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### ► To cite this version:

Marie-Anne Loeper-Attia. The conservation and restoration of extra-european musical instruments at the musée de la musique in Paris. Annual Meeting of the International Committee of Musical Instrument Museum and Collections. CIMCIM 2011, Aug 2011, Tervuren, Belgium. hal-04448738

**HAL Id: hal-04448738**

**<https://hal.science/hal-04448738v1>**

Submitted on 19 Feb 2024

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## THE CONSERVATION AND RESTORATION OF EXTRA-EUROPEAN MUSICAL INSTRUMENTS AT THE MUSÉE DE LA MUSIQUE IN PARIS

Marie-Anne Loeper-Attia<sup>1</sup>

### INTRODUCTION

The challenge of the conservation/restoration of ethnographic objects (including extra-European instruments) has to do with their degree of integration, or lack thereof, into our system of cultural values. The originality of these objects draws on the questions they cause us to pose through their characteristics (form, materials, etc.). A consensus needs to be found between what these objects represent in the societies which created them and the image that these objects give to conservation/restoration personnel and to the general public. Therefore, when working with these instruments, it is essential to embrace a study and conservation approach, with the curator concerned by the former, and conservators/restorers by the latter.

### THE EXTRA-EUROPEAN MUSICAL INSTRUMENT

In the museum, the extra-European musical instrument gives us insight into the society which invented the instrument in question, as well as into the system of values of the society which introduced it. In fact, the instrument's purely instrumental function per se is often overlooked – at best it is merely documented, at worst entirely ignored – to focus exclusively on the visual aspect of the instrument. The proposed methodology has a duty to retain the technical information; this requirement frequently makes the scrupulous conservation of the complete instrument necessary. The technical conditions behind the original creation of the instrument are but rarely documented, both as regards the original history (piecemeal or deformed information) as well as regards the material, which is not known with accuracy.

As regards the instruments, one notes a wide variety of

- geographical origins;
- materials and means of assembly;
- functions and utilizations for the instruments in their original society.

Replacement materials have always been used, even when the instrument was still in use. For example, in order to keep in step with musical practices, nylon threads, wound audiocassette tapes or steel wires were often used to replace a cord. And, in keeping with this spirit, metal wires or plant fibres are used with similar winding techniques in order to repair cracked sound boxes. (Figs. 1 and 2)

For this type of heritage, as for ethnographies, prevention is essential. Problems encountered cannot be resolved using a long-term perspective; instead, emergency measures are taken owing to the particular responsiveness of the materials used and to the fact that the instruments are fragile since they bear testimony to everyday life or were designed in the first place to be ephemeral.

It is important to know the original characteristics of an instrument and detect



Fig. 1. Reinforcement of the broken gourd with plant fibres. (Photo © Marie-Anne Loeper-Attia.)



Fig. 2. Reinforcement of the crack in the gourd with metal threads. (Photo © Marie-Anne Loeper-Attia.)

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Fig. 3. Bala xylophone, E.386, Senegal, 19th century. Musée de la musique. Xylophone after cleaning of the surface with artificial saliva. (Photo © Marie-Anne Loeper-Attia.)



Fig. 4. Banza lute, E.415, Haïti, before 1841. Gift of M. V. Schoelcher, Musée de la musique. Handwritten inscription on the skin of the lute. (Photo © Marie-Anne Loeper-Attia.)



Fig. 5. Different drums using various skins and wood types in the storage rooms of the Théodor Monod museum in Dakar (Senegal). (Photo © Marie-Anne Loeper-Attia.)

signs of successive modification phases, quite simply because the end condition of an instrument may well bear witness to its cultural rather than its musical history. As an example, the various layers of deposits on this xylophone (Fig. 3) could correspond either to maintenance phases (oil layer) or to external pollutants (soot, dust, concrete powder). Conservators had to identify each of these individual layers before setting to work. The inscription that can be seen on the skin of this Banza refers to how it was collected by Victor Schoelcher; in other words, it is a reference to a post-usage history (Fig. 4).

One notes that, essentially, the same materials are used as for other instruments (wood, skin, bone, horn, metal), but with a wide range of origins.

One also notes the various adhesives and surface finishings: lacquer, coloured varnish, oil, particular assembly modes (Fig. 5).

Documentation about these extra-European stringed instruments, such as this term would be used in Europe, is scarce to nonexistent. We are especially short on information on the operating conditions. Moreover, one notes a very extensive range of surface finishes, which in turn depend on how the instrument was previously conserved. As a case in point, one need only consider works from private collections which have often undergone more renovation, giving them a newer, ‘smoother’ finish, and comparisons with similar instruments from public collections are often striking. Indeed, such comparisons can frequently complement each other, with the general public preferring the renovated, more ‘informative’ version and the specialists preferring the instrument closer to the original.

## CONSERVATION/RESTORATION TREATMENTS

### Principles

The question of the degree of intervention – a variable between zero and a complete overhaul of the instrument – only makes sense if posed with respect to a previous state. With material knowledge of the instrument, conservators can understand the degradation processes, and come up with appropriate measures in response.

