



Nora Liisa Elina Salonen

*Nkondi*

A Case Study in Ethnographic Conservation

Helsinki Metropolia University of Applied Sciences  
Conservation

Object Conservation

Bachelor's Thesis

25 May 2012

Author Title Number of Pages Date	Nora L. E. Salonen Nkondi: A Case Study in Ethnographic Conservation 48 pages + 6 appendices 25 May 2012
Degree	Bachelor of Culture and Art
Degree Programme	Conservation
Specialisation option	Object Conservation
Instructors	Heikki Häyhä, Lecturer (Metropolia University of Applied Sciences) Elina Torvinen, Conservator (Helinä Rautavaara Museum)
<p>The purpose of this study was to find conservation methods and treatments suitable for an <i>nkondi</i> nail fetish that originates from the Congo region in Africa. This ethnographic object is on display at the permanent exhibition in the Helinä Rautavaara museum. The main problem is the extensive corrosion of the iron parts. This thesis is a combination of ethnography, artefact research, and conservation. Thesis also deals with the complexity of ethnographic conservation and its special role in the field.</p> <p>The object was documented thoroughly with photographs, drawings, and x-rays. Sizeable amount of material analyses were done and the condition of the object was mapped out carefully. Conservation treatments, procedures, and materials were explained and described thoroughly.</p> <p>After the conservation treatments the object is more stable chemically and structurally, and aesthetically the looks are more pleasing. The treatments keep the object from deteriorating further, thus helping it to survive longer.</p> <p>Conservation of an ethnographic object is an intricate process. It involves a lot of discussion about ethics and other special issues. It is daunting task for a conservator, especially when encountering them for the first time.</p>	
Keywords	Ethnographic conservation, corrosion inhibitors, nkondi, fetishism, Helinä Rautavaara museum, ethnography, African art

1	Introduction	1
<hr/>		
2	Helinä Rautavaara and Her Collection	2
<hr/>		
2	Religion and <i>Minkisi</i>	4
—	3.1. The Nail Fetish or <i>Nkondi</i>	6
	3.2. Fetishes as Art	9
4	Ethnographic Conservation	11
	4.1. Ethics and Special Issues in Ethnographic Conservation	13
5	Ethnographic Conservation Case Study	14
	5.1. Documentation	18
	5.2. Condition Assessment	19
	5.2.1. Corrosion	27
	5.3. Material Analysis	29
	5.3.1. XRF, FTIR and ethnographic sources	29
	5.4. Conservation treatments	34
	5.4.1. Cleaning	34
	5.4.2. Iron and Corrosion Removal	36
	5.4.3. Corrosion Inhibitors	38
	5.4.4. Other Conservation Treatments	41
6	Conclusions	42

## References

---

## Appendices

Appendix 1. *Nkondi* before conservation

Appendix 2. *Nkondi* after conservation

Appendix 3. X-ray picture

Appendix 4 FTIR analysis of the “waxy” substance

Appendix 5 FTIR analysis of the surface coating on the shoulder

Appendix 6. KiKongo vocabulary of related words

## 1 Introduction

The object of this study is a rather large *nkisi* power figure or “fetish” of the *nkondi* kind. It is from the collection of Helinä Rautavaara Museum (Raf55). Figure originates from the Congo region and is made by the Bakongo people of the west. The museum records tell that Helinä Rautavaara first saw the artefact on one of her travels to Africa in the 1960s, and later bought it in Dakar in the late 1980s. It was first kept on display at her apartment, then at her Baga-Zombie museum, and later became part of the Helinä Rautavaara Museum’s general collection. The age of the object is uncertain, but it is suspected to be from the turn of the 20<sup>th</sup> century. (Museum’s object information sheet.) Object is on display at the permanent exhibition, inside a large showcase together with other wooden artefacts from Africa (pic.1.).



Picture 1. *Nkondi* (Raf55) in its showcase at the Helinä Rautavaara Museum.

In this thesis there is a brief look into the culture and the religion that has created the *nkondi* figures. There is also a discussion about the different terms and concepts surrounding them. The cultural context and background of an object are essential things to define before the conservation work can begin. The main focus however is on the case study and the conservation treatments of the *nkondi*. The figure had several different problems, the worst one of which was the extensive corrosion of the metal parts. Different solutions to these problems are discussed in this paper. Also there is a continuous outline of how ethnographic sources can help the conservator in various different stages of the process.

Conservation is a multidisciplinary study that has to derive its methods from natural sciences, chemistry, culture studies, and arts, and combine them with handcrafts. It is a complex discipline that has to sometimes rely heavily on others. Ethnographic conservation has its unique set of problems that the other lines of conservation do not necessarily have. One of these, for instance is the ethics and the rights of the native people to their own cultural heritage. There are a lot of different aspects to take into account when dealing with an ethnographic object. A short chapter is dedicated to the discussion about them.

In the case study section the conservation process is described step by step as it moves forwards. All the treatments are documented, explained, and all the materials, analyses and procedures that were used, are listed.

## 2 Helinä Rautavaara and Her Collection

I have never understood an object's significance as an object; rather it has always been part of an entire culture, not to mention being part of a ritual associated with it.

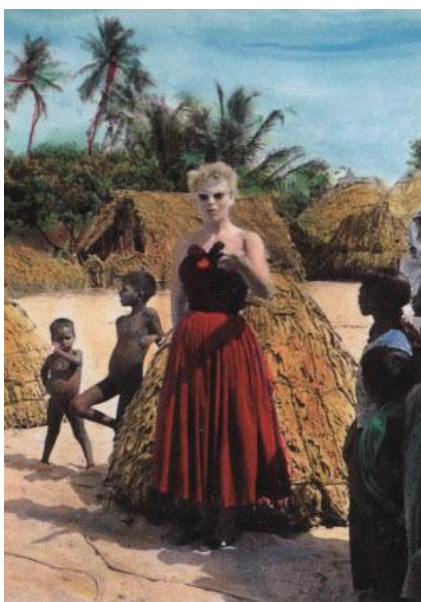
Helinä Rautavaara (1928-1998)

Helinä Rautavaara (pic.2.) was born in Helsinki and she was her parents only child. Helinä was artistically talented, but ended up in the University of Helsinki studying

psychology. She got her master's degree in 1952. In 1954 she took her first influential trip to North Africa. During the next 40 years she travelled extensively in Africa, Middle East, Asia and Latin America.

She was a self-taught anthropologist and ethnographer, who wanted to be part of the local culture, literally hands on, and experience it differently than other travellers and tourists. She documented her travels with photographs, films, recordings, and drawings, and made reports for magazines and newspapers. She wanted to educate the Finnish people to better understand other cultures, religions, customs and nations. Later on she started to accumulate artefacts for a collection, which she firstly exhibited in her home. Every artefact had a specific place and an aesthetic function in her house, and she loved them all immensely. In 1991 she rented a space in central Helsinki for her first private museum, The Baga-Zombie. Small museum exhibited mostly ritual objects from Haiti, but also some African artefacts.

A foundation to ensure the future of Helinä's collection was created in 1997, and in 1998 the Helinä Rautavaara Museum was opened in Espoo Tapiola, just couple of months after Helinä died. Museum collection contains approximately 3000 ritual, art or utility objects, out of which nearly 2500 are on permanent exhibit. Most of the objects are from West Africa and Latin America. Museum also has an extensive collection of photographs and other visual documents from Helinä's travels. (Lehtimäki 1998:15,46–49,130,154,158; [http://helinamuseo.fi/tietoa-museosta.](http://helinamuseo.fi/tietoa-museosta))



Picture 2. Helinä Rautavaara in Africa (from Lehtimäki 1998:193, orig. Helinä's archive).

### 3. Religion and *Minkisi*

The BaKongo people live mainly in the western part of the Democratic Republic of Congo (DR Congo) and their language is called KiKongo. The mixing of Christianity and the old traditions and religious believes has made the BaKongo religious history very complex. Throughout Africa there are many different and intricate religious systems in place (Mellor 1992:4). The African religion is not just magic, but is based on an idea that there is a force or energy in the universe which can be tapped into and used for good or for evil (Mbisi 1991:19). Just one part of the BaKongo religious believes system is so called "fetishism" (MacGaffey 1986:137). The three other forces that the BaKongo believed in were ghosts, ancestors and nature spirits (MacGaffey 1990:229).

Most of the African languages do not have a word for religion, but they have terms for different rituals, concepts, objects, and places of worship (Mbiti 1991:14). *Nkisi* is a KiKongo word that describes the multitude of different objects used in the religious practices of the Bakongo people. Plural form of the word is *minkisi*. They are difficult artefacts to study because of their countless different forms. *Nkisi* can be a spirit, an amulet, a medical treatment, a mask, a figure, or even a human being. The word *nkisi* does not have a direct translation in English, but the term frequently used is "fetish", although this is often inadequate and misleading. (MacGaffey 1988:188.) The preferred term in museum catalogues and ethnographic texts seems to be "power object" (MaGaffey 1998:217) or "power figure".

According to several dictionaries, the word "fetish" has its etymological roots in Portuguese language, where the word *feitiço* was used to describe an amulet, a charm, a small image, or sorcery (Migeod 1919:30). Moreover the word "fetish" was heavily associated with witchcraft and idol worship by the early 15<sup>th</sup> and 16<sup>th</sup> century Portuguese who coined the term (Behrend 2003:131). One etymological origin for the word "fetish" might be in the Latin word *facticius* that means "made by art". The term "fetish" was more widely used in the West than in the East Africa. It was first meant to be used as an explanation for the worship of inanimate objects, and all African

inhabitants were said to be “fetishists” (Chatelain 1894:303) regardless of their religious beliefs. Especially on the west coast the word was used to describe everything supernatural and there the priests and diviners were known as “fetish-men”. (Chatelain 1894:304.)

Another term that was coined to describe the newly found religions was “animism”. Origins of the term are in the Latin word “anima” that means ‘soul’ or ‘ghost’. The concept of animism means that every inanimate object has a soul. The difference here is that fetishism thinks that the soul or the spirit has been captured inside the fetish instead of it having a soul to begin with. (Migeod 1919:30.) The word *nkisi* relates to several other African words often translated as ‘spirit’, but the *nkisi* is just a shell, body, or a container for a soul. A craftsman carves the statue for a price just like he would make any other object (MacGaffey 1990:51). The body or the container is considered empty until the medicine (*bilongo*) is put inside (MacGaffey 1988:192). They are merely the vessel through which the land of the living can be in contact with the dead. There are specific recipes for each kinds of *nkisi* and the recipe defines what kind of body (*nitu*) the specific spirit needs. *Nkisi* can be as simple as a piece of raffia fabric made into a crude pouch (*salu*) that contains some sacred medicine (MacGaffey 1970:30), a snail shell, a clay pot, a dried out calabash gourd, a wooden statue of an anthropomorphic figure (MacGaffey 2000:65), or a figure of a double-headed dog. Usually the main *nkisi* contains other smaller bundles, shells, or little figures that are attached onto it with resin. Sometimes the more important *minkisi* were fixed on a pedestal made of earth, but mostly they were portable in some manner. (MacGaffey 1988:190-191.)

