

# THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

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**ABSTRACT**—One can argue that a wider range of treatment options exist for the conservation of tapestries than for any other form of textile. It is no surprise, therefore, that different countries and different conservation laboratories have developed their own methods and preferences for treatment. This paper presents an overview of the evolution of American tapestry conservation techniques from the initial influx of European restorers through the divergence of American techniques from their English and continental European antecedents. Information for this study was gathered from textile literature and through a survey of American tapestry conservators carried out at the Textile Conservation Center, American Textile History Museum, Lowell, MA. A comparison of these survey results with three older surveys will point out further trends in decision-making and conservation approaches.

**TITULO—EVOLUCION DE LAS TECNICAS DE CONSERVACION DE LA TAPICERIA ESTADOUNIDENSE—RESUMEN.** Se ha argumentado que existe, más que en ningún otro tipo de textil, un amplio rango de opciones de tratamiento para la conservación de tapicerías. No es sorprendente, entonces, que diferentes países y laboratorios de conservación hayan desarrollado sus propios métodos y preferencias. Esta ponencia presenta un panorama de la evolución de las técnicas de conservación de la tapicería estadounidense, desde el influjo inicial de los restauradores europeos hasta la divergencia de las técnicas estadounidenses derivadas de sus antecedentes ingleses y europeos continentales. La información para este estudio fue recabada de la literatura textil y del propio relevamiento de los conservadores de tapicería estadounidense llevado a cabo en el Centro de Conservación Textil del Museo de la Historia del Textil Americano, Lowell, MA. La comparación

de los resultados de esta investigación con otros tres estudios hechos con anterioridad, permitirá identificar nuevos caminos en la toma de decisiones y en enfoques en conservación.

## 1. INTRODUCTION

This paper contains the results of three years of research on the subject of tapestry conservation. From January 1998 through August 1999, I held an Advanced Mellon Fellowship at the Textile Conservation Center, American Textile History Museum, during which time 16 tapestry conservators in the United States were surveyed (see Appendix 1). The participants included known tapestry conservators and Americans who had published on the subject, and in many cases one survey participant recommended another person with whom to speak. The information has also come from a review of all available literature, including three other surveys (Fikioris 1974; Wolf et al 1991; de Graaf et al 1998), as well as from archives at the Cathedral of St. John the Divine, New York, NY and personal communications. For the purpose of this project, "tapestry" was defined as any weft-faced, plain-weave textile with discontinuous wefts that was originally intended as a decorative hanging. Tapestries of any age, size, or provenance were included. Tapestry-woven upholstery, garments, accessories, archaeological fragments, and carpets that are displayed on the floor were excluded.

Over the past 25 years, tapestry conservation has evolved into a subcategory of textile conservation, with its own set of historical, scientific, and practical considerations. This development has taken place all over the world, with different styles emerging in different countries or regions. In most cases, these regional preferences occur because an

## CAMILLE MYERS BREEZE

institution or small number of individuals determine what procedures are best and disseminate their information through publications, presentations, and training of conservators. Regional preferences are not the result of a lack of information on any one person's part. A review of American and European tapestry conservation literature shows that most people have tried just about every available technique, but a strong belief in certain technical details causes them to stick to their preferred methods. Contrary to common opinion, regional preferences are not static, but evolve just like everything else, because as professional conservators, our goal is always to find the best solution for each artifact.

The terms "restoration" and "conservation" are synonymous in many parts of the world. In the United States today the word "restoration", when applied to tapestries, generally implies that lost portions of the weft are being rewoven, with the goal of recreating the woven structure while providing visual compensation. Design is recreated based on original cartoons, historic interpretation, and artistic conjecture. Tapestry conservation is a broader term: tapestry conservators use a number of different sewing techniques as well as localized support fabrics to provide stabilization and visual compensation. Restoration, or reweaving, is one of these sewing techniques.

### 2. TAPESTRY CONSERVATION HISTORY

The principles of tapestry conservation originated in the European tapestry weaving ateliers, and were based on a combination of age-old craftsmanship, modern thinking, and the ever-present demands of speed and economy (Hefford 1979). The results of these efforts can be found in almost any tapestry, and have served as examples, both

positive and negative, for subsequent repairs. The New York City area tapestry-weaving ateliers of William Baumgarten & Company in 1890s, and of Herter Looms in the 1910s, depended on income from repairs that their European tapestry weavers and their wives would perform between tapestry-weaving commissions. Needleworkers and "church ladies" also were called upon to use their skills as tapestries that had arrived in the United States in good condition began to decay (Hutchison 1991).

