The Stradivarius and the DC-3

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ABSTRACT

This paper explores the pragmatic and aesthetic aspects of the use of historic objects, with particular emphasis on musical instruments.

Transformation of objects through regular maintenance, substitution of worn parts, changes in fashion, and restoration procedures is contrasted with the aesthetic experience derived from the objects' use. The paradox of restoration is examined, where intervention is inevitably accompanied by conjecture. The paper concludes with a discussion of psychological strategies evoked to ensure that knowledge of the extent of transformation of the object does not diminish or detract from the aesthetic experience.

Introduction

When musical instruments are ensconced in display cases, are they: "Ignorantly deposed from their sovereignty over our emotions?" Or, if they appear on the concert stage in fully working condition, are they: "Played to destruction for the purposes of ephemeral delight?" These two extreme views capture the dilemma of the musical instrument curator and conservator: how much to restore, how much to use, and when to preserve. When considering such issues, musical instruments are no different in essence from aircraft, costumes, books and the endless range of other objects that must be used in order that their function can be fully expressed.

When we play a historic violin or fly an antique aircraft, what do we gain from the experience? Clearly, we are using these objects to bridge the emotional gulf between "here and now" and "there and then." We are, figuratively speaking, trying to make a spark jump. Conservator John Watson of Colonial Williamsburg has put this very well regarding historic pianos:

> Playing 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.[1]

This is a very evocative quotation, and reminds one of Alice passing through the looking glass into a totally new set of experiences. But, an object can only provide this aesthetic experience if it is genuine, or is perceived to be genuine. Otherwise, the experience is merely informational in content. In fact, the less one knows about the state of a historic object, the more likely it is that the experience will seem "authentic." So, how much transformation can be accepted, and under what circumstances?

Transformation

When we hear a historic violin or fly in an antique aircraft, what do we actually experience? We know that objects become transformed with use. Take, for example, the famous axe in figure 1.

This could be the axe that assisted George Washington in establishing his probity when confessing to

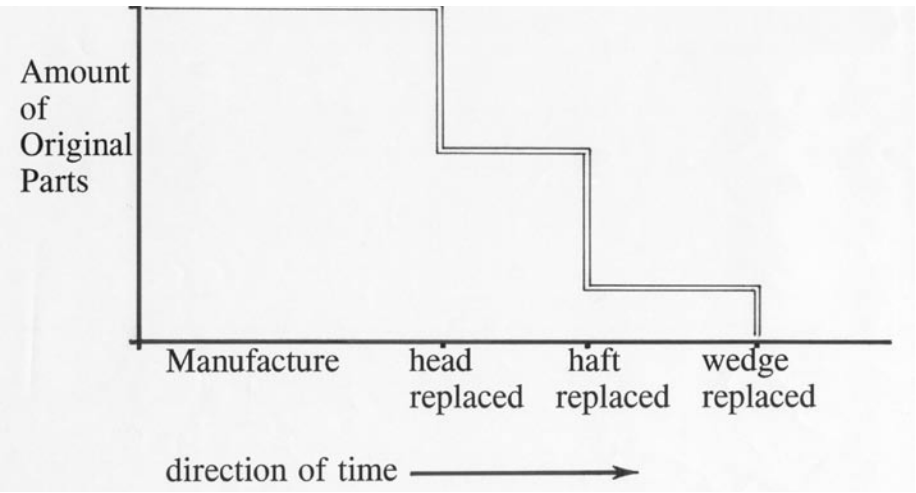

Figure 1. The famous axe that has had its head substituted and its haft replaced, while the little wedge that holds the two together has deteriorated or become lost. Yet it is still the genuine article.

the cherry tree incident, or it could be William the Conqueror's battle axe (assuming he had one) if you take your cultural cues from across the Pond. What we see here is the *reductio ad absurdum* where the entire object becomes a copy of itself. At first sight this is laughable. But is the continuation of an object's life long after it has been totally replaced as absurd a suggestion as we first think? Regularly every late spring a group of hockey players from some American city that hasn't seen a frozen pond since the late Pleistocene, and encounters ice only in its drinks, will hoist the Stanley Cup onto their shoulders and skate it around their rink. Not one scrap of that trophy dates back to Lord Stanley's original bequest. It is entirely a copy of itself. The drums were added incrementally so the teams could have their rosters engraved on it, and the cup became so battered with the annual hoisting and boozing that it was replaced with a copy in 1969 by a Montreal silversmith. The original resides in the Hockey Hall of Fame in Toronto. But all this hardly alters its impact as a very powerful icon.