The *minkisi* had an essential role in the society and they were highly respected. For instance if an *nkisi* would tumble over, all those who were present had to go down to the ground and apologise before the figure could be lifted up (Mellor 1992:12). The *Minkisi* provided economic prosperity and protection; they were the authority in the society and gave their owner a better status. They had a will of their own, but they could be invoked to do the bidding of humans. (MacGaffey 1990:45, 60).

The earliest written records tell that the society relied on their chiefs and their *minkisi* to hunt down and punish witches (MacGaffey 2000:65). Chiefs were usually, but not



exclusively, men. They relied on the *minkisi* to help them to maintain the public order. The chief was known for his (or her) fierceness and violence. Insignia of the chief is similar to the medicine that is bestowed in the *minkisi*, so these two were also visually linked. Sometimes the chiefs could also be called *nkisi* and act as a vessel for a spirit or an ancestor. (MacGaffey 2000:66.)

Anthropologists and ethnographers have collected and tried to identify all the seeds, leaves, and other parts of plants used as medicine in the *minkisi*. About 40 different species of plant were identified. Some of them have pharmaceutical uses, for instance as tranquilizers, but mostly they just represented metaphorically the powers that the particular spirit of the *minkisi* had. (MacGaffey 1988:190-192.) The specific function and the nature of an *nkisi* could also be determined by visual clues (MacGaffey 1988:202). For instance in a *nkisi* used for divination they might use a head of a *kintombo* bird, whose cry is said to foretell the future. Head of a viper was incorporated to the *nkisi* so it could attack wrongdoers, round stones were said to cure tumours, and feathers are associated with spirits that can fly. It was practical to use just a part of the whole object, for instance a leaf represented a whole tree, and a feather signified the whole bird. (MacGaffey 1988:193-194.)

The *minkisi* can be roughly divided in two distinct classes, those that heal and those that are called 'blood *nkisi*' or *nkondi*, meaning 'hunter'. The latter hunted down and punished witches, treaty-breakers, adulterers, thieves, and other lawbreakers. *Nkondi* (*minkondi* pl.) could take many different forms but the most impressive ones are the so-called "nail fetishes". (MacGaffey 2000:66.)

### 3.1. The Nail Fetish or *Nkondi*

Usually the *nkondi* was deliberately made to look very aggressive. It might have its arm raised up with a knife or a spear in its hand, outthrust jaw or tongue, or otherwise a savage expression on its face. Adding to this feral look there are the nails, blades, and other hardware driven into its body. Typically *nkondi* figures are

anthropomorphic<sup>1</sup>, but they can also be in the shape of a dog or other carnivores. Those usually have two heads and are portrayed with exposed teeth (MacGaffey 2000:67.) to make them look even more intimidating.

There is an element of fear in the African religion. The fear of sorcery, black magic, and witchcraft is deeply rooted in the African life, and witches were the most hated people in the society. Other types of enemies were sickness, accidents, suffering, and death. The *nkondi* was used against all of these. (Mbiti 1991:165.)

The process of hammering the nails and other hardware into the *nkondi* is called *koma nkolo*, or 'hammering curse' (MacGaffey 1988:194). The client asks the priest (*nganga*), who was always a man (MacGaffey 1990:50), to act as their mediator between them and the spiritual world and to hammer the iron into the figure. This will hurt and infuriate the *nkondi* and make it hunt down its target. The *nkondi* might be also enraged and annoyed by explosions of gunpowder (Mellor 1992:12), and it seems that their feelings could be hurt as well. It could be aroused to frenzy, for instance, with insults directed towards *nkisi's* mother-in-law's genitals, or telling it is nothing but a piece of wood. (MacGaffey 2000:67-68.) When the *nkondi* is angered it is considered highly volatile and violently aggressive (Mellor 1992:12).

There is an early 20<sup>th</sup> century narrative of a fetish figure that was acquired into the collection of the London Geographic Society. The text describes the use and the workings of the *nkondi*:

The figure is of wood, with eyes of mica, which glisten unpleasantly in the dusk. A number of heavy iron nails have been driven into its body. (...) We are indebted to Mr T. A. Joyce of the British Museum for the following note: "The practice of knocking in nails has, as far as I can gather, two aspects. The simpler is when a worshipper, desirous of obtaining some favour, pays a fetish-man a fee and is allowed to drive a nail into the figure while uttering his petition (or the

---

<sup>1</sup> Approximately 75% of the anthropomorphic figures are asexual. The sexual organs or other sexual attributes are added only if it is relevant for the particular use of the *nkisi*. Most of the *nkondi* that can be sexed are male (MacGaffey 1990:55). The male *nkondi* is said to be more savage and more relentless in its pursuit of the wrongdoer, when the female ones are more docile. (MacGaffey 1988:199-200.) The object of this study has a rather obvious male feature.

nail is driven in by the fetish- man on his behalf). The other is in connection with unauthorized ' black magic.' In this case the votary wishing to harm an enemy pays a heavy fee to the fetish-man to let him drive a nail (...) into the figure. It is believed that the victim will fall sick and die in consequence. The result is that a man, who feels ill and believes that his condition is due to the evil influence set in motion by some enemy, goes to the fetish-man and makes inquiries, ultimately bribing him heavily to remove the nail and so ensure his recovery. (...) The nail in the African figure is merely a reminder to the supernatural power, which the image represents, to induce it to perform the wishes of the petitioner.

The Geographical Journal 1915:254

The 'hunter' *minkisi* were also used when two or more parties had to make a deal of some sort. All participants had to hammer a nail into the *nkondi* after licking it (MacGaffey 1990:53), and if anyone of them broke the deal, the *nkondi* would punish him. (MacGaffey 2000:68-69.) If a person wanted protection from someone or something, they could give the priest a part of themselves (hair, fingernail etc.) to be attached into the *nkondi*. This way they were placing their essence in safekeeping within the *nkondi*. (MacGaffey 1988:202). This tells us that the *nkondi* were not always violent and vengeful, but could be benevolent as well (MacGaffey 1990:50).

There has even been a notion that the nail fetishes are a hybrid, composed of African cultural origins and Portuguese Catholic missionaries' influence on the area. Some researchers have suggested that they are furthermore a representation of the crucified Christ or Saint Sebastian<sup>2</sup> (Behrend 2003:131). The assimilation and mixing of cultural traits, ideas, and ideologies is common, throughout history. Under the Belgian rule the *minkondi* became forbidden, although their use continued in secret. Due to the government regulations and the Christian missions the most remarkable *minkondi*, and the use of them, as public controllers and keepers of peace, faded by the 1920s. (MacGaffey 2000:66-69.)

---

<sup>2</sup> Saint Sebastian was a Roman soldier turned Christian martyr. He is depicted in religious art with several arrows sticking out of his body (Day 2002:114), just like the nails out of *nkondi*.

### 3.2. Fetishes as Art

One problematic question with ethnographic objects is their classification. In their original context many objects were intended for use, as ritual, ceremonial or everyday items. A big portion of the material culture from Africa that is being displayed in the museums has some sort of sacred meaning to them (Mellor 1992:5), but out of their original surroundings, in a museum or part of a collection, they might be viewed only as art. When an artefact is labelled as art it instantly gives the object a different value, because just the word "art" implies a value judgement (Muñoz Viñas 2005:31). But does an ethnographic object automatically turn into art when it enters a museum, no matter what its initial use was? Even though these objects might be portrayed in art galleries and museums people still have religious experiences visiting them. Museums do have almost tangible religious or sacred atmosphere (Van Beek 1990:28). This in a way lets the sacred object continue its previous life in a different place of "worship".

The anthropology of art is a study restricted to "primitive" art. From a point of view of art history, art is a fabricated object that has lost its (or never had any) usefulness in everyday life. For something to become art it needs an artist that makes it, someone who buys or appreciates it, and a critic that tells the public that it indeed *is* art. (MacGaffey 1998:217-218, 220.) Firstly art historians had problems contextualizing the woodcarvings from Africa. There were no clear historical evolution of form, no written documents, and the artists were anonymous. The maker of these objects was not seen as an artist, but as a craftsman, thus excluding these sculptures and masks from being art. (Adams 1989:57.) Still, even now, many might consider African objects foreign and aesthetically difficult to comprehend. (Mellor 1992:3).

As early as the 15<sup>th</sup> century the Portuguese explorers brought back some rare African objects for European collections. In the beginning these artefacts were considered as ethnological oddities for the curiosity cabinets and collections of the rich. The first nail fetishes that were brought to Europe both fascinated and repelled people. In the 16<sup>th</sup> century some statues were burned as they reminded people too much of the Devil and made them uncomfortable (MacGaffey 1998:223.) Wooden sculptures and masks from

sub-Saharan Africa were first recognized as art towards the end of the 19<sup>th</sup>, and more so in the early 20<sup>th</sup> century. (Alfert 1972:387.)

In the beginning it was a miscellaneous group of different types of people, who dedicated their time to study the *minkisi*: missionaries, colonial administrators, anthropologists, teachers, curators, and finally art historians. In 1832 the newly founded Ethnological Society of Paris helped to bring African material culture into public's attention (MacGaffey 1998:223). In the turn of the century there were several exhibitions in Central Europe portraying artefacts from Africa, Oceania and Mesoamerica. Those objects portrayed had a profound influence on western art of that time. (Alfert 1972:387.) African sculptures themselves were not truly accepted as art, per se, until the 1950s, first in the United States, and much later in Europe. (Adams 1989:55.)

Nail figures were, and still are, widely collected and studied as art (MacGaffey 1988:189) and they are now considered masterworks of African art (MacGaffey 2000:66). In their initials form they were considered powerful objects, in their artistic form the *minkondi* might be also considered as such; powerful art. In the African art scene they are quite common, in their many appearances and forms. For instance on a day, a search at the popular American online auction website eBay, gave over 25 examples of nail fetishes on sale, their prices varying from 20 dollars to thousands according to their size, age, and authenticity ([www.ebay.com](http://www.ebay.com)).

