of instruments and each view traditionally suspicious of the intentions and methods of the other. This claim to use old musical instruments and the obligation to preserve them for the future are the often fractious offspring of these two comparatively modern phenomena.

Some of the insights of these two views will be detailed alternately in this article followed by an attempt at an informed synthesis.

The first, more obvious, and common view is to consider musical instruments as did their makers—as instruments for making music. According to this view, respect for the instrument and its maker dictates that old instruments should be made to fulfill their musical potential whenever possible. The revival of interest in early music has drawn much attention to the instruments appropriate to the revived music. Playing early music on authentic antique instruments puts us virtually in physical contact with the past that we as musicians are trying to interpret. From this point of view, leaving silent an historical instrument solely for the sake of preservation is an absurdity.

The second way of viewing antique musical instruments considers their primary worth to go far beyond the sounds they make. Like other historical artifacts, old instruments are a window on cultural history. Through them, there is much we can learn about the people who made and played them, about the technologies devised by their makers, and about the visual aesthetics of the particular culture and time from which they came. The accretions, alterations, and erosion caused by recent generations of restorers and musicians on the instruments only serve to obscure the image. Thus, from this point of view, playing an old instru-

ment represents an unacceptable attack on the physical and historical integrity of the "artifact."

Preservation of historical musical instruments is, of course, equally important to musicians and museums. However, the prescriptions for preservation offered by the two are often quite different. Players of musical instruments often insist that preservation is a by-product of regular use of the instrument. String players observe that disuse seems to cause stringed instruments to "forget how to vibrate"; the wood becomes stiff, tone becomes stifled, and the instrument becomes less responsive. Similarly, musicians whose instruments have mechanical components, such as keyboard instruments, keyed winds, and valved brass notice that disuse can result in sluggish or non-functional mechanical action. Woodwind players know that an instrument that has not been played for a long period risks splitting if suddenly played in a normal manner. The conclusion from these observations is often that musical instruments should be played regularly for their own preservation.

"Preservation through playing" is indeed preservation—only if short-term tonal and mechanical performance-readiness is the goal of preservation. But if we are talking about long-term preservation, the notion of preservation through playing is a dangerous myth. One of the differences between our dual views is in each side's sense of time. Though recordings capture at least an imperfect image of performance, music remains essentially ephemeral. Musicians perform primarily for the benefit of the current audience, or through recording to the current generation. In contrast, conservators are in service to people of the next dozen centuries as much as to people of the present. The meaning, goals, and methods of preservation that come out of these two disciplines are predictably quite different.

Historical artifacts may be understood metaphorically as "documents." This is especially easy to illustrate in the case of European Renaissance, baroque, and classical instruments which are reproduced more or less accurately by instrument makers today for use in historically informed early music performances. To the modern maker of historical musical instruments, a well preserved historical instrument constitutes an authentic, first edition, autographed copy of a multi-volume encyclopedia about period instrument making "written" by a practicing instrument maker (as opposed to a theorist or non-technical chronicler).

Just how voluminous is the treatise that the instrument represents is limited only by our skills of observation, our ever-increasing analytical

technologies, and our ever-expanding curiosity. In the pages of this "document," one can read great detail about the relevant acoustical, mechanical, and structural engineering employed by the maker; technical details about the choice of materials such as the species, grain direction, weight and density of woods, and the alloy and temper of metals. Tool marks and glue runs describe the tools and procedures of assembly. Evidence of what were considered acceptable tolerances in mechanical components and of mass production techniques is there. The principles of visual aesthetics can be learned, especially when the instrument is compared with other instruments and other decorative arts of the region. Comparisons of the workmanship and the decorative or technical "language" can lead to an attribution even when the instrument is unsigned. Such comparisons also point to relationships with other crafts, indicating, for instance, when a particular component was made in the instrument maker's own shop, or was supplied by another vendor. If the instrument is undated, a determination of its age is often readable in the physical evidence in the instrument.