The alterations encountered can be significant and rather varied, and often require an emergency response. For example, parts made from tropical wood can often have cracks and high stresses, due to the fact that these species react adversely to European climates even several years after reaching Europe. The same holds for stretched skins and other powdered or painted coatings.

Good practices as applied to the preservation of the original materials, interpretability, and reversibility guide the interventions. Reversibility can be applied at three levels:

- the mode of use of the restoration product (impregnation, coding, etc.);
- the purpose of the intervention (structural effect or not);
- the nature of the material proposed: mechanical or chemical resistance.

It is important that meaning be re-impacted to these objects; it may well be that a policy of minimum intervention, comparable to abandonment, is insufficient, in which case a certain level of intervention is necessary. The type of intervention can also be influenced by the rareness of the instrument. In the case where an instrument is the only one of its kind still extant, it can be considered as representing an entire corpus of knowledge. In this case, a small-scale intervention may be the best answer to give the instrument its readability, visibility and integrity. For example, wood splinters do not necessarily have to be sealed, thus leaving the wood free to move. By contrast, if several such instruments exist, then we can carry out several interventions





Fig. 6. Storage of an Asian instrument in polyethylene and fabric (Tyvek), storage room of the Musée de la musique. (Photo © Marie-Anne Loeper-Attia.)

spanning the gamut from practically zero intervention to making the object entirely functional. In this case, several criteria can be used to define the level of intervention:

- the status of the instrument: if there is relatively little point in putting the instrument on display but the instrument has a high level of value as an item of documentation, then the intervention is kept to a minimum, consisting essentially in stalling the effects of time and degradation.
- the usage value of the instrument: here, the material nature of the instrument is the deciding criterion, dictating the limits of the restoration treatment, since the instrument needs to have certain levels of physical resistance to withstand the intervention.
- the cultural origin of the instrument and the intent of its initial designer.

These factors are also essential since they contribute to the globality of the instrument just as much as the material aspect of the object does.

As can be seen therefore, the concepts of 'intervention' and the nested concept of 'minimum intervention' vary according to those features which make the given instrument noteworthy. The degree to which an intervention can be considered 'minimum' or not is not decided in a vacuum; it all depends on the context. Therefore, the intention of the person behind the restoring must be 'minimal' whilst respecting rules and limits set.

In general, given the range of materials encountered, restoration work calls on several specialties, and indeed restoration teams frequently count 3 to 4 specialist restorers: textiles, wood, leather, paint, etc.

#### **Preventive conservation interventions:**

For heritage objects of this type, prevention is essential and makes it possible to anticipate the major alterations which occur, given the absence of time with respect to the sheer volume of objects in peril and the responsiveness of their materials, as mentioned above. This is why the principles of preventive conservation and all the related preservation protocols are so important to the museum's conservation policy.

Such protocols include:

##### *Climate control*

The instruments are stored under conditions of relative humidity of 55% ( $\pm 5$ ) and at a temperature of 20°C ( $\pm 2$ °C). The climate is regularly controlled, both in the exhibition areas as well as in the storerooms.

##### *Measures against wood-eating termites*

This consists in pheromone traps and fluorescent lamps installed in the storerooms.

##### *Handling instructions*

This consists in learning how to safely handle these instruments. For example, gloves are mandatory to avoid contact between human hands and parts of the instrument covered with wood varnish or powder coating. The tension of the strings is checked so as to never store an instrument with excessively tight strings, which would necessarily lead to destructive stresses in these highly reactive materials that are skin, wood, and leather. The extent to which the strings are loosened depends on the required reduction in instrument fatigue. The various assembly modes, such as nesting, stapling, and connectors must also be correctly assessed prior to handling, thus making it possible to maintain all the moving elements of the instrument. For example, an instrument should never be handled solely by the handle, but also by the body.



Fig. 7. Guinbri lute E.2274, Algeria, 19th century. Gift of Henri Cesbron in 1934, Musée de la musique. Dry cleaning of the painted surface of the lute. (Photo © I. Leautey.)



Fig. 8. Zither on table, Qanun, E.1358, Damas, 18th century, acquired in 1889, Musée de la musique. Reintegration of the missing part of the zither (terminal part) with stained balsa wood. (Photo © Marie-Anne Loeper-Attia.)



Fig. 9. Skin of the lute before reinforcement. (Photo © I. Leautey.)

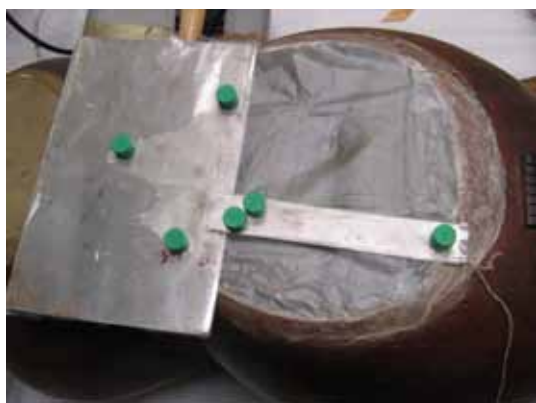


Fig. 10. Reinforcement of the skin with reintegration of new parts and fastening with glue and magnets. (Photo © I. Leautey.)