Object changes meaning according to the observer, their attitude and education. (Muñoz Viñas 2005:57-58) The final decision is in the hands of the museum; they can portray the objects as what they are or as art. Either way, we as viewers can appreciate them in both capacities. As they are already out of their original environment and context, many of the objects can be housed both in ethnographic museums and in art galleries. The subject of this study is displayed as a visual presentation of African culture, and also as a memento brought back from the travels of Helina Rautavaara.

#### 4. Ethnographic Conservation

One specific area of study in the field of conservation is the conservation of ethnographic objects. What then is an ethnographic object? Ethnographic artefact is created solely by ethnographers, because before it is classified as such, it is only an object (Mellor 1992:3) that is used as an everyday artefact, ritual tool or for instance sacred relic. These ethnographic objects are used by anthropologists to draw certain conclusions about the culture they belong to (Rose 1988:6). Ethnographic objects give a unique insight into the culture, not only to its material culture but also to the intangible. Conservators are trained to understand the physical and chemical properties of the object, but the immaterial aspects might be harder for them to understand (Mellor 1992:3).

In conservation every case is obviously unique; there are no universal truths that can be applied to every object. There are guidelines and certain procedures that must be obeyed. Before commencing cleaning of an ethnographic object (or any other object for that matter), there has to be a considerable amount of research to back up the decision-making. Cleaning of an object is virtually always an irreversible action, so testing the treatments is vital (Greene 2006:189). In the field of conservation the cleaning treatments are viewed amongst the most controversial, because they can, among other things, affect the viewer's opinion of the object (Griffin 2006:163). What is considered clean depends on cultural and personal opinions. The perception of the members belonging to the culture that created the object may differ quite a lot from the perception of the conservator for instance (Rose 1988:25). The motives for cleaning are different for the conservator, who performs cleaning mainly to ensure that the artefact does not deteriorate further.

A decision has to be made to compromise in some cases. If all the dirt is removed it might lead to loss of information, but on the other hand, if it is left into place it might damage the object. The risk of over cleaning is also always there. Dirt might be something that the maker or the user of the object has added and could be a vital part of the object's history and use, (Greene 2006:185.) so it is vital to consult ethnographic studies, museum curators, or native consultants (Johnson et al. 2005)

whenever it is possible. And if it is altogether possible, before starting the conservation process, it is good to consult records of previous conservation treatments. Often the past restorations have become discoloured, brittle, or otherwise unsuitable, and they have to be removed (Griffin 2006:164).

When the object is on public display the appearance becomes inevitably a concern, but aesthetics are in second place after the concern for removal of information (Greene 2006:193). There might be deposits that are of use and great interest to anthropologists. Sometimes there might be surface decorations that are covered by dirt. There has to be a decision whether or not to uncover them. The dirt might be product of the long-term use of the object and then it is preferable to keep it in place. (Greene 2006:193-194.)

There is a division between different kinds of dirt that can be found on an ethnographic object. There is so called "museum dirt" that should be removed, and "ethnographic dirt" that should be left alone (Rose 1988:25). "Museum dirt" is mainly dust and grime that will inevitably gather on the surface of an object over time, no matter how "clean" a museum or storage is. Telling the difference between these two kinds of dirt might in some cases be very difficult. If the museum dirt is clearly distinguishable from the "original" ethnographic dirt, it should be removed. For most of the ethnographic objects the goal of the conservation treatment should be stabilisation rather than a totally clean surface (Rose 1988:26). When choosing the conservation methods and procedures the conservator has to keep in mind not to destroy, remove, or cover anything that has special value to the ethnographers and anthropologists (Rose 1988:6).

Who made the object? Can the specific maker or owner be determined? Are there traditions in the making of the object, and if there are, what are those? When the object was made? What was its original purpose? (Rose 1988: 8-12) All these questions and their answers should be taken into consideration when making decisions about conservation treatments. The act of conservation in a way de-mystifies the sacred artefacts and makes them just objects (Van Beek 1990:36). Even so, tackling an ethnographic object may be a daunting task for a conservator, especially when encountering them for the first time. On the other hand an ethnographic object does not differ that much from, let's say, archaeological object, in a sense that the cultures

that created them are both rather far from ours; the other geographically and ideologically, and the other in time.

#### 4.1. Ethics and Special Issues in Ethnographic Conservation

Throughout the field of conservation there has been going on, for many decades, a discussion about the ethics of the profession. Perhaps the most vibrant discussion has concentrated on the ethics of ethnographic conservation, due to its special and indistinguishable role on the field. There are many different aspects to consider.

First of all, who is allowed to touch the artefact? Some cultures and religions have specific norms and rules about the handling of their objects. For instance the gender of the conservator might be an issue in some cases. Secondly, some of the objects in museums were never meant to last; rather they were designed to deteriorate, or to be intentionally destroyed, ritually or otherwise (Rose 1988:26). In these cases the ethics come to play. For instance the Kavat masks of Papua New Guinea were made only to be used once in a ritual dance, and then burned. Yet the museums have many examples of the masks in their collections.

The one way to make *minkondi* useless is to ignore them and their status, and treat them with indifference (Mellor 1992:12). Conservation treatments surely are the opposite of that. Conservators give their best, their time and effort to keep the objects from deteriorating and thus vanishing and been forgotten. If it is truly believed that only by breaking the *nkisi* the power it holds can be diminished and rendered useless, is it appropriate for a conservator to mend it (Mellor 1992:4)? Also conservator has to keep in mind that sometimes a nail fetish was deliberately made defective or incomplete. It might be missing a limb or have a distorted face, so that when the *nkondi* catches its victim the evildoer will become as flawed as the figure (MacGaffey 1988:199).



Many of the ethnographic conservation objects have changed their meaning from the original one, and most of them no longer perform their intended function. The power of the *nkondi* diminishes if its owner dies, or if it is sold (Mellor 1992:12). This means that the *minkondi* in the museums do not possess their previous powers, and thus no longer have their original meaning to the BaKongo culture. Opinion is that the African objects that come under conservator's care, do not need to be treated as they still were in their original cultural context. We do not have the capacity to do so, and it might even be insulting to assume that we even could. (Mellor 1992:13.)

There is growing agreement that the people most directly affected by a conservation process, the stakeholders, should be part of the processes used to make the decisions about the care of their own cultural heritage. The object motives also differ between disciplines, for instance anthropologists have different uses for the object than the conservator. (Johnson et al. 2005:203.) Decisions have to be made balancing between the needs of the object (conservator's concern), interests of the ethnographer and the views of the native stakeholders (Greene 2006: 196-197). For instance, the native consultants might recommend a cleaning method or material that, from the perspective of a conservator, is believed to cause damage in the long term. Collaboration and diplomacy are needed. (Johnson et al. 2005:203.)

Some of the ethnographic objects might not be "authentic", and made just for tourists or collectors. What is the difference then? How does our perception change? In the point of view of the observer does the authenticity of the museum piece really matter, since it is there to tell a visual story, and help the visitor to understand a certain concept? If the objects that were made for tourists, collectors, or other trade, were made differently than the ones made for actual use (Rose 1988:11), then they might give a false impression.

## 5. *Nkondi* Case Study of Ethnographic Conservation

This particular *nkondi* figure is rather impressive, both in size and in the amount of hardware that has been hammered into it. It is visually very imposing, with its rather savage facial expression and fierce the pose. The figure is carved out of wood, and x-ray pictures suggest that it was done out of a single piece, since no visible seams could be found (except for the right foot that is split from the middle). The hardware does obstruct the view quite a lot. The figure is standing on two separate, square platforms, its head slightly up-tilted, eyes open and the tongue is sticking out, nose is wide and its eyebrows are heavy (pic. 3.).



Picture 3. Head and right arm of the *nkondi*.

The face of the figure is painted white, tongue is red, and back of the head is painted black from ear to ear. Most of the body of the figure is also covered in black. Figure is wearing headgear that looks like a bowler hat or a pith helmet. Its right arm is raised in the air and there is hole formed by the fingers, where a spear or a knife used to be (pic. 3.). The left arm is resting against the figure's thigh and the hand does not have any distinguishable fingers (pic. 10). In the middle of the stomach of the figure there is a medicine box made of clay and glass (pic. 11). Several sources refer to the glass being a mirror, but the reflection of this one is rather weak.

There are about little over 500 nails and around 150 iron blades hammered on it. Nails are of various sizes in thickness and in length. They are approximately between 50 and 150 mm long, but there are couple of shorter and longer ones as well. Nails are round in cross-section, which points to them being factory made rather than hand-wrought. Most of the nails have a flat, round head, some have a small knob, and some are just straight, blunt spikes. Blades are mostly trapezoids in shape. The sharpest point is struck inside the wood, approximately 10 to 15mm deep. Blades are roughly 1mm thick and vary in size. Some of the blades have clipped corners and some have been bent. There is one on the backside that looks like a file blade, and one small misshapen, badly corroded blade hammered into the right chest. Couple smaller ones can be found on the ride side of the statue as well. X-ray pictures show that the nails and the blades are not hammered in particularly deep, and some of them have become slightly loose and few have been lost completely.

X-ray picture of the head of the figure show six nails hammered inside the "skull" (pic. 4). Nails are smaller than most of the nails hammered to the body, and only one has a clearly visible rounded, knoblike head. The ends of the nails are not visible and are completely covered with the coating of the hat.



Picture 4. X-ray of the head and arm area.

Many times the *nkisi* figures have knots tied to it, but this particular *nkondi* does not have anything tied to its nails or spikes. Nor does it have any small bundles of medicine or smaller figurines attached to it. It might have not had any, or they are removed or missing. No seeds, leaves or any other visible parts of plants (medicine) were found either.

Height of the figure, from head to toe is 860mm and the sizes of the platforms the statue is standing on are approximately 200 x 100mm each. The left one is missing triangular piece from the back and the right one has been made of two different pieces. The maximum depth of the figure is about 400mm, and the width is about the same. The measurements of the clay and glass box in the middle of the figure's stomach are 80 x 70 x 50mm. Weight of the object is 16,1kg. The safest, and practically the only way to lift the object is for two persons to place their hands under the feet of the figure and balance it by holding a hand at the back of the head.

### 5.1. Documentation

Documentation is a vital part of all conservation cases. The condition of the object is documented before and after conservation. Usually documentation includes also photographs of the work progress and detail shots of interesting and important parts. The use of digital equipment has made documentation considerably easier and faster. Besides photographs, other parts of the documentation process in this case were X-ray and microscope pictures, and schematic drawings.



