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Waking the Dead: The Resurrection of a Tablecloth

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Abstract

In the summer of 1963, two 17th-century Dutch flowered tablecloths in tapestry technique were treated using the adhesive poly(vinyl acetate) (PVAc). In 1988, attempts to remove this adhesive and the support layer from the objects caused a lot of damage. The tablecloths were subsequently stored until 1999, when one of them was conserved using stitching. The other was in much worse condition and was considered a hopeless case.

Investigations into the conservation history of the tablecloths revealed they were part of a project, started in the late 1950s by the University of Delft, the Netherlands, to investigate the use of adhesives for treating fragile objects such as silk banners. How the decision was made to apply this technique to the tablecloths remains unclear. In 2009, another conservation project was started on the "hopeless case." Camouflage techniques were used to hide holes, missing leaves, and flowers. The tablecloth was mounted on an aluminum (Alucore) panel using minimal stitching, and covered with nylon net. The aim was to restore some of its original splendour and to protect it from further decay. The tablecloth will go on display in 2013.

Titre et Résumé

Comment donner une deuxième vie à une nappe très endommagée

Au cours de l'été 1963, deux nappes à motif floral, fabriquées au XVII^{e} siècle en Hollande selon la technique du tissu tapisserie, ont été traitées au moyen d'un adhésif à base de poly(acétate de vinyle) [PVAc]. En 1988, des essais visant à décoller l'adhésif et la couche de renfort ont grandement endommagé les objets. Les nappes ont par la suite été entreposées jusqu'en 1999, lorsqu'une d'entre elles a été restaurée en réalisant des points de couture. L'état de dégradation de la seconde était beaucoup plus importante et celle-ci était considérée comme un cas désespéré.

L'étude de l'historique des travaux de restauration des nappes révèle que ceux-ci ont été réalisés dans le cadre d'un projet lancé à la fin des années 1950 par l'Université de Delft, aux Pays-Bas, lequel portait sur l'utilisation d'adhésifs dans le traitement d'objets fragiles comme des bannières en soie. Il n'a pas encore été possible d'établir clairement sur quelles bases la décision avait alors été prise d'employer cette technique particulière pour traiter les nappes. En 2009, un autre projet de restauration a été mis en œuvre afin de traiter la nappe en piètre état qui constitue un « cas désespéré ». Diverses techniques de restauration à effet de camouflage ont été employées pour cacher les trous et traiter les plages de feuilles et de fleurs manquantes. La nappe a ensuite été montée sur un panneau d'aluminium (Alucore), en faisant le moins de points de couture possible, et recouverte d'un filet de nylon. Les travaux visaient à redonner à l'objet une partie de sa splendeur d'antan et à le protéger contre toute dégradation additionnelle. La nappe pourra de nouveau être exposée en 2013.

Introduction

In tapestry conservation, stitching techniques are the most widely used. In some cases, however, adhesive treatments have been carried out, because the condition of the tapestry was considered too weak to withstand stitching. In the Rijksmuseum collection there are two tablecloths that were treated in 1963 with an adhesive technique (BK-KOG-40 and BK-KOG-41). In 1988 attempts were made to reverse the treatment but results were not satisfactory and the condition of the objects did not improve at all. Therefore the tablecloths were put in storage. In 1999 their condition was re-evaluated. One of them (BK-KOG-40) could be treated with traditional stitching techniques. The other, however, was considered too weak for such treatment. After careful consideration it was decided to mount it on a honeycomb aluminum support and to use dyed silk patches to camouflage holes.

History of Tapestries

Tapestries are large textiles in tapestry weave, with a continuous warp and a discontinuous weft. The warp is usually either wool or linen. It is completely covered by the weft, which consists of wool, silk and sometimes metal threads. The weavers sit next to each other and work on a section about 50-60 cms wide. The design or cartoon lies underneath the warp or hangs behind the loom. The warp is stretched on the loom and the tapestry is woven at an angle of 90 degrees and from the reverse side (see Figure 1). When the tapestry hangs, it hangs from the weft and not the warp.

