"Knives Cost Lives": Ethical Issues Relating to the Conservation of a Group of Weapons at the Museum of Criminology of the Medical School – University of Athens

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The Museum of Criminology at the University of Athens provides a concise picture of the criminal actions committed during the late 19th and the early 20th century in Greece. The Museum houses among others, a small group of forty knives with improvised handles, made mostly of textile. This paper briefly report the problems encountered during the conservation of the metal and textile surfaces. In addition, legal and ethical issues concerning the conservation of these knives are discussed. Some surfaces have blood stains and other deposits, removal of which may disturb important historical elements of the original manufacturing and use of the object, including human genetic material (DNA).

Keywords: blood stains, DNA genetic material, ethical issues, improvised knives, preventive conservation

1. INTRODUCTION

The Museum of Criminology at the Department of Forensic Medicine and Toxicology at the University of Athens is one of its kind in Greece, with a collection that represents infamous crimes, such as homicides, suicides and other criminal violations that took place in Greece during the late 19th and the early 20th century. Due to the peculiarity of the exhibiting items the Museum is not open to general public. This kind of collection offers useful information to students of medicine, law and police academies in order for them to be introduced to the different areas of forensic medicine and to study, from a scientific point of view, crime in general.

The Museum's collection is mixed and consists of an outstanding number of historical guns and arms, numerous human tissue specimens (wet and dry), 12 decapitated mummified heads of infamous criminals, some canonicals used during black magic ceremonies, sufficient amount of leather shoes that indicate loss of individuals that fell from a height or accidentally electrocute themselves, considerable archival sources (photographs, magazines and letters written of mentally disrupted people), and several other criminal paraphernalia.

The collection of historical guns and arms includes almost 200 knives, swords, bayonets, daggers, as well as 40 improvised knives which have never before been researched on. The 40-knives-group constitutes weapons constructed by the owners after they had placed an iron alloy blade to an organic material handle (textile or wood). The improvised knives are of considerable importance to historians, lawyers and sociologists, since they belong to humble people that acted in an illegal behaviour and constitute a social group for which only very little information exists.

The advocacy of educational process is claimed to be one of Museum's fundamental aims. This statement explains why artefacts such as the improvised knives, that have been collected from different homicide and suicide cases, are nowadays displayed not as being works of art, but as substantial testimonies to criminal activities. Indeed the Museum aims to highlight the specific behavioural act associated with each object, emphasising on the historic value of it, contrary to its aesthetic value which remains of far less importance, for both education and science.

2. IMPROVISED KNIVES COLLECTION

The improvised knives present in the Museum of Criminology are weapons which "are manufactured" by their owners after they had combined a piece of elongated iron alloy (such as crowbars) – considered to be the blade – with fabric that served as the handle (Fig. 1). This group of weapons (40 in number) constitutes part of an exquisite collection of guns and arms that the Museum possesses.

The knives' blades are either double or single edged. Sometimes they are not even sharp, though they were used as weapons. In 6 cases the blades used were either from knives, bayonets or razors.

The knives' handles are made from strips of cheap textile materials held in the blades by either a thread or a metal wire.

2.1 Historical Information

During 1850-1950 possessing of arms was considered to be of imperative importance, due to the innate feeling of survival and self-preservation in parallel with socio-politics circumstances. Indeed, every citizen – man or woman – was always carrying at least one weapon, usually a knife. The weapons' formation and the degree of decoration on them, declared the social status and financial position of the owner, or even its intentional use. As a result, people with no financial ability to buy weapons were forced to construct theirs own, using cheap materials that they could obtain. Hence, an iron crowbar could easily and inexpensively be whetted, attaining an incisive edge. Then, the other edge (the no incisive one) was covered with some ribbons of cloth in order to work as handle.

The collection of improvised knives is considered invaluable for the Museum of Criminology, because it presents the historical testimonies for a number of homicides and suicides that took place in Greece in the past. Moreover, the collection highlights the attitude of some humble people of the Greek society of the late 19th and the first half of 20th century, who acted in an illegal behaviour which remains obscure and is slightly studied by the scientific community.