The metaphor of instrument as encyclopedia also provides a useful insight on the impact of restorations and heavy musical usage on the instrument. The replacement of degraded textiles, leather, surface coatings, patination, strings, or other ephemeral components of the instrument is equivalent to the tearing out and permanent loss of whole chapters, even volumes, of the encyclopedia.¹ How thick and how many were the layers of the cloth that once cushioned the backrail of a harpsichord keyframe? What kind of cloth was it, how was the cloth attached, and how loosely was it woven? New cloth may have made the instrument playable, but it rendered the document seriously compromised. Even a too-thorough cleaning can obscure original construction lines, delicate tool marks, or glue runs—all evidence of original construction procedures.

The destructive effects of the normal playing of a musical instrument over several years is undeniable. Harpsichords, possessing a diversity of materials and mechanical elements, serve as a useful case study.

1. The impact of restoration on the historical integrity of antique musical instruments is the subject of an article by John Barnes, "Does Restoration Destroy Evidence?" *Early Music* (April 1980): 213–18.

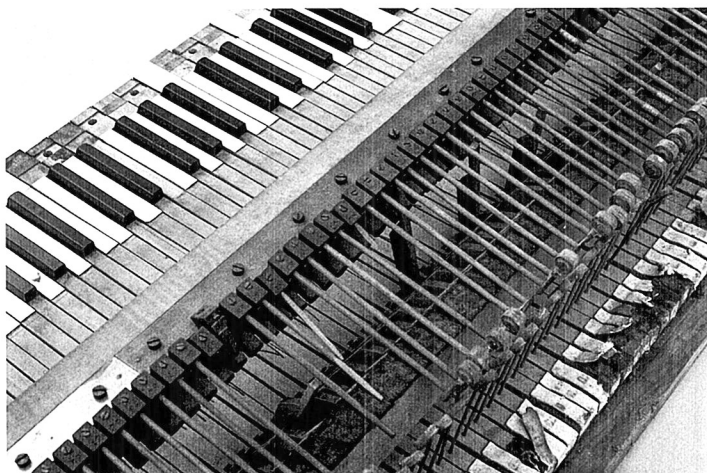


FIGURE 1. Though in very bad condition, this action of a 1790s James Ball (London) piano has original and unaltered hammer leather, key leather, and key-frame cloth. The ivory erosion patterns have remained unchanged for more than a century. The same instrument has many rusty and broken but original strings with their original loops and coils, as well as the original finish, and other ephemera. As a musical instrument, the piano is a derelict; but as long as it is not restored, the piano remains an encyclopedia of early piano making, and as such, it is extraordinarily pristine and complete.

In a solo harpsichord work, a key near the middle of the range is likely to be struck in excess of thirty times each minute. In an hour of rehearsing, the harpsichordist will play the same key well over two thousand times. With each strike of the key, a chain reaction of abrasive forces is unleashed.

While the harpsichord is played, old and fragile leather is hammered by the wooden jacks at a rate of over two thousand times an hour, causing disintegration of the leather. The balance mortises in the key abrade against the iron balance pins and front pins, creating a widening of the mortise around the pin, thus causing the key to increasingly wobble from side to side under the player's fingers. The ivory key-tops erode under the constant drum-beat of fingers, leaving the ivory dished

out. By measuring the depth of the depressions in keyboards that have had no modern use, we may someday learn something about historical fingering or hand positions.² This is reading the historical document which antique instruments represent. Here is valuable data which becomes spoiled with even occasional modern use.

The damage caused by playing antique instruments is often preceded by much greater damage wrought by restorers. Restoration has often been carried out by traditional repair, maintenance, and even modernization procedures involving replacement of any worn or damaged material—whether or not original to a period of early use—that might stand in the way of musical objectives. Hence, restoration of an historical instrument to be a functioning musical instrument has often resulted in substantial sacrifice of the instrument as a document.