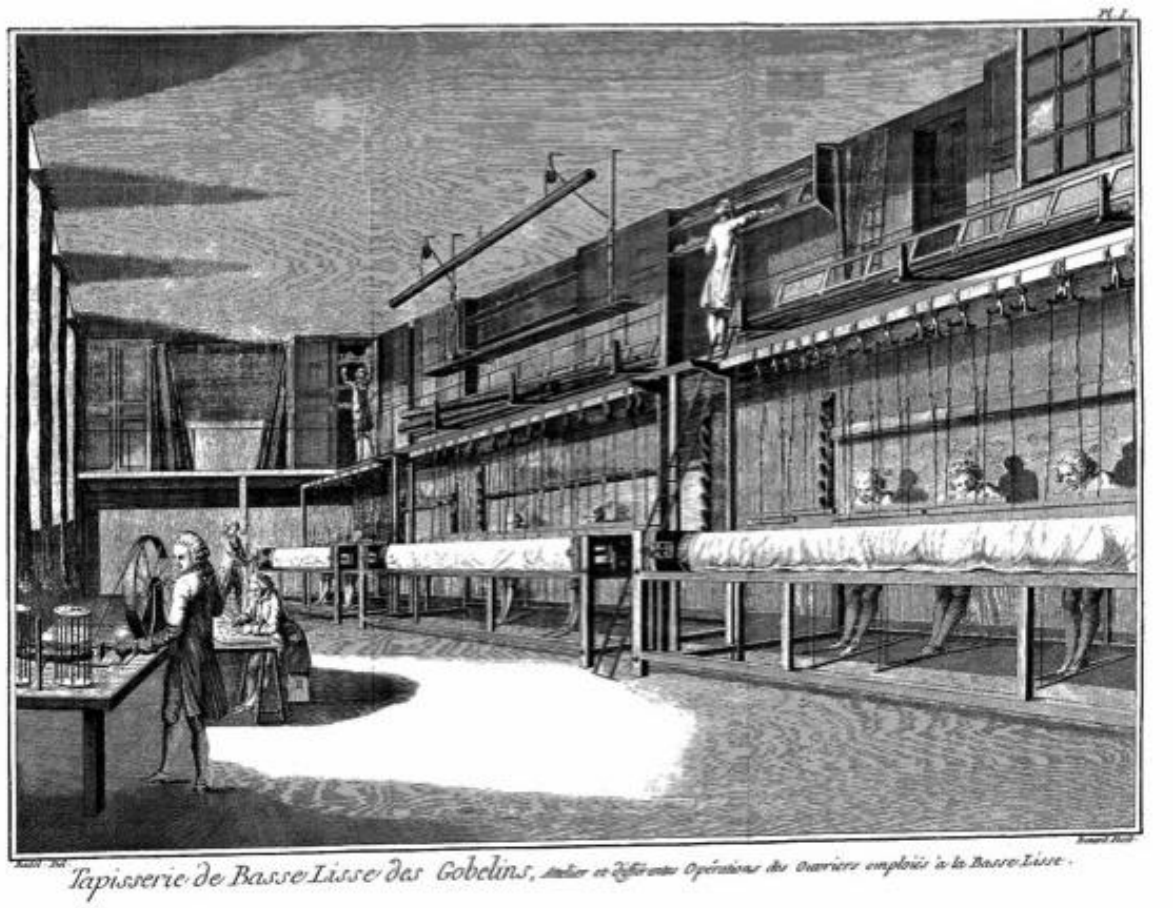

Figure 1. Tapestry workshop at the Manufacture des Gobelins, from Encyclopedie Diderot.

History of Textile Conservation at the Rijksmuseum

In 1937 the textile conservation studio of the Rijksmuseum was set up. It was the first textile conservation studio in the Netherlands. Mr Bloedhouwer, the first head of the studio was trained in traditional restoration techniques at the Manufacture des Gobelins in Paris. It was still considered acceptable to remove 'rotten' silk entirely and to replace it with new silk. Holes were mended by inserting new warps and in-weaving with new wool. In general, the conservation of a tapestry took quite a number of years, even if six or more people were working on it simultaneously. Of course this is not only extremely time consuming but also very expensive!

History of the Development of Adhesive Techniques

In 1953, the Dutch Shell Oil Company offered a considerable amount of money to the Department of Fibre Technology and Textile Technique at the Technical University of Delft. The aim was to do research on the use of synthetic adhesives for the conservation of flags and banners.Traditionally they were sandwiched between two layers of net using a running

stitch.This caused the silk to deteriorate even more and created holes in the paint. The use of an adhesive technique could result in a more even support.

The project started based on the idea that the flags should stay visible on both sides and that the method should be reversible. The adhesive should be transparent and preferably water-soluble. Mowiol, a poly(vinyl alcohol) (PVAL) was considered the best option. It was thought that textiles, once attached to a stiff support, would not be vulnerable to further deterioration caused by bending, folding or other movement of the fibres.