Tapestry dealers and importers similarly were known for their conservation services. French & Company, Ltd., located in New York, was a major provider of tapestry repairs in the early and middle 20th century. Archives at the Cathedral of St. John the Divine show that by 1926 they could be called upon to "thoroughly clean by special process" and "strap and line with linen and repair tapestries where necessary" (Breeze 1996, 14). Their methods also included liberal application of animal hide glue and coloring over bare warps to camouflage them.

Museums have also been major conservators of both their own tapestries and those that arrived on loan. A 1907 treatment report from the Metropolitan Museum of Art in New York describes tapestries as being "repaired here and there" and "repaired with patches" (Breeze 1996, 14). One of the people who worked for the Metropolitan Museum and other institutions was the Baroness Wilhelmine von Godin, a lace-maker turned tapestry restorer, trained in Munich. In a 1940 New York Times article, she talked about her work on a Barberini tapestry belonging to the Cathedral of St. John the Divine, saying that the "fine shading of the wings was being reproduced with exactitude" (Breeze 1996, 15). The Baroness

## THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

also worked on the Unicorn Tapestries at the Cloisters, for which she used plants grown there to produce natural dyes for her tapestry wool. Her stitching techniques did not consist exclusively of reweaving, however, but appear to have also included a more spaced reweaving technique closer to plain weave, often in a neutral color, and not always in the same material as the original.

### 3. THE "MODERN ERA"

The "modern era" of tapestry conservation began around the middle of the 20th century when it evolved from a craft into a more scientific trade with the application of analytical principles. An American looking for advice on how to conserve a tapestry in 1960, for example, would have found about six articles written on the subject, with only one being from the United States, Francine S. Green's 1955 "The Cleaning and Mounting of a Large Wool Tapestry" from the collection of the Textile Museum, Washington, DC. The treatments described in Green have much in common with those found 20 years later in an article by Joseph Columbus called "Tapestry Restoration in the National Gallery" (Columbus 1973), and Nobuko Kajitani's article on the conservation of Medieval tapestry (Kajitani 1979), given in San Francisco in 1976 and published in 1979. Green's tapestry was composed of fragments, not free hanging, and the warps were vertically oriented, however her approach has much in common with those of Columbus and Kajitani.

Columbus and Green both used glycerin in the wet-cleaning process as a lubricant for dry fibers, but Kajitani did not. Kajitani did, however, suggest the use of sodium hexametaphosphate between the initial water bath and the addition of surfactant. Sodium hexametaphosphate helps to remove soils

but is not recommended for fragile tapestries (Kajitani 1979, 56). None of the tapestry conservators surveyed in 1999 were using glycerin. Green, Columbus, and Kajitani all recommended sandwiching weak areas in net prior to wet-cleaning, which was mentioned by all of my survey participants and is documented in the literature as early as 1937 (Böttiger 1937). Vacuuming through screening has also been around for as long as the vacuum has been used for textile conservation (Böttiger 1937, 12), but my survey showed that Americans are vacuuming through net less and less on tapestries, except in silk or other fragile areas (Breeze 2000, 30).

Although there may have been a lack of published material on tapestry conservation in the United States at the beginning of the 1970s, there was a lot of tapestry conservation going on at American museums, as shown by Margaret Fikioris's 1974 survey on mounting techniques. As the textile conservator at the Winterthur Museum, Winterthur, DE, Fikioris developed her survey to respond to the need of teaching institutions to gather information on current techniques. Her survey asked participants simply about "tapestries" without any specific mention of fragments or tapestry woven archaeological pieces. The results of the survey were presented to the museum's Scientific Advisory Committee. Her report shows a greater range of mounting methods than can be found in the literature of the time, and as discovered through my 1999 survey, a greater range than currently is in use in the United States (Breeze 2000, 12).