This past has left us few instruments that can be considered complete “primary documents.” Ironically, an instrument can be a musical derelict but a pristine and perfectly complete document. In the long term, the unrestored instrument (or document) has the capacity to spawn much more authentic reproductions than does a playable antique which has been compromised by heavy-handed restoration and heavy musical usage.

Every museum has a unique role according to its charter and the nature of its collections, but among major museum associations, there is consensus about the primary purpose and obligation of all museums—to preserve the historical collections entrusted to their care.³ Willful sacrifice of the physical and historical integrity of musical instruments for the sake of hearing them played is thus clearly a violation of accepted standards of museum ethics, regardless of any educational or artistic goals that may be addressed in musical performances.

Still, there remain strong arguments against relegating historical musical instruments permanently to the silent, air conditioned dimness of museum display cases.

The tradition of playing old musical instruments has been around ever since there have been old musical instruments to play. The eighteenth-century French school of harpsichord making was founded on the remodeling of the celebrated Flemish harpsichords made a century earlier. Instruments of the violin family have had a strong and

2. R.K. Lee has initiated a preliminary study of wear patterns measured on old keyboards. The results are published in “Observations on the Wear of Two Keyboards Separated by 200 Years,” *FOMRHI Quarterly* 55 (April 1989): 37.

3. See, for example, The American Association of Museums, *Museum Ethics* (1978): 14.

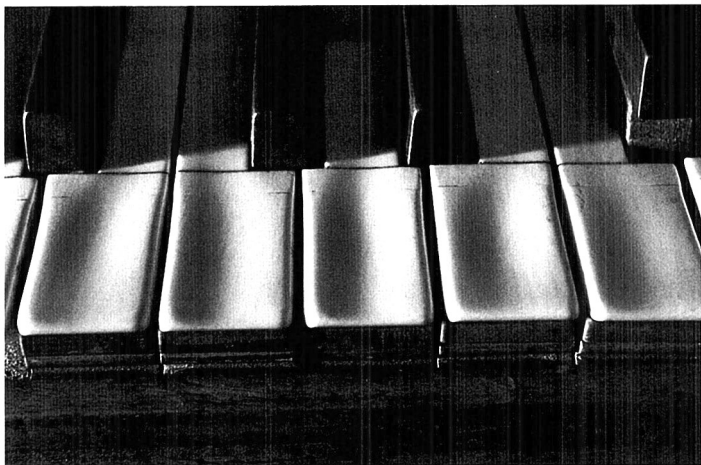


FIGURE 2. Erosion patterns in ivory key tops caused by the early users of an antique instrument can be useful evidence of historical playing technique. The few remaining instruments that retain such unspoiled information have the most to tell us and have the most to lose from modern musical use.

unbroken tradition of use by history's preeminent string players that has meant, for the finer instruments, restorations and modernizing alterations at regular intervals. Today, violins, violas, and cellos from the late seventeenth and eighteenth centuries are the instruments of choice for the most serious stringed-instrument performers, whether they play Purcell, Mozart, or Prokofiev.

Sensitively restored harpsichords and fortepianos can also speak with a clear authoritative voice, and their legitimacy as uniquely appropriate for early music performance has widespread acceptance. Large organs are often part of a building with a social function and responsibility, and so have almost always been restored rather than replaced with reproductions.

The unique character of each musical instrument contributes so much to the artistic whole of any performance played upon it, that playing historical examples is often an awesome artistic experience. Playing