Figure 1 - The improvised knives collection been displayed in the Museum of Criminology - University of Athens.

3. STATE OF PRESERVATION

The exact diagnosis of corrosion as well as the causes of corrosion considered to be essential for conservation treatments, in order to be effective and to prevent further deterioration. Therefore, one should first establish the type of corrosion that the improvised knives are infected of.

The careful examination of objects is the first and a very important step for understanding corrosion process. Examination of the environmental conditions, in which these objects are exposed to, is also very substantial.

3.1 Improvised Knives' Corrosion

Improvised knives have never been treated before, thus, they are badly preserved, especially the fabric parts (Fig. 2).

Over the metallic surfaces there is a thin and uneven layer of iron corrosion products which partially is getting thicker. In a few objects, there are remains of paint and small holes, due to the initial use of the metallic part (i.e. the iron was a piece of a rail). Wires, that occasionally held in place the textile materials, are heavily corroded and in some cases they are completely mineralized.

The general appearance of the textile handles shown evidences of heavily deposits from dust and dirt. Corrosion products from the attached wires have been absorb by the fabric surface. Dimensions of the textiles could not be measured due to the condition and position. The textiles wrapped around the metal handles where extremely brittle, with tears and losses especially in the edges. Blood stains have also been absorbed causing physical deterioration as the surface is very stiff and fragile*.

The main concern is the presence of blood stains that cover partially both the metallic and fabric surfaces of numerous objects. Particularly on fabrics, the stains cover a great part of the surface. As for the metal, blood stains exist together with corrosion products or are covered by them.

3.2 Environmental Conditions

The improvised knives are displayed in historic wooden display cases in a museum environment that is uncontrolled in terms of relative humidity (RH) and temperature.

The display cases were made around the 1950s and

* Aging tests on cotton and silk stained with blood and analysed using Scanning Electron Microscopy (SEM), have shown that the blood could not possibly cause severe damage to the fabric especially if is stored in a stable museum environment [1].

they are remaining on display because the museum board committee has decided to keep them as an historical element of the exhibition. For indicating the appropriateness of the showcases materials, the conservators performed Oddy tests [2]. The results illustrated that all the materials tested were corrosive to the metal coupons. In order to remove corrosive materials and reduce the emission of volatiles, all display cases retrofitted during 2001 [3]. Moreover, the knives collection was placed on a Plexiglas® base inside of a wooden display case.

The annual internal ambient RH was in the range of 25-53% (average value 38%) in summer and 40-84% (average value 55%) in winter. The annual internal ambient temperature was in the range of 24-35ºC (average value 27ºC) in summer and 13-22ºC (average value 18ºC) in winter [3].

Moreover, there is proof that indoor air pollutants are present in high quantities (i.e. sulphur components, organic acids from wooden displays, preservatives from the human specimens) [4].

Figure 2 - A detail showing the state of deterioration.

4. ETHICAL CONSIDERATIONS

Dealing with the collection of improvised knives there are many aspects to be considered and among them some ethical ones.

Should the textile strips and the wires from the handles – be dismantled in order to be further cleaned or fully treated? Is it possible to reset the parts of the handles as they were? Doing so, can the conservator be accused of restoring the artefact instead of conserving it? Moreover, the conservator risks of being accused of coinciding with the artefact's manufacturer and holder, which for the conservation science is considered as unethical.

Can scraps and stains be removed by applying cleaning methods? Should blood stains, which have been absorbed by the fabrics causing mechanical damage, be removed? Especially blood stains are historical evidences on these objects that confirm that they were used as weapons. A scientific-teaching collection, such as Museum of Criminology, that presents "living" evidences of criminal activities, should consider blood stains as indisputable testimonies both for artefacts authenticity and illegal actions. Furthermore, blood stains are only presented in a small number of Museum's guns and arms, mainly over the improvised knives. Consequently, the value of the collection of improvised knives is of great importance.