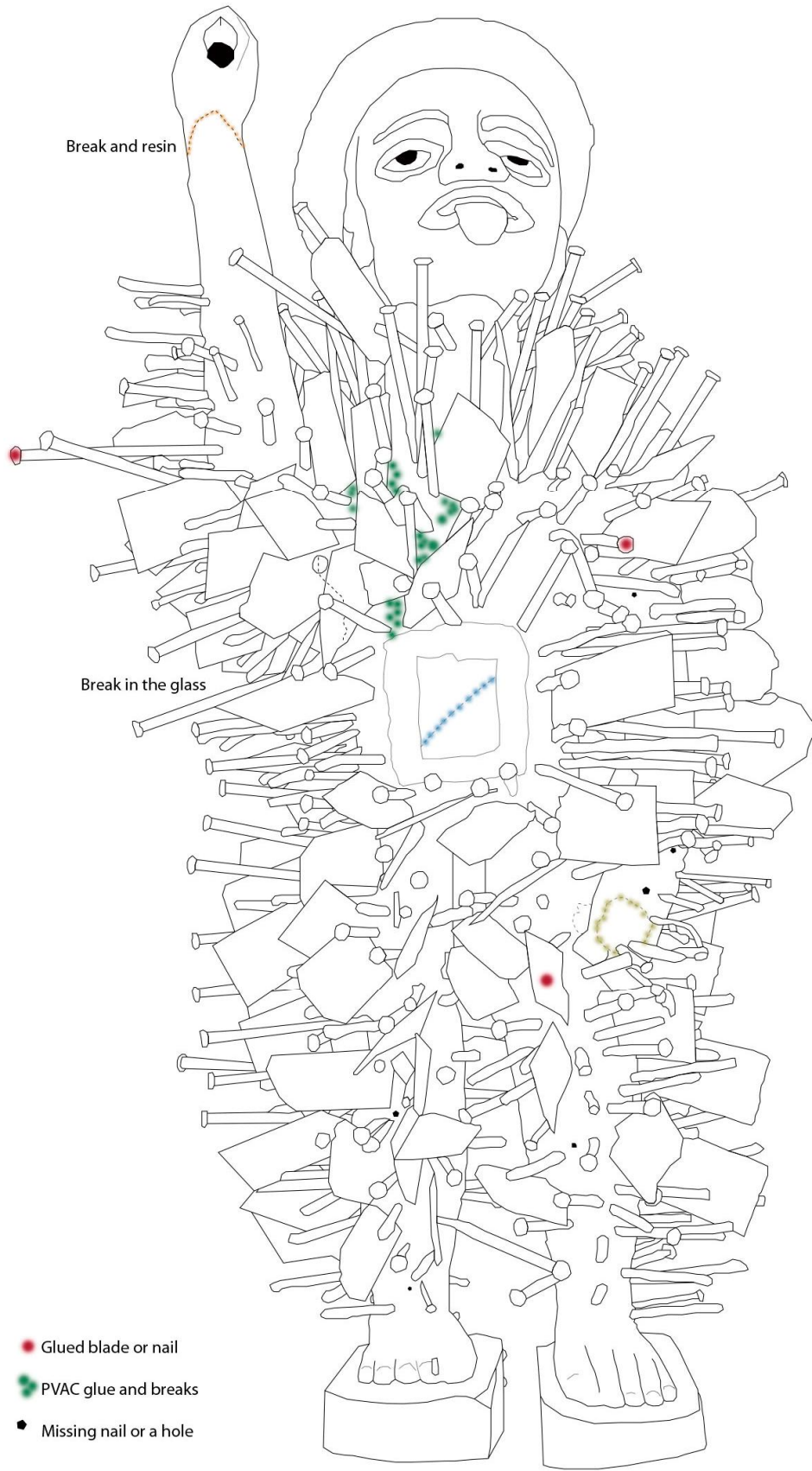
Picture 5. *Nkondi* documentation photos before conservation.

Documentation photographs were taken, before (pic. 5) and after conservation, in studio conditions with Canon Eos 450D digital camera and slightly adjusted in Photoshop. Object was photographed from front, back, and from both sides (Append. 1-2). Detail photos of the face and some chosen parts were taken (pic. 3), to get a

better view of the condition of the object (before conservation) and of the results of the conservation treatments (after conservation) (Appendix 2). Microscopic close-up photographs were taken with Dino-Lite digital USB-microscope to help with the identification of the materials and determining the condition. X-ray pictures were taken with a digital Shimadzu Mobile Art ECO x-ray machine on Fuji IP-cassette CH digital plates. Because of its large size, the object had to be x-rayed in four sections. Those were combined with Photoshop to make a complete picture of the statue (Appendix 3). Documentation photographs were used to make a line drawing of the object with Adobe Illustrator. These pictures were used as an aide for the condition assessment (pic. 6-7).

## 2. Condition Assessment

Many *nkisi* found in museum collections have suffered a loss or a damage of some sorts. When they have become a part of a collection they usually have ended up losing at least colour or some small parts, like feathers for instance (MacGaffey 1988:189). Determining the construction and the condition of the object is essential. After documentation is done, condition assessment is the next step to be taken in the conservation process (pic. 6-7). This means mapping out the integrity of the material(s), the state of the deterioration, the wear and tear of the object, and missing or broken parts.



Picture 6. Condition assessment picture: front.



Picture 7. Condition assessment picture: back.



When a conservator is working with an ethnographic object, they have to consider if the object is broken, otherwise distorted or damaged due to a ritual (Rose 1988:14-15) or other use. If the damage is deliberate it should be left alone, if it does not crucially threaten the object and its integrity. In this case it is hard to say whether the damages are due to the use of the object, handling after the purchase, or have they happened during transportation or storing of the object.



Picture 8. Cracks on the statue's face.

The relative humidity, temperature and the amount of lighting inside the showcase at the museum were measured when the object was retrieved. RH was 41.1%, which is good for wooden objects but damages metals. Metals, especially iron, need a relative humidity of 20% or less, depending on the composition and condition of the metal. Temperature was 22.4°C and the Lux count from the lighting was 171. Wood had cracked from some places, for instance there are five fine splits on the statue's forehead (pic. 8), one on its cheek, and one in the back of the head. Those were monitored closely to make sure they would not widen. The relative humidity of the

workroom was notably low, around 20-30%. It was seen necessary to build a humidity tent for the object to keep the wood from cracking<sup>3</sup>. The body had some rather serious looking cracks as well (pic. 9). They were mainly in places where the nails were hammered deeper. Worst parts were the back of the neck/upper shoulders and shoulder plates, and on the statues right chest just above the medicine box. Wood had broken off in places, and somewhere along the objects history someone had tried to fix the breaks, rather sloppily. A sample of the dripping substance that leaked out of the break was taken. First it was thought to be wax of some sort, but the FTIR analysis revealed that it is PVAC glue (Appendix 5). PVAC is commonly used for gluing wood. It is impossible to say when the glue was put there.



Picture 9. Cracking on the body of the figure and PVAC glue.

Left arm of the figure is raised up and the hand is curled like it is supposed to hold something, a spear or some kind of knife that is missing. The arm has broken off completely at some point and has been attached back with yellowing glue (pic. 19). Right arm is broken in several places but it is stable. Looks like the nails are holding it in place (pic. 10).

---

<sup>3</sup> The tent was made out of a large enough plastic box, four stainless steel pipes (approx. 120mm high) and clear plastic sheet. Five beakers of water were left inside to keep the humidity balanced.



Picture 10. Breaks and holes on the left arm.

The "medicine container" in the middle of the figure is made of clay and earth (pic. 11). There are small feathers mixed in with the material. The glass/mirror in front of the box is broken in two and the surface is full of scratches. Glass is smudged with mud on the borders. Those make it impossible to see inside the box to confirm if there is any medicine (still) in there.



Picture 11. Medicine box made of clay and glass, corrosion flaking of the blades.

Microscope pictures with the Dino-Lite were taken of the clay structure. There are small, white insect eggs embedded in the dirt (pic. 12). Microscope pictures show also that there is a small cluster of fly excrement on the left cheek of the figure. The white colouring of the face is little bit faded on the forehead of the statue and some black dots of decoration can be seen (pic. 3). It is hard to say whether the dots are on top of

the white paint or beneath it. If they are beneath the coating, it might mean that the face has been repainted at some point.



Picture 12. Microscope picture of the insect eggs around the medicine box (magnifications 50 and 200).

There are around 30 small holes on the body of the figure. Couple of them are from missing nails, but most look like they are drilled “starts” for the nails. They are too big to be insect holes. When *nganga* nailed the hardware into the *nkondi* did he make a start with a drill or some sort of burin-like tool to keep the wood from cracking? Or does this tell that the object is not genuine, and was never used as a “real” *nkondi*?

The iron parts were riddled with white spots (pic. 13). With the XRF-analysis those were identified as calcium carbonate. Deposits gave the figure a “mouldy” and unkept look. They were situated especially on the right side of the figure under the raised arm, on the left side of the chest and the left shoulder. It seems that the soil that has been thrown onto the surface of the figure, together with the corrosion process has drawn the calcium carbonate out to form these clusters.



Picture 13. Corrosion, dirt and calcium carbonate deposits. Photos on the right are taken with a microscope camera (magnification 50 and 200).

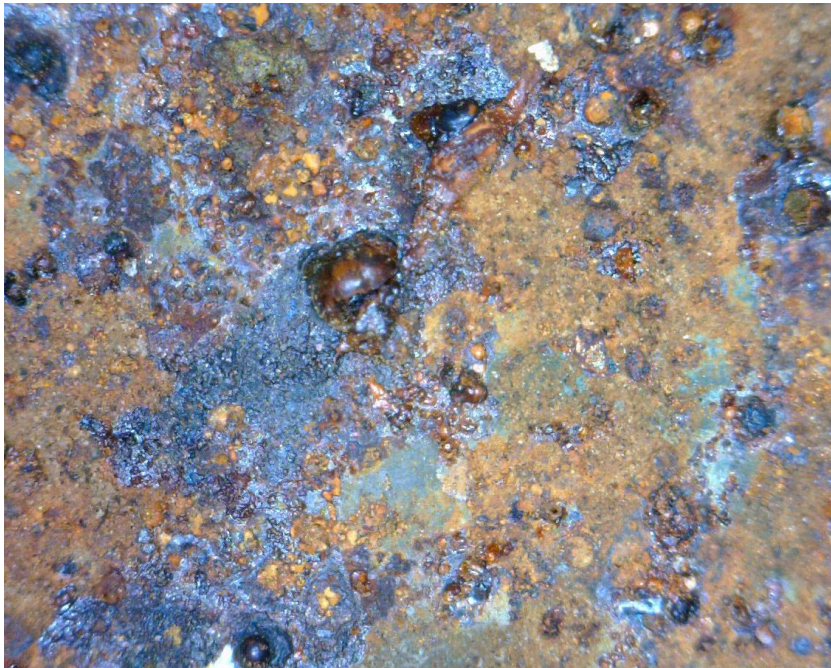
### 5.2.1. Corrosion

Corrosion is broadly speaking electrochemical oxidation of metals. Corrosion products are the destructive results of chemical reaction between metal and its environment (Jones 1996:5). The corrosion product of iron is rust, which is easily recognised by its orange or brown colour. Different types of corrosion and corrosion products can be found on the hardware hammered into the object and they are: uniform, pitting, crevice, blistering, active and passive corrosion (pic. 13).