### Storage instructions:

An instrument should never be put down on its keys, bridge or any other moving part. The original case, if it exists, can be conserved with the instrument if its materials lend themselves to conservation; otherwise, it should be stored separately. Careful attention should be given to keeping away dust which, on entering into contact with some irregular or powder coatings can be very difficult to remove.

An instrument should never be stored with its skin stretched; the material should be supported to minimize compressions and tension. For example, a drum should never be stored in the vertical position standing on its skin; rather it should be put down flat, supported along its sides. (Fig. 6)

### Presentation instructions:

The same climate instructions as for storage areas are applied. The instruments should be put on exhibit on appropriate bases inside the exhibit cases, held in place with nylon strings or polyethylene single-filament strings so as not to create contact corrosion between the string and the surface of the object (if made of metal).

### Restoration interventions

We will only be considering some types of interventions, which we consider characteristic of this body of instruments.

The diversity and complexity of the maintenance and protection layers on instruments mean that much caution is called for as regards selecting cleaning products. In general, the preferred choice is dry cleaning or using slightly abrasive powders. On occasions, synthetic saliva<sup>2</sup> or a surfactant<sup>3</sup> is used. Solvents and chemical reactants are rarely used (Fig. 7).

In order to render the work done more legible, we often use an exogenous material to make sure that the reintegration is observable. This option however is only available if the instrument is not actually fit to be used, since an exogenous material could modify the acoustic properties. Since most of the instruments in the collection cannot be used in their current state, this option is frequently recommended.

To summarise therefore, the material used for an intervention must meet the following requirements:

- It must not add any element of ambiguity to the object;
- It must be easily identifiable as not being part of the instrument;
- It must have a high level of mechanical and chemical compatibility with the other materials used;
- It must not generate stresses;
- It must easily removable;
- It must be colourable.

Where there are no mechanical stresses, balsa wood is most frequently used. Beech and lime wood can also be used for shaping by turning (pins). These wood species also have the advantage of being unknown in several countries of origin, such as the African continent. The reintegration shade is often a shade lighter than the original, and is done using watercolours or acrylic, and the date is indicated on the new element.

2 Composition: 1 g of mucin dissolved in 1l of demineralised water.

3 Surfactant: Tinovetine at 1% in demineralised water (pH = 7).



Fig. 11. Skin of the lute after repair and reinforcement. (Photo © I. Leautey.)



Fig. 12. Reintegration of the fibres of a Hurruk (Musée de la musique) with synthetic fibres. (Photo © I. Leautey.)



Fig. 13. Cylindrical drum, E.319, Tahiti, before 1843, gift of M. L. Clapissou in 1864, Musée de la musique. Reinforcement and reintegration of fibres with dyed silk crepe line on the drum E.319. (Photo © Marie-Anne Loeper-Attia.)

The overwhelming majority of adhesives used, both natural and synthetic, are reversible, such as DMC<sup>4</sup>, Klucel G<sup>5</sup> or Paraloid<sup>6</sup> resin (Fig. 8)

Stretched skins are often torn. The materials chosen for restoration are either Japanese papers (Kozo, Tenguiji or Gampishi), intestine membranes, bladders (pig, cow or stillborn calf) or synthetic films such as Hollytex. The final choice depends on the translucency of the film following gluing and on its level of resistance. Consolidations and linings are either added to the visible exterior surface or to the hidden interior surface, and magnets of varying strengths are used to hold the adhesives in place. Only chemically reversed resins are used<sup>7</sup>. Coloured reintegrations use either watercolors or acrylic (Figs 9, 10, 11).

The highly precarious and piecemeal condition of lines and other woven strings has led conservators to come up with original solutions: lining with silk crepe line to re-create visual harmony and unity; inserting insulated braided sleeving. Fabric consolidations are also done using silk crepe line dyed in the mass (Figs. 12 and 13).

#### CONCLUSION

The conservation and restoration of these instruments bring a specific set of challenges, due to an absence of information regarding the materials, modes of fabrication, and usage of the instruments, as well as their history. An analysis of this information will help us glean a better understanding of the traditions underlining instrument-making. By taking into account these difficulties when saving and conserving such instruments, we in the museum present these instruments as bearing witness to a cultural identity, and as a means of comparison between musical and cultural practices spread over several geographical areas, while simultaneously underscoring the aesthetical value of these instruments.

None of this work could have been achieved without the conservation team at the Musée de la Musique, or without the participation of external conservators such as Christian Binet, Ingrid Leautey and Isabelle Rousseau. The author would like to thank them all.

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4 Acetic Acid Ethenyl Ester, Polymer with Chloroethene / Maleic acid dibutyl ester dispersed in water.

5 Hydroxypropyl cellulose.

6 Acrylic copolymer.

7 Mowilith DMC2, Klucel G, cellulose esters, etc.