In the period between 1953 and 1956 several flags and banners were mounted onto glass or poly(methylmetacrylate) (Perspex) using PVAL (Sieders 1956).

Adhesive was poured onto the glass or Perspex and the flag or banner was laid on top of the wet adhesive. This caused the adhesive to penetrate into the structure of the textile and made it possible to flatten the creased bits and to put small pieces back in place.

Some of these banners still remain in good condition, which proves the method actually works quite well, the only disadvantage being that the objects do not look and feel like textiles any more. But, aesthetics, ethics and authenticity were no concern. Soon, however, it turned out that PVAL became insoluble after several years, due to crosslinking.

Around the same time, research was done using very thin textile materials such as silk crepeline and Terylene (polyester) as supports. Setamul, a poly(vinyl acetate) (PVAC) was used as adhesive (Lodewijks 1964). Paint was often added to the adhesive to mask holes in the object, because the support fabrics were only available in white. Very brittle objects were often sprayed with poly(vinyl butyral) (PVB) as well, to prevent the loss of fibres.

In the Netherlands, research was carried out by Leene and Lodewijks at the Institute for Fibre Technology and Textile techniques in Delft. In 1961, Lodewijks was appointed chief scientific researcher at the Rijksmuseum. The same year Leene presented a paper on adhesive methods for the conservation of flags and banners at the International Institute for Conservation of Historic and Artistic Works (IIC) conference in Rome. She mentioned that the criteria for adhesives were that they should be transparent, colourless, sufficiently strong, highly permanent, free from harmful chemicals, applicable at room temperature and should not affect appearance (Leene 1961). At the same conference Beecher from the Victoria & Albert Museum gave a presentation on the reinforcing of weakened textiles with synthetic-fibre net. He mentioned the use of PVAC and Terylene (polyester) square-meshed net for the conservation of a tapestry measuring 12 feet x 8 feet. In this case the adhesive was spread on the support using a brush. It was left to dry completely and it was applied to the object using a heated spatula or iron. He clearly states that his method ‘does not saturate the fibres’. This method, which is still used today, is called heat-sealing (Beecher 1961).

History of the Treatment and the Present Condition of the Tablecloths

The Rijksmuseum has two tablecloths woven in the third quarter of the 17th century, probably in Delft by the workshop of Maximiliaan van der Gucht. Both have a dark blue ground on which flowers are spread around a medallion with a depiction of Flora. Combining pictures of both objects clearly shows that the same design was used. One has an extra row of flowers at both ends (see Figure 2).

Figure 2: Photos of the two tapestries combined (inv BK-KOG-40 and BK-KOG-41). This shows that they are almost identical.

A private owner presented them to the Royal Historical Society in 1859 and in 1885 they were given on permanent loan to the newly opened Rijksmuseum. They have been on display for a long time, not as tablecloths but as tapestries, i.e. hanging against the wall.

No record was found regarding their condition in 1859, in 1885 or later. There is only a set of two black and white pictures that clearly show holes in the lower left hand corner of one of the objects (see Figure 3).

Figure 3: Holes in the left hand lower corner are clearly visible (BK-KOG-41). Date unknown.

They do not appear in any of the Rijksmuseum annual reports before 1963, when it is mentioned that two flowered table carpets were restored using an adhesive treatment because of it being faster and cheaper than traditional methods. The adhesive that was used on the tablecloths was Setamul, a PVAC and the backing was Terylene (polyester).

Even though adhesive techniques were quite new and mainly developed for the treatment of silk fabrics, flags and banners, the decision was made to treat both objects with this technique.

As far as we know only one other tapestry, the one at the V&A mentioned earlier, was treated with a synthetic adhesive. No evidence of this method being widely used has been found to date.

Because of the structure and the loose ends of the weft hanging on the reverse side an adhesive is much less efficient on tapestries than on silks or flags. Because the warp is completely covered by the weft, the warp is not adhered to the backing so it can still break. Furthermore, it is much more difficult to remove the backing without damage. My conclusion is that reversibility was no concern at all in this particular case.

Before applying the support layer, the tablecloths were washed using Lux, a very alkaline soap that must have had a terrible effect on the wool, drying it out. For reasons yet unknown, it was decided not to use the heat-sealing method to attach the backing to the object, but to spread the PVAC adhesive on the support fabric, let it dry out a bit and adhere it directly to the tablecloths.

This, of course, caused a lot of the adhesive to migrate into the structure of the objects. Apart from mentioning this treatment in the annual report, no documentation was kept. Therefore, it is unknown who carried out this treatment and why the choice was made not to use the heat-sealing method. It is not even known if the result was considered satisfactory.