What this implies is that the feelings we have for objects are actually independent of the materials from which they are made. The object has the power to accrete ideas, impressions, emotions, and so on. And we, as a society, have felt this for a long time. The holy relics like the Shroud of Turin and the Fragments of the True Cross, tell us that our fixation with material, tangible objects is very old indeed. But at the same time, and almost paradoxically, the very material of the object is mutable. In the 19th century, art historian and social critic John Ruskin explored this. Here is what he said about certain historic buildings in Venice:

> In many instances, the restorations or additions have gradually replaced the entire structure of the ancient fabric, of which nothing but the name remains, together with a kind of identity… the Will of the old building asserted through them all, stubbornly, though vainly, expressive.[2]

This is how it was expressed quite romantically in the 19th century, but it is still very true today. We can still recapture all the old feelings we had about an object, without ever knowing how much of it really is there. Ruskin called this ability to clothe objects with aesthetic attributes the "pathetic fallacy:"

> The difference between the ordinary, proper, and true appearance of things to us; and the extraordinary, or false appearances, when we are under the influence of emotion or

Figure 2. A Douglas DC-3 of Air North, first flown by the US Army Air Service Corps in 1943.

> contemplative fancy; false appearances, I say, as being entirely unconnected with any real power of character in the object, and only imputed to it by us.[3]

I refer to this as the teddy bear syndrome. Teddy bears are probably the most powerful carriers of the emotions and experiences of their little owners. You do not throw away an old teddy bear and replace it with another one, as you would with a blender or a toaster. And we all know that when a teddy bear is lost, the result is agonizing—for adults as well as children.

A few years ago I flew up to Dawson City in a Douglas DC-3 (fig. 2). I was able to peep into the cockpit during the flight. On one side of the door there was an aluminum label riveted in place. It said: "US Army Air Service Corps 1943." It was a great aesthetic pleasure for an aeroplane enthusiast to travel in a plane of that vintage. But then, being a cynical museum conservator, I began to think, just how much of that plane actually dated from 1943? Certainly, the engines were not that old, neither were the landing gear or all the controls. The interior had obviously been refitted, many or all of the mechanical parts and instrumentation had been upgraded or replaced; the list went on. The fuselage of the machine, to which the label was attached, clearly dated back that far, but without access to thousands of pages of service manuals it was impossible to say what percentage of that DC-3 was actually flying in 1943. But, significantly, the aesthetic appeal was diminished by this knowledge.

The same set of circumstances surrounds the Cremona violin (fig. 3), and other musical instruments that have had long periods of continuous use. One cannot keep an object made, in part, of thin softwood under tension in working

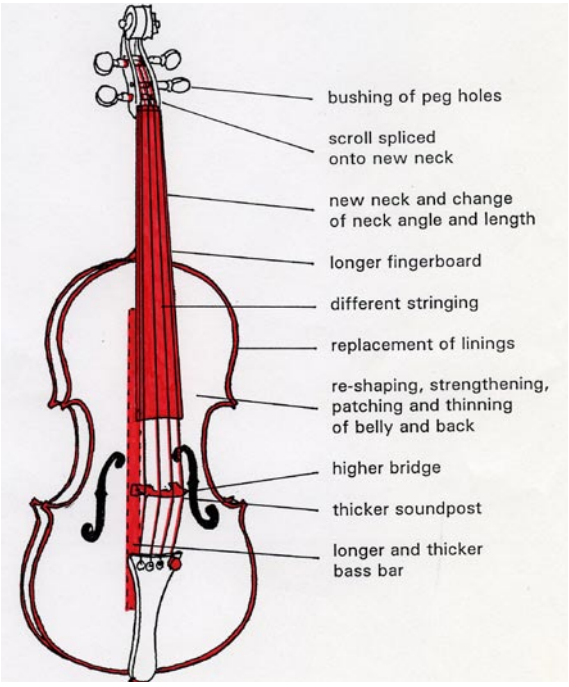

Figure 3. Diagram of a violin showing all the parts that could have been changed or substituted. If the steaming and reshaping of the belly is included, the entire instrument would be shaded.

condition for 300 and more years without massive intervention, not just in maintenance, but also in alterations due to changes in musical fashion. Not one existing Stradivari violin has its original neck; all were renecked at the beginning of the 19th century to reflect an all-encompassing reworking of the entire orchestra during the Romantic period.[4] This reworking also transformed the instruments acoustically, to the extent that their sound today is indistinguishable from that of modern-made instruments (despite the aficionados who argue to the contrary).