Uniform corrosion means, as the name implies, that the whole surface of the metal is covered with corrosion products. Uniform elimination of the metal surface is the most

common form of corrosion. The formation of this kind of corrosion requires that the metal itself is uniform in composition, and that the corrosive environment has even access to all parts of the metal. Pitting corrosion produces small, deep or shallow cavities on the surface of the metal and blistering happens when internal hydrogen filled voids erupt at the surface. (Jones 1996:11, 15, 19.) Active corrosion can be identified by the powdery corrosion product (in iron bright orange or red) or by flaking of the existing surface corrosion (pic. 11). When corrosion is active it means that the metals are still reacting to their environment. Passive corrosion is the relative insoluble film of corrosion products on the metal surface (in iron dark red or brown), and it actually decreases the corrosion rate of the metal. (Selwyn 2004:24.)

The iron parts of this object were very badly rusted. Almost all of the surfaces were covered by a layer of uniform corrosion. Some parts of the blades had quite a lot of pitting and there are also blisters on some surfaces (pic. 14). Corrosion is partially caused by the dirt thrown on the surface and partially by the high relative humidity. The dirt, dust and other particles have trapped humidity on the surface of the metal and triggered the corrosion reactions. Almost all of the original surfaces of the metal were flaking and crumbling off on their own.



Picture 14. Blistering corrosion on the surface of a blade (microscopic magnification 100).

Some of the nails that were completely covered with light brown earth seemed to be in better condition than the others. Clean iron surface could be seen underneath the soil.

### 5.3. Material analysis

Identification of the object's materials is a fundamental part of the conservation process. This, along with the condition assessment determines the actions the conservator should take. Ethnographic studies tell us that the *nkondi* figures were made according to strict rules of metaphor and metonymy, and more importantly for the people who study them, they were composed out of certain specific materials (Behrend 2003:131). This helps the conservator with the material analysis, if they can assume that the same materials were used on every occasion and for every *nkisi*.

Conservators have many different methods and tools for determining used materials. The most basic one is experience, the more materials a conservator encounters, the more they can add to their visual database, making identification easier. It is also recommendable for a conservator to build up his or her own library of reference materials for future use. There are several different laboratory tests and machinery a conservator can use, if he or she is lucky enough to have a well-equipped (and well funded) laboratory at their disposal. Assuming that they know how to conduct the tests of course. With ethnographic objects one method of finding out the composition of the artefact is to use anthropological and ethnographical text sources as references together with laboratory tests. This material analysis was made combining the ethnographic sources with the scientific methods.

#### 5.3.1. XRF, FTIR and Ethnographic Sources

*Innov-X Alpha Series XRF Analyser* (a portable energy-dispersive X-ray spectroscopy machine) was used to analyse various surfaces of the statue. Measurements were mainly taken non-destructively, by placing the nozzle of the XRF-analyser gently on the surface of the object. There are different modes of measuring for different types of



materials. The alloy mode was used to measure the elemental content of the metal parts of the object, and the soil mode was used to measure the rest, for instance, in this case, the head area, hat, face and body.

XRF-analysis was done to identify possible pesticides, additives and other traces, such as heavy metals etc. There were some trace elements of lead, but the amount was so low, that the risk is practically non-existent. There are often traces of arsenic, mercury or other poisonous and harmful substances on the surface of ethnographic objects, due to previous biocide treatments. On this object, XRF-analysis showed arsenic levels no higher than approximately 50 parts per million (ppm). That was a measurement taken from a metal part. Other measurements taken from the surface of the statue were mainly under 10 ppm. Mercury levels were also highest on the iron parts (approx. 100 ppm), but otherwise they were under 15 ppm. Usually element traces under 1000 ppm are not noteworthy, so there was not any need for significant work safety precautions.

Alloy mode was used to confirm that the nails and metal plates were carbon steel. Measurements were taken off of two nails and two plates, to get an accurate reading. Sample of the white substance on the surface of the iron parts was taken and grinded into fine powder with pestle and mortar. FTIR-analysis was inconclusive, so an XRF-analysis was done. For the analysis, the powder had to be placed in a small pocket made out of Parafilm (plastic paraffin film). Measurement showed that the substance was mainly calcium carbonate ( $\text{CaCO}_3$ ) with some impurities. Calcium carbonate is a common chemical compound found in rocks, seashells, and eggshell.

PerkinElmer Spectrum 100 FTIR machine was used for further identification of the materials<sup>4</sup>. Samples for the FTIR analyses were taken based on visual inspection of the object. Samples are listed below in table 1.

---

<sup>4</sup> FTIR is Fourier transform infrared spectroscopy technique, which gives out an infrared spectrum of absorption, emission and photoconductivity of solids, liquid and gasses. The result is then compared with a database that contains spectrums of known substances to identify materials. This method is always destructive because the samples have to be grinded into fine powder.

Table 1: FTIR samples

No.	Sample type and location
1	White powder around the left eye
2	Powdery substance inside the mouth
3	Glue on the left arm
4	White substance on a blade on the left side of the figure
5	Surface coating on the left shoulder
6	Coating of the headgear
7	Waxy substance on the chest and stomach

It was not possible to take any samples of the wood itself, though some chips had come loose, probably sometimes during transportation. Those were collected and put in a small zip-bag, for possible further research. There was no time or resources for lengthy identification tests. The ethnographic literature did not offer any clues on the wood species either, but it is safe to assume that the wood used was probably local.

White, black, and red are the most important colours in the Congo religion. White is the colour of purity, truth, health, and also it is associated with the spiritual world, and the dead. Black represents chaos, social disorder, guilt, lust for murder, and evil. Red is a mediator colour between black and white. It is the colour of sexual lust and magic. (<http://www.coloria.net/kulttuurit/afrikka.htm#kongo>.) Many *nkisi* show their natural colour, maybe darkened by smoke or the blood of the sacrifices. Often enough the *nkisi* is coloured with red or white, sometimes black, or combination of these three. (MacGaffey 1988:193.)

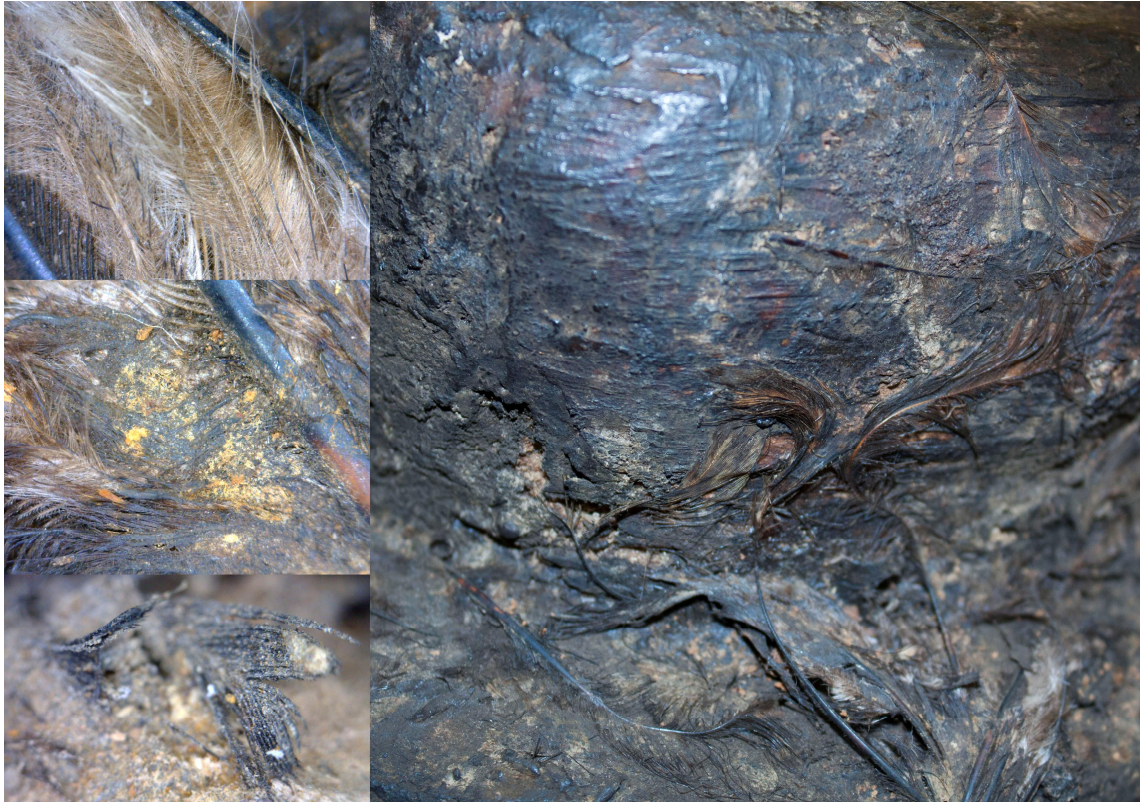
Face of this figure is painted white. XRF-analysis did not show any significant amounts of lead on the surface. It is always good to check the lead content when object has white paint, especially when dealing with an old artefact. In this case the white paint is most likely kaolin (*mpemba*), white mineral clay composed of kaolinite ( $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ ). It is mentioned in several ethnographic sources to be an essential building material in the making of the *minkisi*. This white porcelain clay is present in almost all of them. It can be found in streams and riverbeds. Those bodies of water are associated with the land of the dead (*nsi a bafwa*), and in the folklore the dead are white in colour. So the kaolin painted face is a representation of the spiritual world and means that the figure

is "dead". The whiteness of the kaolin may also represent the clairvoyance of the priest. (MacGaffey 1988:191; 1970:29.) White pigment has been traditionally obtained also from crushed eggshells, seashell powder (*guala muru*), or talcum. (<http://www.coloria.net/kulttuurit/afrikka.htm#kongo>).