After the treatment in 1963, the objects were stored until 1971, when they were put on display in the Rijksmuseum as part of an exhibition on 17th century flowered tablecloths. After this exhibition they were probably stored again. No evidence of them being on display anywhere in the museum has been found yet. The tablecloths are mentioned again in the annual report of 1988; their condition is described as: "adhered to a polyester backing, retouching with watercolour, hardly any other signs of restoration, some couching". This suggests post-1963 treatments but no record of them was found. The linen warp is described as extremely brittle, the condition of the wool as reasonably good, and most of the silk as in bad condition or missing altogether.

It was considered necessary to carry out yet another treatment on both tablecloths. The idea was to remove the retouching by rinsing and then to wash the objects. It was expected that the adhesive would swell and soften during washing which would make removal of the backing possible. Advice was sought from the Central Laboratory in 1990. Analysis proved that the adhesive that was used to apply the support was indeed PVAC.

Research was carried out on a couple of test samples of tapestry that were treated with the same adhesive in the period between 1959 and 1962. Trials with a suction table and acetone had little effect. Immersion in acetone and rinsing with acetone gave the best results. Of course you would have to have very specific equipment and a lot of acetone to be able to carry out such a treatment. This was not considered possible in the Rijksmuseum conservation studios, so another method was chosen.

The largest tablecloth (BK-KOG-41) was treated first. It was washed, using warm to hot water. The support layer could be removed quite easily by pulling it off under warm running water. The adhesive still left on the reverse of the object turned white and became the consistency of chewing gum (see Figure 4). It was impossible to remove. The object was then washed again, using a detergent, and left to dry.

Figure 4: Residue from the adhesive on the reverse after removal of the backing (BK-KOG-41).

To remove the remains of the adhesive from the reverse an acetone poultice, consisting of several layers of blotting paper and thick cotton with a layer of blotting paper with acetone in between, was used. It was left for 3 hours on areas of 30 x 30 cms at a time. Unfortunately it caused part of the adhesive to dissolve and migrate even further into the woollen fibres, which of course made the object even more brittle than before treatment.

Because of this bad result, the other tablecloth (BK-KOG-40) was treated in a slightly different way. The support layer was pulled of mechanically, using surgical blades to separate it from the object. This resulted in a lot of damage in the silk areas, which were pulled out almost completely, but it removed much more of the adhesive before washing and caused the result to be less worrisome than that of the first. Of course there was a lot of damage to the silk, but, in general, much less adhesive was left on the reverse and it was much more supple.

Waking the Dead

Both tablecloths were put in storage without further treatment. They were more or less written off until 1999, when the smaller and less brittle one was stitched to a support layer, which made it suitable for display again. The larger one was in terrible condition. Large holes were apparent, especially around the corners where a lot of the adhesive seemed to have accumulated. Not only the warp but also the woollen weft split and broke like glass. The tablecloth could not be handled or rolled without causing further damage.

Because of other, more urgent projects, the tablecloth was left in storage. A couple of years ago, however, it was decided that at least one of the tablecloths should be on display when the Rijksmuseum reopens in 2013. Thinking about possible treatments, there were several problems to tackle. First of all the object measures 1.95 by 2.75 meters. The warp was extremely brittle, especially around the edges, which made handling of the object quite dangerous and undesirable. Most silk wefts were badly damaged and both silk and woollen wefts were brittle, and in some cases, whole leaves or petals were missing (see Figure 5).

Figure 5: Both warp and weft are extremely brittle due to adhesive migrating into the structure (BK-KOG-41).

Immersing the tapestry in a solvent would probably only make the adhesive penetrate deeper into the fibres. Mechanically removing the last remains of the adhesive was also no option. Therefore a solution had to be found that supported the weaker areas, made the object safe for handling and exhibition, camouflaged the damage and made it pleasing to the eye. A former colleague did some trials of camouflaging the holes with digitally printed woollen patches under the holes, but she could not get the colours right. This method, called Karwat*Ti*, however useful for repeating designs, was too complicated for this object.

On a study trip to Germany, we saw textile conservators using silk patches in tapestries. They used bourrette, which is a fabric woven from the uneven yarn from natural silk waste. It has a coarse, lusterless surface and a natural colour. It is available in different weaves, one of them a

rib weave very similar to tapestry weave. This material can be dyed easily using Deka-silk, an acrylic for silk painting, which has an extremely good light fastness and is easy to mix colours with to match the surroundings of a hole.