Conservators and conservation scientists have a natural disposition towards preservation of the materials of fabrication of historic objects. This is well and good, but it should not be allowed to exclude preservation of the tradition of function. An object, such as a classic Cremona violin, that has been in constant use for over three centuries, has been transformed to the point that preservation of its continuing tradition of use is far more important than preservation of those few materials in its constitution that happen to exist in unchanged form. Thus, for those transformed objects we need to concentrate much more on the ways and means of keeping them working, and less on preservation for its own sake. We need to practice what John Watson refers to as restorative conservation, respecting the stories that the remaining materials can tell us, but also encouraging the aesthetic appreciation of the object in its context.

Making Decisions

When the potential for active function of historic objects is considered on a case-by-case basis, it is possible to reconcile the conflicting demands of preservation and operation. With careful selection, deep knowledge of the collection and its potentials and drawbacks, it is possible to have your cake and eat it too.

In order to work a piece of machinery without risking its safely, or to wear a garment without damage, to turn the pages of an ancient book, or to perform any of a number of functions that we might demand of objects—and to do so with little detriment to their historic and technical qualities—it is necessary to know a great deal about them. How important is this example to the history of objects of its kind? Is it a type specimen, of which it is the only one extant, or are there others elsewhere? Has it been changed, or is it in a new and original state? And what effects will there be from making it function? It is necessary to know the vulnerabilities of the object, what damages it may have sustained, and how strong it is. A systematic approach to questions like this will result in a firm and well-founded justification for action. The following discussion is adapted from work previously published by this author.[5 6]

Table 1 shows three specific aspects of historic objects—rarity, fragility and state—and assigns gradations to them:

A rating system using stars (from 5 for the highest to 1 for the lowest) helps to visualize the categories, and thus allows us to begin framing questions about the functioning aspects of historic objects.

Table 1. Matrix of rarity, fragility and state

Rarity	Fragility	State
unique	highest	perfect
rare	high	original
historic	medium	used
common	low	altered
replaceable	safest	transformed

Tables 2, 3 and 4 give brief explanations of the categories and what would be expected in the gradations within each.

Table 2. Typical texts for the rarity category

Rarity	**Rarity requires an extensive knowledge of the object and its place, both in the collection that holds it and in other collections**
Unique ★★★★★	**The only example of its type, an example from a famed maker, or with a well-documented association with a particular historic event or personage.**
Rare ★★★★	**One of a few examples of its type, or associated with a particular historic event or personage.**
Historic ★★★	**Relatively scarce, and having some historical value, but not associated with a particular event or personage.**
Common ★★	**One of many extant, but no longer in production.**
Replaceable ★	**One of many extant and still in production.**

Table 3. Typical texts for the fragility category

Fragility	**Fragility must be assessed by personnel with expertise in the objects under examination and a knowledge of deterioration mechanisms**
Highest ★★★★★	**Will certainly be damaged by use; e.g. machines with corroded or loose components, badly degraded textiles, fragile paint surfaces.**
High ★★★★	**May be damaged by operation, even by skilled personnel. Use has a level of unpredictability.**
Medium ★★★	**Relatively durable, but should still be operated or used by skilled personnel and treated carefully.**
Low ★★	**Durable object that can be operated or demonstrated without concern, although still under the watch of skilled personnel.**
Safest ★	**An object that may be used by members of the general, museum-visiting public, but under museum staff supervision**

With knowledge of the object gained from research and consultation in these three categories it is possible to develop a scoring system. Scores between 1 and 5 stars are assigned in each category and then added together, giving a maximum of 15 and a minimum of 3.

The resultant star rating provides a key to the extent of use an object can sustain. Star ratings can be interpreted as follows:

15 to 13 Stars – Prize Objects

15. There are no circumstances under which the object should be operated or used.

14. The object may only be operated or used under exceptional circumstances and for a limited time. It can only be used under close supervision, and after expert assessment of its condition and the potential yield of information gained from its use. The operator/user must be able to demonstrate a

Table 4. Typical texts for the state category

State	State refers to the amount of original parts that the object contains, and the degree of replacement or repair that it has undergone
Perfect ★★★★★	No traces of use, no damages or repairs, all components in place, and all parts original.
Original ★★★★	No damages or repairs, all components in place, all parts original, while obviously used but well maintained.
Used ★★★	Obviously used and with traces of repair and maintenance, and some parts not original but consistent with earlier state.
Altered ★★	Essentially fulfilling its function, evidence of heavy use, and significant amount of replaced parts.
Transformed ★	Functioning but in non-original state, with many parts replaced, especially those that contribute to the unique identity of the object.