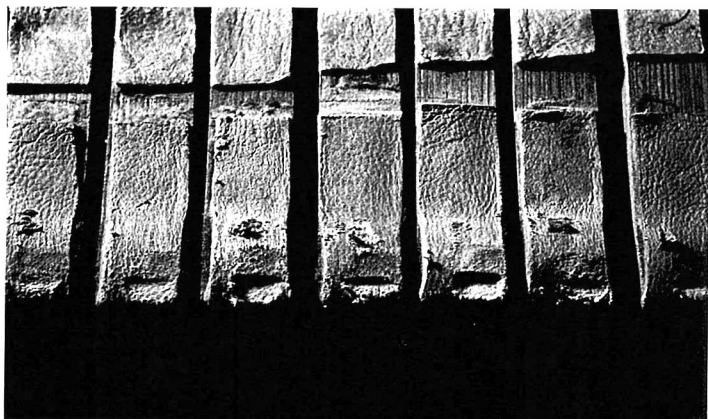


FIGURE 3. The original leather coverings on the upper manual key ends of an eighteenth-century English harpsichord show the deterioration of leather where the key bears against dogleg jacks. Playing the instrument accelerates the damage while replacing the leather diminishes the historical integrity of the instrument as a “document” of eighteenth-century harpsichord making.

Beethoven on an early nineteenth century piano, one cannot help imagining the day when the same instrument took part in the creative process of Beethoven’s contemporaries if not the composer himself. This represents a profound opportunity to step into a dimension of the cultural landscape from which the music originated.

This brings us to the principal reason why old instruments are used in performance. We do not know exactly how music of the past was interpreted, how musical ornamentation was applied, what tempos were used, what music was performed in which settings, or how regional customs might have affected all of these things. The uncertainties abound—except one. We still have some actual period instruments. We would like to think that the question of instrumental sonority can be checked off the list of riddles we must solve in the quest for a more historically informed performance.

It is not that simple, of course. In fact, it is generally agreed that the aging of musical instruments for two or three hundred years certainly

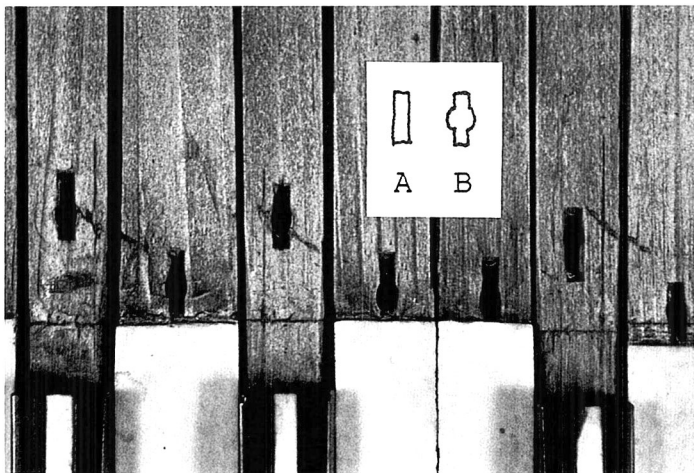


FIGURE 4. The balance pin mortises in the keys of this 1727 Cawton Aston spinet were originally rectangular (A) but are now deformed (B) from the abrasion of the balance pins against the sides of the mortise during use. This condition causes keyboards to feel “rickety.”

effects their sound. It is argued, therefore, that any pretense of playing old instruments for achieving some ultimate “authenticity” of sonority is indefensible since time has, to some extent, changed the acoustical character of the instrument. Moreover, in instruments with mechanical components, the wear and resulting sloppiness in the action causes action noise—knocks, clicks and thumps, not to mention a rickety feel for the performer—all of which was unknown to the original makers and players of the instruments.

Yet, why do musicians and even some museum professionals remain not only tolerant but somehow charmed by these age-inflicted defects? Here, our visual aesthetic can instruct our acoustical aesthetic. The time-altered tone, the action noise, these so called “defects” in old musical instruments are the acoustical counterpart to the visual defects in the decorative arts we call patina. Patina is the physical evidence of historical use inscribed on the surface of an artifact. Patina authenticates the object as an historical document, while contributing to its beauty. It is natural

that old musical instruments do not sound exactly as they did when they were new but a little "acoustical patina" is to be expected, and perhaps appreciated.