The specific way that the textile strips are folded, stitched and rapped on the metal part with the presence of paint and blood stains comprise historical information that can't be extracted of objects or altered in any way.

5. CONSERVATION PLAN

Taking into consideration all the historical aspects of these unique artefacts the decision was to perform a minimum interventive treatment for both metal and fabric parts, in order not to disturb knives authenticity and condition of preservation.

Thus, people in charge should show the corresponding responsibility for maintaining the objects' physical stability. For this reason, a preservation plan has been drawn covering the following fundamental issues [5]:

- Assessment for daily monitoring the environmental conditions of the collection.
- Routine housekeeping (clean display cases, check for pests etc).
- Accessing and improving the storage of the collection.
- Documentation procedures for remedial conservation treatments.
- Building inspection.
- Designing a suitable disaster plan taking into consideration the small budget.

It should be mentioned that the conservation process had to be undertaken in situ taking into consideration the security problems facing with such a sensitive collection.

5.1 Treatment Proposal for Metal Parts

The conservation treatment of the blades includes mechanical cleaning of the surfaces in combination with the use of Ballistol-lube®, for reducing the aggressiveness of the cleaning method. Ballistol® is an alkaline, emulsifying oily lubricant and corrosion inhibitor that it is used for guns conservation.

The aim of the cleaning is to remove only parts of the heavy corrosion products. Blood stains should be cleaned partially in order to remain indicators of their presence over the metallic surfaces. The corrosion products of the surfaces with the blood stain should be collected, for further investigation to the near future. Moreover, the remains of paint should be preserved.

Final coating should not be applied. An extensive study concluded that coatings applied on metal objects may stimulate corrosion problems rather than protect surface in the specific, uncontrolled museum environment [6].

5.2 Examination of the Textile Component Materials

A major part of this initial work has been to undertake an examination of textile samples taken from various already damaged areas (splits, losses or holes) mainly from the edges of the strips. This process involved recording of fibre structure, dye and metal compound. Twenty four fibres taken from already damaged areas have been examined in the scientific labs of the conservation unit of the University of Lincoln using a polarizing light microscope, providing sufficient quantity to draw some initial conclusions on the component materials of the textiles. Three millimetres lengths of threads were taken from various damaged areas of the textiles. The samples were mounted into transparent slides in order to be ready for microscopically examination. The fibres were examined with the use of a trinocular Nikon Eclipse E400. Under 40x magnification the shape and the surface of the threads were more discernable. Photographs were taken using Nikon Coolpix 995 (3.34 MP). The characteristics of 20 samples indicated a natural fibre. They were extremely thin, flat, similar to ribbon and twisted. The existence of convolutions and small dark particles into the internal of the fibres are characteristic of fibres with plant origin confirmed cotton fibres. The characteristics of 3 samples indicate fibres of natural origin, because the surface was straight but bear transverse, some discoloration along the length was also occurred confirm that the samples where linen. Microscopic observation has also indicated one keratin based sample (Fig. 3).

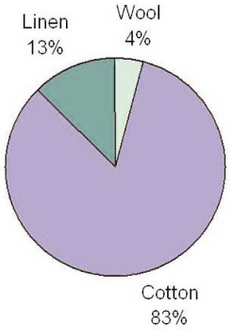

Figure 3 - Chart showing the average proportion of fibres founded in the fibre handles.

5.3 Treatment Proposal for Textile Parts

Adhesive or stitching methods repairing the fabrics, such as attaching a small backing by stitching or heat activated adhesive, would not be actually efficient to these artefacts as they require more handling and the splits are not so large for extra reinforcement. Dismantling the strips for wet or chemical cleaning will actually disturb historical information [7]. Mechanical surface cleaning is suggested to remove the dust and dirt deposits and possibly small parts of the heavy corrosion products. In order to prevent further damage and disintegration the objects should be stored with acid free tissue paper accompanied with other archival materials. The acid free paper will actually start to absorb the acids from the fabrics, given a compromise solution.