Table 5. The star rating

Star Rating	Rarity	Fragility	State
★★★★★	unique	highest	perfect
★★★★	rare	high	original
★★★	historic	medium	used
★★	common	low	altered
★	replaceable	safest	transformed

familiarity with the object. A high quality recording should be made of the session.

13. The object may only be operated or used under exceptional circumstances but for a longer duration, under supervision, and after independent expert assessment of its condition and the information gained from its use. The demonstrator/user must demonstrate a familiarity with the object. A high quality recording should be made.

12 to 10 Stars—Very Significant Objects

12. The object may be operated or used more frequently, under supervision, although duration should still be limited. Such limitation can only be assessed on an individual basis and relies upon accurate and complete documentation of condition before and after use.

11. The object may be demonstrated or used more frequently, and with sessions of longer duration. Familiarity with the object is still necessary for the demonstrator/user.

10. The above requirements may be relaxed slightly. Expert assessment of the information to be gained through function is still desirable but not essential.

9 to 7 Stars—Significant Objects

9. The object can be demonstrated or used frequently, and for fairly extended periods. There is less need to establish the value of information gained.

8. Regular demonstration and use of the object can be maintained, although it should still be operated under supervision. Users should still be required to demonstrate expertise on the type of object.

7. As for the above, but use need not be supervised.

6 to 4 Stars—Run-of-the-mill Objects

6. Unsupervised use is the norm, although regular monitoring should be done.

5. The user does not need to be an expert in the object, but must demonstrate a familiarity with historic material.

4. The object may be used unsupervised by museum visitors unfamiliar with its capabilities.

3 Stars—Insignificant Objects

3. Objects with this score tend to be useful for interactive purposes, and are essentially disposable. They should not be considered as heritage material.

Naturally, this is a model protocol; its successful application depends upon the particular demands of any specific historic object or collection to which it is applied, and to the particular circumstances under which the application is made. Also, one must be aware of the fact that decisions made early in the process should be revisited as familiarity with the system increases. Also, objects tend to rise in the categories with time; a familiar and common object today may not be so in future decades. As an example, consider the common and readily available electronic keyboards of the 1970s, and their relative scarcity in good condition at the beginning of the 21st century.

Conclusions

No two objects can be treated equally. Assessment of the risks involved in making historic objects function can only be done on an individual basis. In many collections where function of the objects is practiced and encouraged, decisions are often made in a less than systematic fashion. While the custodians of the objects may well be conversant with the rarity, fragility and state of individual items—and can thus make intelligent and thoughtful decisions—justifying these decisions to others is sometimes problematic. A protocol like the one described above allows objective judgements to be made, and provides custodians with very useful tools in justifying courses of action. Ultimately, it is the role of curators, conservators and collections managers to explore ways of making historic resources more accessible; in effect, striving "constantly to maintain a balance between the need in society to use a cultural property, and to ensure the preservation of that property."[7]

Notes

1. Watson, John, 'Historical Musical Instruments: A Claim to Use, An Obligation to Preserve', *Journal of the American Musical Instrument Society*, 17 (1991), pp. 69-82.

2. Ruskin, John, *The Stones of Venice,* (Orpington, Kent: George Allen, 1886) vol.1, p. vii.

3. Ruskin, John, *Modern Painters*, 3, XII (New York: John Wiley and Sons, 1879) p. 154.

4. One violin ascribed to Stradivari, *Le Messie*, has its original neck. However, the circumstances surrounding its 'acquisition' by arch restorer, dealer and faker Jean-Baptiste Villaume leave those less entrenched, and perhaps more cynical, observers in some doubt as to its authenticity.

5. Barclay, R. L., *The Preservation and Use of Historic Musical Instruments: Display Case and Concert Hall* (London: James & James/Earthscan, 2004).

6. Barclay, R. L., 'A Decision-making Protocol for the Use of Historic Musical Instruments', *Journal of the Canadian Association of Professional Conservators,* Vol. 29, 2004, pp. 3-7.

7. Canadian Association for Conservation and Canadian Association of Professional Conservators, *Code of Ethics and Guidance for Practice* (Ottawa: CAC and CAPC, 2000), p. 1.