* * *

Thus, the arguments for restoring and playing old musical instruments and the opposing arguments for silencing them for the sake of preservation are powerful arguments indeed.

Over the years, museums have experimented with a range of solutions, many of which overlook the complexity of the problem. Two oversimplified solutions are often proposed, or implemented by default. The first oversimplified but still common solution is, in effect, to look the other direction; to allow a double standard whereby functioning musical instruments are subjected to relatively intrusive restoration in order to be subjected to the intensive handling necessary in musical performance, while other artifacts of comparable age and cultural significance are treated with a far higher standard of preservation.

Fueled by the absurdity of the double-standard solution and reactionary to it is to deny all restoration for musical use, retaining all original instruments exclusively for preservation and physical study. The American Institute of Conservation of Historic and Artistic Works (AIC) requires of conservators "unswerving respect for the aesthetic, historic and physical integrity of the object."⁴ In museums, where most objects are perceived and judged by their appearance, "aesthetic integrity" is usually thought to refer to the visual qualities of the objects. In the museum environment, musical instruments are often treated as decorative arts objects as well, and so are sometimes thought to be fully "readable" by placing them on public view.

Musical instruments, however, stand at the intersection of the decorative arts and the performing arts. The decorative arts exist to inform and amuse the eye, and music exists to inform and amuse the ear. Denying all musical instruments that substantial part of their aesthetic character which is acoustical and musical for the sake of physical preservation thus raises ethical questions about our preservation of their aesthetic integrity.⁵

4. The American Institute for Conservation of Historic and Artistic Works. *Code of Ethics and Standards of Practice* (1979, Amended 1985), Article II A.

5. This was the point of a paper presented by the author at the American Institute for Conservation Annual Meeting in Richmond, Virginia, June 1990 and published in abstract

Should antique musical instruments sometimes be treated as functioning musical instruments? Are they historical artifacts deserving of our most determined preservation efforts? A conclusion will be drawn based upon the assumption that the answer to both of these questions is "yes."

The following is a rationale by which a minority of representative musical instruments may receive minimally intrusive restoration and judicious musical use in order to preserve and exhibit the aesthetic integrity unique to this class of historical artifacts, and that such restoration and use must be undertaken without significant compromise to the instrument's physical or historical integrity as mandated in accepted codes of museum and conservation ethics.

As we have seen, restoration can severely compromise the historical integrity of old instruments. We need to be very discriminating in our selection of the instruments that can be expected to survive restoration without significant threat to their physical integrity. A checklist of qualifications by which an instrument may prove eligible for restoration would include such criteria as the rarity of the instrument, its historical integrity, its completeness, its condition, its prospects for serious musical use and intended frequency of use, its prospects for responsible ownership, the musical requirements it is expected to fulfill, and the prospects for ongoing maintenance.⁶

Having applied such criteria, there remains a subset of musical instruments that are candidates for restoration. These are the representative instruments through which we will preserve and exhibit the aesthetic qualities that are unique to all musical instruments. This status should in no way excuse us from respecting the original material and physical evidence that remain in such instruments.

The most dangerous moment in the life of any historical object is when it enters a restorer's workshop. The kind of damage wrought by traditional restoration procedures has already been described. Restoration, however, can alternatively be based upon respect for the historical evidence remaining in the instrument and undertaken under the terms

form: John R. Watson. "Balancing Physical Integrity with Aesthetic Integrity: Ethical Problems in the Conservation of Musical Instruments," *Abstracts* (A.I.C. 1990): 18.