Red colour can be produced from iron oxide, Cola nuts, *Baphia nitida* plant (<http://www.coloria.net/kulttuurit/afrikka.htm#kongo>), or blood. Red is often applied onto the objects as coloured clay paste (MacGaffey 1988:193). The colour on the tongue was attached too strongly so a sample could not be taken without damaging the surface. An FTIR analysis revealed that the sample taken of the surface coating on the shoulder was pigment called red ochre that is made of iron oxide (Appendix 4). Red earth (*nsadi*) is also associated with the dead (MacGaffey 1986:140).

Black is easily enough obtained, for example, from coal. It can be turned into paint by using oils, fats, albumen or blood. The black paint on the surface was absorbed into the wood so tightly that sampling could have caused damage. However a sample of the coating on the headgear was ran with the FTIR machine. There were no matching spectrums on the database. But it has some resemblance to acrylates when compared with spectrums from the collaborative database of FTIR library on [www.irug.org](http://www.irug.org), but nothing conclusive could be said.

No special analysis could be made to identify the material of the eyes, but cursory observation led to assume that they were made of keratin, a horn of some local domestic or wild animal. Feathers are mixed into the coating of the headgear (pic. 15) and into the clay of the medicine box. They are black, and dark or light brown. Chickens were used as sacrifice animals in rituals and chicken feathers are easiest to come by. Ethnographic sources tell about two other birds used in context with the making of the *nkisi*, vultures and *kintombo* birds (MacGaffey 1988: 190). Chickens and vultures can both have dark feathers, but the ethnographic sources suggest that the feathers of birds of prey were the favoured material.



Picture 15. Feathers on the hat and around the box, microscopic magnification 50.

The materials from which the *minkisi* were constructed, have to include animal, vegetable, and mineral materials (MacGaffey 1988:190). This particular *nkisi* has its eyes made of animal horn, and there are feathers incorporated in the hat and around the medicine container. Those represent the animal materials. The body is made of wood and the mineral clay around the medicine box contains some traces of vegetable fibres. The surface of the figure has been partially covered with earth pigments, quite haphazardly it seems. It is believed that the dead can be contacted through earth. That is why *minkisi* usually contain clay, earth pigments, stones, or dirt from a grave, which act as symbols or metaphors for the earth or ground (MacGaffey 1988:190).

#### 5.4. Conservation treatments

The use of the object, in its original surroundings, and inside the museum, greatly determines the conservation treatments chosen. Another factor to be taken into consideration, are the conditions in which the object is going to be displayed or stored. This time we knew that at least for the time being the object is going to be kept in the permanent exhibit and in the same conditions it has stayed in for the past 6 years. The decisions made depend naturally on the materials of the object also. For instance porous materials, like wood, ceramics, and bone may be almost impossible to clean (Greene 2006:186). In rituals *nganga* often poured the blood of the sacrifice animal (usually chicken) over the *nkisi* (MacGaffey 1988:201). This can, among other things, pose a work safety question for a conservator<sup>5</sup>. Working with this particular *nkisi*, a facemask was used at all times during the cleaning. The accumulated dust and the fine powder from the corroded iron parts could have caused respiratory problems otherwise. Protective eyewear was also used.

##### 5.4.1. Cleaning

The role of a native consultant is emphasized in literature. In this case, there was no time to contact any members of the culture in question, so decisions had to be made relying on ethnographic texts and conservation principles. In ethnographical conservation less is more, so to speak, therefore the conservation treatments were all done with this in mind. The most basic conservation treatment is cleaning. It is usually the first action to be taken in any conservation process. In this case the aesthetics went hand in hand with the demands of cleaning, the figure needed to be dusted off, and the flaking corrosion had to be removed to prevent further degradation.

---

<sup>5</sup> Other materials that can be found on the *nkisi* include bones of the ancestors, fur, flesh of someone who committed suicide, animal claws, fingernails, hair, bits of warrior remains and so on (Mellor 1992:11). This all should be taken into consideration before handling an object and especially when working closely with one.

The object had gathered a lot of dust during the storage and different exhibitions. Dust is not only an aesthetic problem, but also it is hygroscopic and therefore can attract moisture onto the surface of the object, contributing furthermore to the corrosion of the metal parts. Dust can also be slightly acidic, and it may contain tiny particles that can be abrasive, or other parts that are preferred food for the pests.

Cleaning of the object's wooden parts began with light dusting. Removal of dust was done carefully with a medium sized, soft, synthetic brush. A low-power museum vacuum, with a small aperture was used to gather up the dust, so that the nozzle never touched the object itself. Special care had to be taken when brushing the areas with powdery earth pigments on them, not to accidentally brush it off. It was relatively well attached to the surface, and did not give off that much dust when brushed.

The face of the statue had some sort of "dirt" thrown on it (pic. 16). It is impossible to say whether it is set there by the maker of the object, is it from a ritual use, or has it been attached there to make the object look older and used. Besides light brushing, the face was left as it was.



Picture 16. Dirt around the mouth, white kaolin on the surface.

The glass of the medicine container was smudged intentionally (pic. 11), so just the clear parts were wiped lightly with a damp cotton swab. Feathers (pic. 15) attached to the hat and the box were especially dusty, and brushing them was done very carefully. Some of the nails were covered with powdery soil and they started to dust and grumble even if touched only slightly. They had to be consolidated. Those were covered with thin methylcellulose<sup>6</sup> layer to fix the earth into place. When methylcellulose dries it does not leave a shiny surface, but becomes matt. The thin layer will help the pigments to stay in place and not to dust so easily. They will still crumble if touched.

#### 5.4.2. Iron and Corrosion Removal

The main problem with this particular object is that the iron is corroding very badly. The blades are in worst condition (pic. 11, 13, 17). The surface of the metal is flaking extensively. This is not just an aesthetic problem, but threatens the integrity of the object as well. The showcase that the object is placed in has mainly objects made out of organic materials (pic. 1), therefore the relative humidity is kept suitable for wood, which is too high for iron, hence causing corrosion.

---

<sup>6</sup> Methylcellulose (CH<sub>3</sub>) is a chemical compound that is derived synthetically from cellulose. It is a white powder and when mixed with cold water, it forms a clear and viscous gel. It is a good material for conservation, for example because it is non-toxic.



Picture 17. Corrosion and debris on the surface of the object.

Preventive rather than remedial conservation is preferred, particularly in ethnographic conservation. But when that fails, intrusive conservation is needed. In this particular case removal of the corrosion was necessary, not only for aesthetic reasons, but also to ensure the preservation of the metal parts of the object.

Decision on how to remove the corrosion products was made easy by the fact that the nails and blades are firmly attached to the wood; electrolysis and chemical removal were impossible. The only possibility left was mechanical cleaning. Sandblasting with soft nutshell powder was considered briefly, but protecting the wood from the blast would have been nearly impossible and the removal of the nutshell powder from every crevice of the statue would have taken a lot of time. The decision was made to only use scalpel, bamboo sticks, cures and steel wool for mechanical cleaning. Steel wool was too fine to have an effect on the thick corrosion, and it kept sticking to the rough surface. The best method was to use a sharp scalpel gently so the surface of the metal would not get damaged. If the corrosion products cannot be completely removed it can pose a problem when applying the inhibitor.



The calcium carbonate residue on the surface of the iron was very hard to remove with just the scalpel. They were more prominent in the places where the iron was flaking badly and the corrosion was worse. Especially under the loose flakes there were a lot of big and hard deposits. As it is known, all kinds of acids dissolve calcium carbonate. Citric acid ( $C_6H_8O_7$ ) is a weak organic acid that is produced by fermenting. It was chosen for testing to dissolve the hard deposits. 5% solution of citric acid (in de-ionized water) was made and mixed into methylcellulose to form a thick paste. Paste was easily spreadable and did not drip off.

The citric acid began to work almost immediately and the calcium carbonate deposits started to break down. When the calcium carbonate began to bubble the whole deposit was easy to scrape off with a sharp scalpel. It had to be done quickly, or otherwise the acid would remove too much of the corrosion surface, and shiny metal underneath would be exposed. Right after the spot was wiped with de-ionized water (with a drop of ethanol to remove the surface tension) to stop the acid's effect. It was considered, if it might be necessary to apply an alkaline solution (for example sodium bicarbonate mixture) to neutralize the spots where the acid was used, but it was feared that the bicarbonate might start to form new deposits. Just water was used. A paper was kept underneath a nail or a blade that was undergoing the treatment, so that acid and dirt would not fall on the statue. Deposits closest to the wooden surface were removed with scalpel, so the citric acid did not touch the wood. Some places were impossible to reach properly, even with a curette or small bladed scalpel. Just the removal of the calcium carbonate deposits took approximately 40 hours. When the metal parts were relatively clean they were wiped with pure ethanol and let to dry.

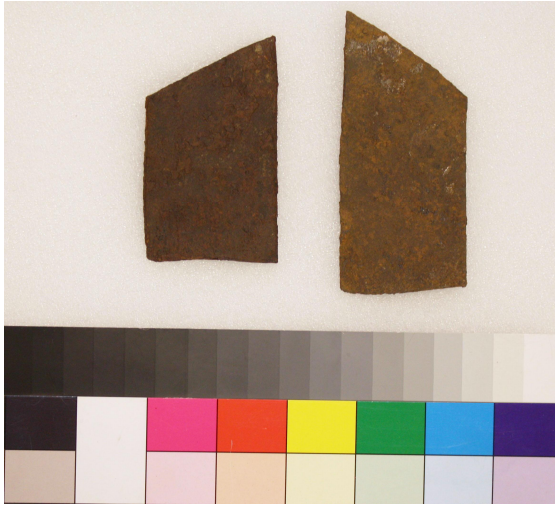
#### 5.4.3. Corrosion Inhibitors

The conditions inside the showcase at the museum are perfected for wood and other organic materials, but are too high in relative humidity for the metal parts of the artefacts. After corrosion removal and cleaning, the iron parts had to be protected against further deterioration. There are several studies conducted to find suitable corrosion inhibitors for the field of conservation. Corrosion is a serious problem for

many branches of industry and that is why a lot of money is used for research to help in its removal and prevention. This research and its solutions for the problem are there to help conservation professionals as well and lot of research has gone into testing the suitability of industrial corrosion inhibitors for conservation use.

Many kinds of corrosion inhibitors and methods are designed to work in different kinds of conditions. Those can be categorized according to their chemical properties, the way they work, or the method of applying. Among those methods are de-humidifying, de-oxygenating, adjustment of the pH levels, and applying mechanical barriers or coatings. (Skerry 1985:7-11.) In this particular case using a mechanical barrier was the only option. Methods for applying the coating include spraying, dipping, and brushing. Application with a small brush was the safest option here, because none of the inhibitor should touch the wooden parts.