5.4 Preventive Conservation

Preventive conservation is a wide-ranging subject, centralising all the efforts on keeping the environmental conditions for objects within defined limits, ensuring at the same time that the artefacts are handled, stored and displayed in an appropriate manner. Moreover, due to minimum intervention treatments to the case study artefacts, preventive conservation can be the fundamental preservation result of these artefacts improving and stabilising their degradation levels. Taking into consideration the cost of re-housing all the collection into more appropriate display cases and the differential composition of the materials, some reasonable solutions drove into the following recommendations:

- Indoor and outdoor RH and temperature will be constantly measured with digital memory thermo-hygrometers. Data on these crucial physical indicators will expose any changes in the internal environment. Separate zones may be created within the museum by comparing and matching their environmental characteristics. The most environmentally stable areas can then be allocated to the most sensitive parts of the collection.
- Regular monitoring both of visible and UV levels from both daylight and electric sources will be measured. Similarly, UV filters on windows can be placed and blue wool strips or Lightcheck™ next to the artefacts can be placed in order to indicate the level of photo-degradation.
- After their minimal intervention each knife will be covered individually in an acid free tissue paper which will regularly be changed by the head conservator. A base made by thin polyethylene material covered with non-woven polyethylene fabric (Tyvek®) will provide a soft support for the knives [8]. The entire collection of the knives could also be covered with the same non-woven material used as a light block.
- Since indoor pollutants emitted by the wooden display cases (VOC) and other parts of the collections are present in this collection, a programme will include an assessment of the pollution risk to the collections. Polyurethane coatings will be considered to be re-applied to the wooden part of the cases and passive monitors will be used to enable to check pollution concentrations indoors. Environmental scavengers such as activated carbon, Purafil®, Corrosion Intercept® will be also considered.

6. OBJECTS' CONTEXTUAL INTEGRITY

The purpose of establishing a Museum of Criminology in Greece was to collect all criminalistic evidence and para-

phernalia brought to the Department of Forensic Medicine and Toxicology over the years in order to preserve the long lasting history of criminality in Greece. Objects are mostly comprehended as "devices" via which the history remains "alive". The mission, itself, reveals the Museum's intention to be considered as a presenter of history rather than a presenter of objects. Museum's entire philosophy is based on theoretical development which affects the way the conservators think about the role of objects.

Codes of Ethics taken from various conservation and museum institutions, state that all conservation processes must respect the integrity of the [cultural] property, including aesthetic, physical, historic and conceptual considerations [9, 10, 11, 12]. Conceptual integrity clarifies the fact that the conservator's decision-making process includes consideration of the non-material properties of the objects, properties such as cultural significance [13]. Therefore, there is often a conflict between preserving the physical integrity of the object, i.e. to stop further deterioration, and preserving the evidence of material culture [9]. For example, although blood stains accelerate deterioration process, their removal will arise any material cultural evidence present in addition to the offence of the traditional custodians of the objects.

Child stated that in all cases, conservation treatments pose a potential risk for the object and this has to be outweighed by the benefit of the object or of the viewer [14]. Ashley-Smith referred that "damage" could be applied on an object through the loss of material or loss of information [15]. But, not all-physical loss is damage [16].

Moreover, Clavir stated that "ethnographic conservators work on pieces which have layers of importance and meaning – symbolic, intellectual, emotional, spiritual – to their originators and their descendants. They do not work on artifacts" [17]. Improvised knives considered to be an ethnographic collection having respectful importance and meaning, especially emotional.

After all, conservators ought to quantify all aspects and fulfill solutions that in parallel do not disturb object's aesthetic, conceptual, historic and physical integrity. Concerning the improvised knives, the entire dialog reinforces the decision not to disturb the character of the collection by applying remedial conservation treatments. But the corrosion acts accumulatively, aggravating artifacts physical integrity and only preventive conservation treatments appear to be suitable for such a collection.

7. SCIENTIFIC EXAMINATION OF DNA

All types of museum collections have, among others, a vital role to play in research. Indeed, one of the primary justifications for collecting material for museum is that to form a permanent body of research material for future generations. Hence, it is of major importance that collecting is not carried out in an arbitrary or aimless way.