The tablecloth was put flat on a table and patches were made for the large number of holes. These were inserted under the tapestry and stitched to the back, using a few large stitches with round needles in relatively supple areas in order to prevent more damage (see Figure 6).

Of course this did not solve the problem of the tablecloth being so stiff and brittle.

Figure 6: pieces of dyed silk placed under holes (BK-KOG-41).

Because there is no safe way to make this object suitable for hanging it was decided to cover a large sheet of aluminum honeycomb with polyester felt. This felt would prevent the tablecloth from sliding down when placed at an incline of 80 degrees, but this alone would not be sufficient. It was decided to use some stitching in the less brittle and stronger areas to attach the tablecloth to the felt. The extremely brittle edges and corners were not stitched at all.

Since some small bits and pieces could not be fixed to the felt a layer of nylon net was applied over the whole object. This was dyed a very dark blue which made it almost invisible. The net was stretched very tight over the surface of the tablecloth.

Lessons to be Learned

Although the treatment that was carried out in 1963 seemed a good, cheap and fast solution at the time it caused many problems later on. These are mainly due to the fact that too much adhesive was used and the support was adhered to the backing when the adhesive was still wet. The much safer heat-sealing method, which is still used today, was not used in this case. This method involves much less adhesive and is therefore much more reversible, even after more than 25 years.

Because of the attempts that were made to reverse the treatment in 1990, the condition of the objects became even worse than it was in 1963. This decision would probably not have been taken today; the objects would probably have been left the way they were without trying to remove the support nor the adhesive. The objects would have been stiff but would not have suffered further damage and loss of material. This would have been preferred over handling the objects so intrusively and risking penetration of the adhesive into the wool while attempting to remove the adhesive.

Figure 7: Detail of left hand lower corner before and after conservation.

Conclusion

We do realize that the tablecloth can hardly be called a textile anymore. But, it truly is an advantage that it can be handled and exhibited without causing further damage. One day the nylon net is going to be in need of replacement. We do have a lot of experience with nylon net in the Netherlands, and therefore know that as long as light levels are kept low (50-100 lux) it will last at least 15-20 years. If the polyester felt ever needs replacing take the stitching needs to be taken out, thus removing the tablecloth. It will be put back on a newly covered aluminum board. We do not consider this to be problematic.

Acknowledgements

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Materials and Suppliers

Alucore: 3A Composites (http://www.3acomposites.com/).

Bourrette: Whaleys Bradford Ltd, U.K (http://www.whaleys-bradford.ltd.uk/).

Nylon net (mono-filament, scoured and heat set): Dukeries Textiles and Fancy Goods, Spenica House 15 A Melbourne Road, West Bridgford, Nottingham, Nottinghamshire NG2 5BG, U.K.

Polyester felt: Vilta (local store), Amsterdam

Setamul: not available any more

Terylene (in this case Tergal, produced by Rhodiaceta): not available any more

Mowiol: Hoechst (not available any more)

Author Biographies and Contact Information

Suzanna Linda Meijer was trained in Textile Conservation at the State Training School for Conservation in Amsterdam, the Netherlands, graduating in 1992. She started working at the Rijksmuseum in 1993 and, since 1997, has been Head of Textile Conservation. The Rijksmuseum has a very important collection of textiles, including costume, accessories, tapestries, oriental carpets, and linen damasks. Suzan's main fields of interest are tapestry, upholstery, and interior textiles. Besides working as a textile conservator, she has been involved in the training of textile conservators at the State Training School for Conservators and the University of Amsterdam for many years. She is now working on tapestries that will be on display in the new Rijksmuseum, which will reopen in 2013.

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Suzanna Linda Meijer a suivi une formation en restauration des textiles à l'école d'État de la restauration d'Amsterdam, aux Pays-Bas, dont elle a obtenu son diplôme en 1992. Elle a commencé à travailler au Rijksmuseum en 1993 et depuis 1997, elle y est la responsable de la restauration des textiles. On trouve au Rijksmuseum une vaste collection de textiles, dont des costumes, des accessoires, des tapisseries, des tapis orientaux et des damassés de lin. M^{me} Meijer s'intéresse plus particulièrement aux textiles utilisés en tapisserie, en ameublement et en décoration d'intérieur. Outre son travail en restauration des textiles, elle forme depuis de nombreuses années d'autres restaurateurs de textiles à l'école d'État de la restauration et à l'Université d'Amsterdam. Elle travaille actuellement à la remise en état de tapisseries qui seront exposées dans le nouveau Rijksmuseum, dont la réouverture est prévue en 2013.

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