All treatments inevitably alter the appearance of the object (pic. 18). The conservator's task is to find the product that minimizes these alterations. Among others, a group of Danish conservation professionals have recently conducted a three-year test on various different corrosion inhibitors that could be used protecting the cultural heritage (Shashoua & Matthiesen 2010). The ideal requirements for the test inhibitors were set relatively high. For instance the treatment should last minimum of three years in any uncontrolled climate conditions, it should preserve the original appearance and function of the object, it should be removable, commercially available, and the treatment should be harmless to the environment and to the person who applies it. (Shashoua et. al. 2010:357.) Consulting the study a suitable inhibitor for this object was found.



Picture 18. The difference between treated (SP 400 II) and untreated blade surfaces.

SP 400 II (CRC Industries) is a long-lasting corrosion inhibitor that can be used on all metal surfaces. It gives the metal a waxy, dry and transparent film (<http://www.crcindustries.com/faxdocs/tchdta/125.pdf>), even though the consistency and appearance of the inhibitor resembles chocolate pudding. It is easily enough applied and due to its consistency it does not drip. Nevertheless the legs and the feet of the object were protected with a plastic film during the application. The work was done under powerful local exhaust ventilation, so exposure to the fumes was minimal. The surface is dry to touch in one hour. The product can be removed with a petrol based solvent or steam ([http://www.crcind.com/wwwcrc/msds/pdf/SP\\_400\\_II-BB10530-9.PDF](http://www.crcind.com/wwwcrc/msds/pdf/SP_400_II-BB10530-9.PDF)).

The iron parts did darken in colour slightly, but the wax leaves a nice uniform, almost matt finish. Using a petrochemical inhibitor might seem a little bit extreme or exaggerated, especially on an ethnographic object, but the conditions where the figure is exhibited in require heavier protection because of the relative humidity is so high. Using a coating has other reasons besides minimizing the deterioration rate, for instance, aesthetics and the desire to maximize the length of the maintenance periods (Hallam et. al. 2001:297).

In future problems may appear in places where the metal meets the wood. It was very difficult to get the coating liquid in the stems of the nails without smudging the wood

with it. The metal parts should be kept under observation in case of new breakouts of corrosion or calcium carbonate deposits. The hardness of the dried product is not high, so care should be taken not to scratch the metal surfaces.

#### 5.4.4. Other Conservation Treatments

First it was thought that the earth pigment on the surface would flake off easily and had to be attached. It was worse in the places where the deposits were thickest. It was decided that as long as nothing touches those spots and there is no abrasion to it, the surface is fine as it is.

The resin-like glue in the seam of the broken right arm was applied rather sloppily, and it was seeping out (pic. 19). It was mainly an aesthetical problem, but some samples were taken for testing to identify the substance<sup>7</sup>. The FTIR analysis was inconclusive, and further three small samples were taken to see the solubility of the glue. Samples were put inside test tubes, one with de-ionized water, one with ethanol, and the last one with acetone. As it turned out, the glue did not dissolve in any of the tested solvents. Anthropological sources tell that resin was often used to attach things on to the minkisi (MacGaffey 1988:194). The old gluing was not perfectly aligned, but it was stable, so it was left as it was. Just the glue around the seam was removed carefully with a sharp scalpel. There were tiny pieces of wood missing around the cap and the edges of the break also revealed the lighter wood beneath the darkened surface colour. Those places were retouched with brown coloured pencils and Winsor & Newton Artists' Water Colours, so they would not stand out too much (pic. 19).

---

<sup>7</sup> Mainly this was done just out of interest to see if the identification was possible.



Picture 19. The right arm before and after conservation.

Few of the nails and blades were unsecured or completely loose. Those were attached back with ethyl methacrylate co-polymer, Paraloid B-72 in ethanol. Paraloid was made sufficiently liquid, with ethanol, to be easily injected with a syringe. The injection needle was inserted between the unsteady metal and the wood, and small amount of acrylate was inserted. The wood was protected with Parafilm during the procedure. The small amount was enough to keep the loosened iron parts in place. Two small pieces of wood were also glued with Paraloid B-72 (Places are marked in the condition assessment picture [pic. 6-7]).

## 6 Conclusions

It is always crucial for a conservator to understand completely the object that they are working on. This means also understanding its history, background, and the meaning (in every possible sense of the word). With ethnographic objects this might be even

harder. The provenance of the ethnographic objects is usually quite hard to find and verify.

For centuries there has been a tradition to sell African objects to westerners, the tourist and researchers alike, and the production of replicas has been going on for almost as long. Not all the objects in museums today are "genuine" or authentic in the sense of the word that they have been used in their intended purpose. But since this "faking" of the cultural objects has been going on since the end of the 19<sup>th</sup> century those objects have their own historical meaning as well.

This particular figure acquired a lot of attention. The conservation work moved ahead rather slowly and took time. Treatments done to the *nkondi* made it look more harmonious and aesthetically pleasing (pic. 20) and it does no longer crumble with the slightest touch. The inhibitor will keep the corrosion at bay, but the object should be kept under observation incase problems arise again.

We can take a hermeneutic approach when looking at this *nkondi*. The object has a myriad of different meanings that change constantly depending on the person, time, and place of observation. All the meanings are unavoidably impossible to get to, and we can only make guesses on most of them.

First of all the *nkondi* was a statue made by a carpenter to get his salary. It is an evidence of the craftsmanship of African sculptors. It was made into a religious object and (presumably) used in a sacred ritual. It is an impressive piece of art. It is a memento brought back from Helinä's countless journeys. It is an ethnographic artefact that gives the museum visitor a unique insight in to a foreign culture. And most recently, it was a subject of this thesis and a companion to an aspiring conservator.



Picture 20. Side view of the *nkondi* after conservation.

## References

## PUBLISHED SOURCES:

Adams, Monni 1989: African Visual Arts from an Art Historical Perspective: *African Studies Review*, Vol. 32, No. 2. Pp. 55-103, African Studies Association

Alfert, Max 1972: Relationships Between African Tribal Art and Western Art: *Art Journal*, Vol. 31, No. 4. pp. 387-396, College Art Association

Behrend, Heike 2003: Photo Magic: Photographs in Practices of Healing and Harming in East Africa. *Journal of Religion in Africa*, Vol. 33. Fasc. 2, Religion and the Media, pp. 129-145. BRILL

Chatelain, Heli 1894: African Fetishism. *The Journal of American Folklore*, Vol 7, No. 27, pp. 303-304

Day, Malcolm 2002: *A Treasury of Saints: 1000 Saints, their Lives and Times*. United Kingdom

Greene, Virginia 2006: Using Case Studies to Examine the Decision-making Process for Cleaning Ethnographic Objects. *Journal of the American Institute for Conservation*, Vol. 45, No. 3. pp. 183-199. The American Institute for Conservation of Historic and Artistic Works

Griffin, Patricia S. & Rushfield, Rebecca 2006: Towards a Clean Slate: Current Thoughts on the Responsibility, Philosophy, Practice, and Controversies of Cleaning Cultural Property: *Journal of the American Institute for Conservation*, Vol. 45, No. 3. pp. 163-164. The American Institute for Conservation of Historic and Artistic Works

Hallam, David; Thurrowgood, David; Ontieno-Alego, Vincent; Creagh, Dudley; Viduka, Andrew & Heath, Graham 2001: Studies of Commercial Protective Petrochemical Coatings on Ferrous Surfaces of Historical and Museum Objects. *Proceeding of the ICOM Committee for Conservation Metal Working Group*, pp. 297-303

Johnson, Jessica S.; Heald, Susan; McHugh, Kelly; Brown, Elizabeth & Kaminitz, Marian 2005: Practical Aspects of Consultation with Communities, *Journal of The American Institute for Conservation* Vol. 44, No. 3, pp. 203-215, American Institute for Conservation of Historic and Artistic Works

Jones, Denny A. 1996: *Principles and Prevention of Corrosion*, 2<sup>nd</sup> edition, Department of Chemical and Metallurgical Engineering, University of Nevada, Reno

Lehtimäki, Helena 1998: Minä, Helena Rautavaara. Otavan kirjapaino, Keuruu

MacGaffey, Wyatt 1970: The Religious Comissions of the Bakongo. Man, New Series, Vol. 5, No. 1, pp. 27-38. Royal Anthropological Institute of Great Britain and Irland

MacGaffey, Wyatt 1988: Complexity, Astonishment and Power: The Visual Vocabulary of Kongo Minkisi. *Journal of Southern African Studies*, Vol. 14, No. 2; Special Issues on Culture and Consciousness in Southern Africa, pp. 188-203



MacGaffey, Wyatt 1990: The Personhood of Ritual Objects: Kongo *Minkisi*. *Etnofoor*, III/1 Fetishism, pp.45-61

MacGaffey, Wyatt 1998: Magic, or as we usually say 'Art': A Framework for Comparing African and European Art, in *The Scramble for Art in Central Africa*. Edit. Schildkrout, Enid and Keim, Curtis, Cambridge and New York: Cambridge University Press, pp. 217-235

MacGaffey, Wyatt 2000: Aesthetic and Politics of Violence in Central Africa. *Journal of African Cultural Studies*, Vol. 13, No. 1, pp. 63-75. Taylor&Francis Ltd.