6. Scott Odell of the Museum of American History, Smithsonian Institution, deals with the criteria for treatment and use of functional artifacts in "Clocks and Musical Instruments: Must Functional Objects be Made to Function?," a paper presented at the conference "Horological Conservation and Restoration," United Kingdom Institute for Conservation, National Maritime Museum, Greenwich, 28 July 1986.

of accepted conservation codes of ethics. Such minimally intrusive restoration depends upon a range of technologies, procedures, and considerations not encountered in traditional repair or instrument-making work.⁷ Even in the context of a modern conservation laboratory and in the hands of a trained conservator, it is often very difficult or impossible to restore an old instrument to playing condition without serious threat to original material and workmanship.⁸ The selection of a qualified conservator therefore is critical.⁹

Among the chief obligations in restoration is that of written and photographic documentation, including the recording of evidence for any reconstruction of missing elements and the safe labeling and storage of removed material. How threatening is the removal and storage of ephemeral material to the physical and historical integrity of an artifact? If the historical record can be converted from the tangible to the written and photographic—that is, documented—then the integrity of the historical record after restoration is precisely equal to the care and sophistication applied to its documentation. We should not be too optimistic about our ability to identify important details for documentation. Experience has repeatedly shown us that there exists vulnerable evidence which we have not yet recognized as such, and which future studies and analytical technologies will render readable. The principle of reversibility remains central to the ethical practice of conservation, but this constantly increasing perceptivity is why we can only talk about “minimally intrusive” restoration and not “non-intrusive” or “reversible” restoration.

An increasingly obligatory solution for pianos and harpsichords is to fit them with reproduction actions. By so doing, it is possible to play the instrument virtually without threatening any original material. All of the

7. See Cary Karp, “Technological Research and the Conservation of Musical Instruments” in *Per Una Carta Europea del Restauro*, L.S. Olschki, ed. Società Italiana di Musicologia (Florence, 1987): 283–89.

8. This is illustrated by Robert Barclay who describes the most common procedures used in the restoration of brass instruments—reshaping, soldering, and polishing—and examines the irreversible alteration of original material caused by them. Since brass instrument restoration is so dependent on these inherently intrusive procedures, he concludes, “Each instrument requires a unique treatment protocol where the degree of intervention must be weighed against such factors as the [instrument’s] historical value and cultural significance.” Robert Barclay. “Ethics in the Conservation and Restoration of Early Brass Instruments,” *Historic Brass Society Journal* 1 (1989): 79.

9. A helpful pamphlet is available from the AIC: Shelly Sturman, *Guidelines for Selecting a Conservator*, The American Institute for Conservation of Historic and Artistic Works (1987). A.I.C. Suite 340, 1400 16th Street, N.W. Washington, DC 20036.

points of abrasion in stringed keyboards are confined to the action. Fitted with a reproduction action, an old harpsichord or fortepiano can be played without abrasion to old material. Moreover, the instrument remains original in all tonal aspects, while responding to the musician's touch without mechanical ricketiness.

Once restored, the greater burden of responsibility shifts to the owner of the instrument (private or institutional) and the musicians authorized to play it. Even when available in playable condition, old instruments should not be used when reproduction instruments are as much or more appropriate under the given circumstances. Substantial compromises of performance practices, instrumentation, or venue disable the historical integrity of the performance, rendering the handling of an antique instrument imprudent.¹⁰

Are the claim to use and the obligation to preserve old musical instruments mutually exclusive objectives? Antique musical instruments, especially those retaining substantial historical integrity, are a non-renewable and diminishing cultural resource—an endangered species. If we allow preservation to be secondary to musical performance, the legacy will be spent, the species extinct. Based upon the accepted codes of museum and conservation ethics, our first objective should be to protect the physical integrity of historical instruments. That is the more long-term of our dual objectives. To the extent that we can without significant compromise of physical integrity, we may also act upon a respect for the acoustical function or “voice” of musical instruments. This is to say that these two sometimes conflicting objectives are hierarchical and not coequal.

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10. Other considerations for the handling of antique musical instruments are beyond the scope of this article. The subject has been thoroughly treated for museum collections by the International Committee for Musical Instrument Collections of the International Council Of Museums (CIMCIM). See “Recommendations for Regulating the Access to Musical Instruments in Public Collections,” *ICOM News* (Vol. 39, No. 3, 1986): 5–8.

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