Preserving unique specimens

Anne Lisbeth Schmidt
Bevaringsafdelingen
Nationalmuseet i Brede
DK-2800 Lyngby

When studying which objects are selected for exhibition, it is often found that the same objects are exhibited again and again, year after year. To find out what made a particular object special and unique is a matter of interest to the people who handle them. Such objects often require more attention than others which are left to themselves in darkness in climatized, dustfree storerooms.

The Ethnography Department of the National Museum in Copenhagen holds one of the world's largest collections of Inuit objects. The expedition that has contributed with the largest part of the increase in the collection is The Fifth Thule Expedition, The Danish Ethnographic Expedition to Arctic North America 1921-1924, headed by Knud Rasmussen. Approximately 15,000 specimens of skin, bone, wood, etc. were collected among Canadian Inuit groups and sent to Denmark to be incorporated into the National Museum.

Netsilik Eskimo amulet boy's costume

Frequently it was Knud Rasmussen himself who persuaded the Inuit families to barter their costumes and tools for the expedition's tobacco, textiles and other goods. More than any other group, the Netsilik Eskimos lived at subsistence level. The Netsilik area is close to the magnetic North Pole where the winter is extremely cold and the summer is short and humid. Peter Freuchen, member of the expedition, wrote about a Central Inuit tribe: 'We shall not be able to collect much among these people... not because of laziness, but these people have no possessions. They are the most terrible Eskimos I have ever seen. No-one has more than one costume, and it is almost impossible to get skins for new clothing. Knud has had to put all his authority into procuring just one costume of each kind and could not get more.'

Among the items Knud Rasmussen succeeded in collecting among the Netsilik Eskimos was a costume of a small boy, Arssautilik Tertâq, made of caribou skin to which no less than 80 amulets were attached. Knud Rasmussen described the coat and its amulets in detail in Report of The Fifth Thule Expedition. The objects from the Fifth Thule Expedition were entered into the inventory of the Department of Ethnography, from which I quote:

"P29.501ab, a boy's inner coat with amulets. a) caribou skin coat, usual cut with hood. Suspended on the back are... caribou skin ('luck in salmon fishing'); dog harness ('fighting strength')... Over the shoulder a strip of bearded seal with bear teeth ('health and vigour')... hair from an old man's temples (sewn onto the hood's temples, assures long life)...
b) raven skin carried around the neck ('to get close to the caribou where they swim without being seen')" (Fig. 1).

The amulets were supposed to give the boy strength and vigour to survive in this harsh country. One can wonder why the family would be willing to relinquish such an important piece of garment. Jørgen Meldgaard, curator at the Ethnography Department of the National Museum, has explained that the power of the amulets will remain with the individual to whom they were first given. And it came true. In the 1960s, Jørgen Meldgaard was informed that Tertâq had become mayor of the small town of Pelly Bay in the central Netsilik Eskimo area in Canada's north-west territories. And Tertâq had been conferred the order of merit by Canada's president Pierre Trudeau for having contributed to creating a sound Inuit community with church, school and library. After the return to Denmark of the Fifth Thule Expedition, a number of minor, short exhibitions were arranged presenting some of the many objects collected on the expedition. Very probably the amulet boy's costume was among the objects displayed. On June 6, 1936, almost two years before the opening of the enlarged National Museum, the Ethnography Department opened 20 new permanent exhibition rooms with Inuit specimens; half of these rooms were reserved for objects from the Fifth Thule Expedition. The amulet boy's costume was displayed on a stand in a centrally placed showcase near the windows.
In 1970 the outdated permanent exhibitions were removed, and in 1975 the Department of Ethnography opened its new permanent Inuit exhibitions. The number of exhibits was smaller this time, but the Fifth Thule Expedition was still represented, e.g. with the amulet boy’s costume. Filled with tissue paper, the costume was displayed mounted on a dais in a wall showcase with built-in light. The Eskimo exhibits were closed in 1988 in connection with the renovation of the National Museum.

Fig. 1. Arssautlik Tertâq in his amulet costume. Photo: The Fifth Thule Expedition, Ethnography Department, National Museum of Denmark
It was then known that the museum’s Inuit skin objects contained large quantities of insecticides, (DDT, Lindan, etc.). The conservation staff wore breath masks and disposable overalls when removing the objects. The author of this article took down the amulet boy’s costume. A gentle touch of the garment tore the shoulder apart - what a shock to see the skin torn and to have damaged this rare and outstanding specimen.