Mbiti, John S., 1991: Introduction to African Religion, 2<sup>nd</sup> Edition. Great Britain

Mellor, Stephen P. 1992: The Exhibition and Conservation of African Objects: Considering the Nontangible; *Journal of the American Institute for Conservation*, Vol. 31, No. 1, pp. 3-16, Conservation of Sacred Objects and Other Papers from the General Session of the 19th Annual Meeting of the American Institute for Conservation of Historic and Artistic Works. Albuquerque, New Mexico

Migeod, F. W. H. 1919: The Basis of African Religion. *Journal of the Royal African Society*, Vol. 19, No. 73, pp. 20-39. Oxford University Press

Muñoz Viñas, Salvador 2005: Contemporary Theory of Conservation, Great Britain

Rose, Carolyn L. 1988: Ethical and Practical Considerations in Conserving Ethnographic Museum Objects, in *Senri Ethnological Studies No. 23. The Museum Conservation of Ethnographic Objects* pp. 5-43; Edit. Morita, Tsuneyuki & Pearson, Colin. National Museum of Ethnology of Japan, Kyoto

Selwyn, Lyndsie 2004: Metals and Corrosion: A Handbook for the Conservation Professional. Canadian Conservation Institute, Ottawa

Shashuan, Y. & Matthiesen, H. 2010: Protection of Iron and Steel in Large Outdoor Industrial Heritage Objects, in *Corrosion Engineering, Science and Technology*, Vol. 45, No. 5, pp. 357-361

Skerry, Brian S. 1985: How Corrosion Inhibitors Work, in *Corrosion Inhibitors in Conservation*. Occasional Papers No. 4. The United Kingdom Institute for Conservation of Historic and Artistic Works of Art, edit. Keene, Suzanne, pp. 5-12

The Geographic Journal, A West African Fetish. *The Geographic Journal*, Vol. 46, No. 4, pp. 253-254. Blackwell Publishing on behalf of the Geographic Society

van Beek, Gosewijn 1990: The Rites of Things: A Critical View of Museums, Objects, and Methaphors. *Etnofoor*, III/1 Fetishism, pp. 26-44

UNPUBLISHED SOURCES:

The object information sheet from the Helinä Rautavaara Museum pp. 1-2

## WEB:

[http://www.crcind.com/wwwcrc/msds/pdf/SP\\_400\\_II-BB10530-9.PDF](http://www.crcind.com/wwwcrc/msds/pdf/SP_400_II-BB10530-9.PDF) (Accessed on 20 April 2012)

<http://www.crcindustries.com/faxdocs/tchdta/125.pdf> (Accessed on 20 April 2012)

<http://helinamuseo.fi/tietoa-museosta/helina-rautavaara> (Accessed on 2 April 2012)

<http://irug.org/> (Database used 14-16 April 2012)

<http://www.coloria.net/kulttuurit/afrikka.htm#kongo>, Päivi Hintsanen. (Accessed on 5 March 2012)

APPENDIX 1

*Nkondi* before conservation (1/2 & 2/2)





APPENDIX 2

*Nkondi* after conservation

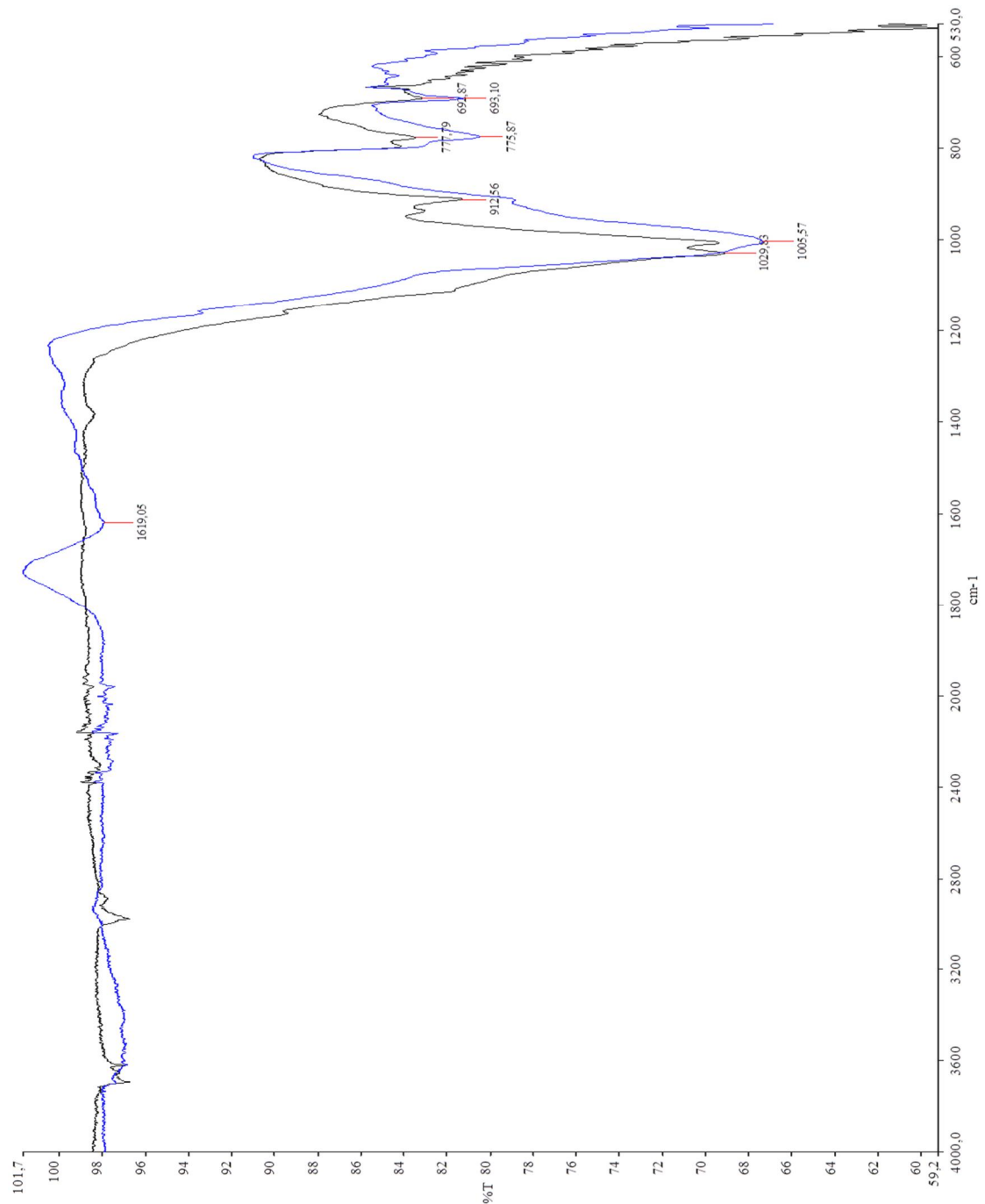


X-ray picture of the *nkondi*



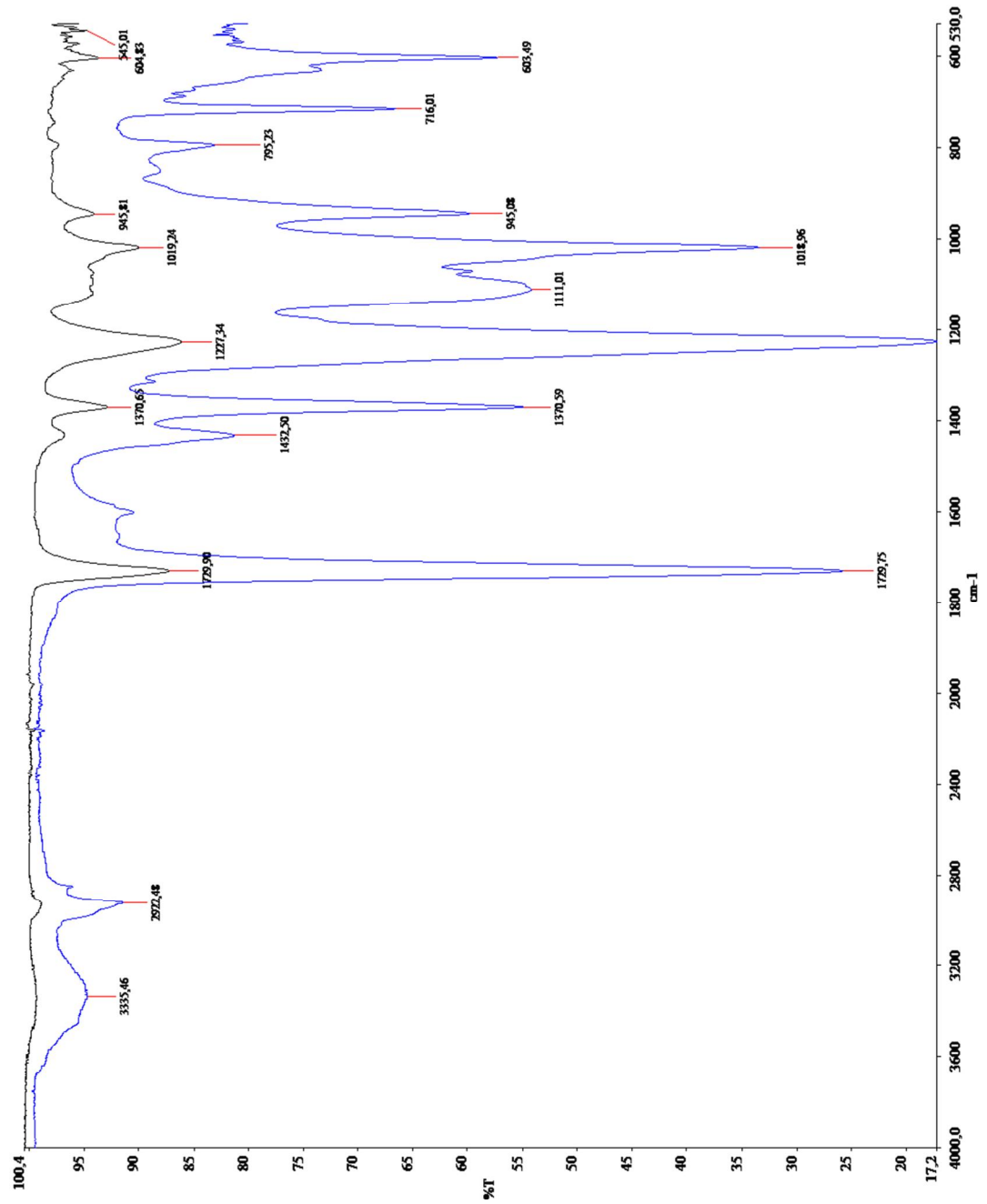
## APPENDIX 4

### FTRI analysis of the surface coating on the shoulder



Spectrum of the sample no. 5 colour is black and the spectrum of red ochre from the database is blue. Any deviations are due to impurities in the sample.

## FTIR analysis of the "waxy" substance



Spectrum of the sample no. 7 colour is black and the spectrum of PVAC glue from the database is blue. Any deviations are due to impurities in the sample and the weakness of the measurement.



KiKongo vocabulary of related words

Bakulu = Ancestors

Bilongo = Medicine

Kindoki = Witchcraft

Koma nloko = Hammering curse

Konda = To hunt alone

Mfumu = Chief

Mpandulu = Ceremony where minkisi gets its power

Mpemba = White clay, cemetery, land of the dead

Mufyela, Mutadi = Divination

Nganga (pl. banganga) = Priest, shaman, magician

Nganga'a nkisi = Witch doctor

Ngunza = Prophet

Ngyadulu = Ceremony where chief gets his authority

Ndoki = Witch

Nitu = Body

Nkondi (pl. minkondi) = Hunter

Nkutu = Bag

Nsi a bafwa = Land of the Dead

Nsadi = Red earth

Salu = Medicine pouch

(Sources: MacGaffey 1970, 1986, 1988, 1990 & 2000)