It is often the case, that in the light of new scientific techniques, new discoveries or new methodologies will be able to approach and study museum collections in ways that researchers had not previously considered [5]. A contemporary example is the recent advances in DNA analysis on cultural materials (i.e. human remains).

Indeed, DNA fingerprints of blood stains are of great importance today. Walsh declared that it is a general consensus that DNA evidence has an important role in various aspects of criminology [18]. Notwithstanding this acceptance, a gap exists between practice and philosophies that underpin the fields of science and law [19, 20]. The opportunity to reveal the identity of a murderer is very realistic, but the consequences should be considered. Before carrying out a DNA survey, one should first define reasoning and expression [21, 22] in order for the results to be considered as ideologically acceptable.

These have been the subjects of considerable ethical and socio-legal debate. Medico legal laws on DNA, aim to strike a balance between the crime investigation needs of the State and the privacy rights of its citizens. Nevertheless, how effectively this balance is constructed, is a pivotal issue [18]. Levy distinguishes blood as evidence that can be seized pursuant to a search warrant, just as a gun or a knife may be recovered from a suspect's place of residence [23]. Researchers must respect the rights of people to privacy confidentiality and anonymity.

Considering the fact that most of the improvised knives of the Museum are dated within the last centuries, it is possible, that second generation's individuals of both offenders and victims be alive, may arise, a number of ethical problems. The revealing of specific identities may expose people to the risk of personal harm and to disturbance of emotional balance.

Museums have the obligation not to disseminate examination's results openly in the case where there is the slight probability to endanger people's anonymity or confidentiality. Museums must consider carefully the social and political implications of the information they disseminate. They must strive to ensure that such information is well-understood, properly contextualized and responsibly utilized. Moreover, international conservation Code of Ethics insists that actions of all conservation professionals must be governed by the respect for the uniqueness and the significance of cultural property. However, only the Code of Ethics of the American Institute for Conservation of Historic and Artistic Works claims that it is of equal importance to respect the people or person who created the artefact.

7.1 DNA Examination and Law

In 2002 the Greek Archaeological Law was revised (referring to every Greek cultural heritage). However, this Law did not refer to the possibility of a DNA examination for either archaeological or historical cultural remnants. Nevertheless, since DNA examination is a reality today and ethical and legal aspects of this action may be raised at any time one should follow the legislation rules that specifies the procedures of DNA fingerprinting today in Greece.

8. CONCLUSIONS

Since the risk of harmful manipulation or transformation of an object is possible during conservation, the conservator must always work as part of a sensitized team of scientists. Together, they must distinguish between what is necessary and what is superfluous, the possible and the impossible, the intervention that enhances the quality of the object and everything which is detrimental to its integrity.

In order for the team-work to be effective, conservators must be aware of every kind of ethical and legal issues which are connected to the artefact or to a collection. Concerning the objects of Museum of Criminology the conservator, amongst others, should be aware of forensic and anthropological ethics.

Museums usually present and interpret a wide range of materials and artefacts. The Museum of Criminology of the University of Athens, with the collection of improvised knives in addition to many other peculiar and unusual artifacts, is a typical characteristic example. Since objects however, can be diverted in many classes, it seems that it is frivolous to expect the same ethical values to be applied to all classes of objects. Consequently, Codes of Ethics for museums need to be updated [9, 14, 16, 24] suggesting new themes and methodologies through which ethical issues may be studied, taking into consideration the variety in outcomes while still maintaining consistency in general principles. This is a difficult new challenge for museums as they increasingly embrace the values of cultural diversity and, of course, this challenge is going to influence conservation theory and practice.

Furthermore, ethical parameters will need to prescribe that museum collecting and preserving activities are conducted not only according to the judicial sensitivity, but also according to the rights of others. Decision-making concerning preserving will need a long-term and wide-minded vision approach so as not to perpetuate the type of legacy inherited by museums today.

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