Tears and perspiration ran, but this was not the time for making good the damage. With great care, the amulet costume was packed, together with the other Inuit objects, to be placed in temporary storage in Brede.

When the renovated National Museum opened on June 4, 1992, the amulet boy’s costume was back in its place in the Ethnography Department’s permanent exhibit Peoples of the Earth.
The shrinkage temperature is defined as the temperature at which protein, i.e. collagenous derm or skin material, is destroyed in water. Collagen are thread-like fibres which shrink to 1/3 of their original size when heated in water. Collagen can be described as the derm tissue’s most important building block, and its shrinkage temperature is therefore an expression of the collagen’s condition.

Skins dressed the Inuit way, i.e. mechanically processed without the addition of real tanning, will in the fresh state have shrinkage temperatures a little above the temperatures of raw hide, i.e. above 62-68°C. Shrinkage temperatures below 62°C indicate collagen deterioration. Much decayed skins will shrink at normal room temperature’s humidity. Young’s method was used for the analysis of the skin specimens from the Fifth Thule Expedition: microscope and slow heating of the test material on a heating bench. Two temperatures were registered: \( T_{S, \text{start}} \) at which ca. half of the skin fibres in the visual field had shrunk, and \( T_{S, \text{end}} \) at which all of the skin fibres had shrunk.

It must be noted that this analysis requires the person doing the measurements to be extremely well trained. Larsen et al. have in recent years done much work with this analysis. Their definitions of when shrinking will occur are different and more accurate to-day.

**Shrinkage temperature of stored and exhibited specimens**

The average shrinkage temperatures of the men’s boots from the Fifth Thule Expedition which have remained in storage were almost the same as those of newly tanned skins, i.e. \( T_{S, \text{start}} \geq 59.7°C \) and \( T_{S, \text{end}} \leq 68.9°C \). This is highly surprising at first glance, seeing the poor conditions under which they had been kept in former times: piles of skin objects in unheated, non-climatized storerooms exposed to light, dust, insect attacks, insecticides, desiccation, water damage, mould, etc. But surprisingly, the stored skin specimens were in a good state of preservation in view of the shrinkage temperature measurements. Test samples from the amulet boy’s costume showed a low shrinkage temperature: \( T_{S, \text{start}} \geq 48°C \) and \( T_{S, \text{end}} \leq 59.6°C \), indicating decay in the collagen contents of the garment.
Test material sampled and analyzed in December 1994 showed similar shrinkage temperature, and it can therefore be concluded that the decay does not seem to have accelerated during the eighteen months the costume has been exhibited, as far as indicated by the shrinkage temperature analysis. No new tears have been formed in the fur.

**Conclusion**

We know that light affects organic materials. On skins, prolonged exposure to light will cause deterioration of the proteins. Tears and cracks are visible signs of this.

The amulet costume has been exposed to the action of massive light during the almost fifty years it has been on show. The first 34 years, from 1936 to 1970, the costume was exhibited both in daylight and artificial light. However, the light did not focus on one particular spot on the costume, it was diffused over the whole surface facing the windows. The next 13 years, 1975 - 1988, the costume was on display in artificial light which focussed on the shoulder area. The temperature in the showcase is likely to have been relatively high on account of the light being mounted inside the showcase; this caused low humidity and desiccation of the skin. Exposure to light, and desiccation caused by low humidity, made the skin so fragile that even the gentlest touch made a tear.

The most desirable way of preserving the amulet costume for the future would be to keep it stored in a dark, climatized room.

The Department of Ethnography, however, cannot dispense with the amulet boy's costume in the exhibition. Its magic and its history makes it very special, almost alive!

The future conditions for preserving the amulet costume must be: least possible exposure to shortest possible, changing illumination, optimum climatic conditions, regular inspection (through the glass of the showcase), and a minimum of handling. The costume should never travel. The state of preservation should be controlled at regular intervals through measurements of the shrinkage temperature.

High priority should be given to keeping a scrupulous record of the amulet costume's life and fate in the years to come.

This also goes for all other objects on show, be they unique specimens or not. Paradoxically, the claim for popularization and exhibition is at the root of any object's final destruction.

**Notes and references**

1. Letter dated May 16, 1923, from Peter Freuhen to Thomas Thomsen, Curator. Archives in the Ethnography Department