In the 1974 survey by Margaret Fikioris, five out of ten participants mentioned mounting tapestries by sewing them to a fabric-covered strainer or stretching them over a board. Answers were very brief and did not indicate what size tapestry would be

## CAMILLE MYERS BREEZE

stretched. Today that method is popular for many textiles, but not tapestries, except when poor condition or curatorial preference require it. None of the participants in my survey made any mention of this technique when asked about mounting methods. Similarly, Velcro, which is almost universally used today, was only one of four hanging systems mentioned and preferred by only five out of ten participants in 1974. One participant said she used a grid of strapping rather than just vertical strapping. This is something often found on the backs of tapestries but the method is no longer common in either modern literature or practice. What this comparison of mounting methods indicates is that Americans are standardizing their preferences for tapestry conservation techniques and eliminating some methods where modern materials or scientific research provide an alternative.

The real turning point in the modernization of American tapestry conservation techniques may have come around 1976, sparked by the exhibit *Five Centuries of Tapestry: The Fine Arts Museums of San Francisco*. The exhibit was accompanied by a catalogue and in November, the museum hosted a conference of international tapestry conservators. Papers from this meeting were published three years later as *Acts of the Tapestry Symposium*. Anna Gray Bennett, author of *Five Centuries of Tapestry*, stated in the preface to the 1992 second edition that, since the 1976 exhibit, "the tapestry field has shown almost frenetic activity. The most prestigious art museums in the country have published collection catalogs of their vast holdings. Exhibitions have been presented and symposiums held all over the world" (Bennett 1992, ix). It is possibly this wave of activity that inspired a generation of new tapestry conservators and lead the way to new research and publications.

One of the museums inspired by the activities at San Francisco was the Minneapolis Institute of Arts (MIA) which in 1979 began a campaign to conserve and exhibit its important collection of 41 European tapestries. Based on a program developed by Anna and Ralph Bennett, the Minneapolis Institute of Arts decided to fully conserve each tapestry one-at-a-time with the help of highly trained volunteer weavers and needleworkers. Conservation began in July 1981 as a gallery exhibit entitled *A Look Behind Closed Doors: Conserving the Tapestry Collection* and continued in view of the public until late 1982. A comprehensive book about the MIA's collection, *European Tapestry in the Minneapolis Institute of Arts*, edited by Candace J. Adelson, came out in 1994. In Adelson's book, Lotus Stack, Curator of Textiles, and Mary Ann Butterfield, Conservator of Textiles, described the conservation methods they arrived at after thoroughly researching conservation principles and practices throughout Europe and the United States. Their insights include the following:

1. The purpose of conservation is to arrest deterioration by supporting the structures of the tapestry and to restore the visual aspect by replacing losses.
2. The methods include warp insertion as required and weft replacement by means of a darning technique rather than reweaving. Repairs are easily distinguishable upon close examination but invisible from normal viewing distance.
3. Restoration—that is, an effort to bring the tapestry back to the original woven structure—will not be attempted.
4. Trained volunteers, closely supervised by a professional conservator, will do the work (Adelson 1994, xvi).

## THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

The emphasis on conservation techniques such as darning and selective warp replacement, together with a concern for arresting deterioration without necessarily repairing the original woven structure, are still the most popularly held views in the U.S. today according to my survey (Breeze 2000, 31). The concepts Butterfield and Stack describe of reversibility, minimum intervention, and rigorous training were all outgrowths of the recent applications of science and theory, which can be seen in the conservation literature of the 1980s (Ward and Ewer 1988).

### 3. RESTORATION AND CONSERVATION

Both Kajitani at the Metropolitan Museum of Art and Columbus (who was one of Kajitani's teachers) at the National Gallery of Art stated a preference for restoration as the primary method of repair. In my survey only two respondents used repairs which simulated the original weave structure as their standard approach to stabilizing areas of weft loss. The remainder usually employ the technique of spaced darning within the structure of the tapestry, or couching the tapestry to fabric patches. When necessary a full lining is used. In the words of one respondent, "Treatment includes restoration-type repairs when a loss, damage, or old repair is of a type or magnitude that it distracts or confuses the viewer. This also assumes that the museum's project budget is sufficient to accomplish restoration repairs" (Breeze 2000, 31). Commercially, restoration was long considered the only way to retain the market value of a tapestry, in which case the cost of the repair was offset by the price the tapestry would fetch (Pow 1970).

### 3.1. THE EUROPEAN APPROACH

As recently as the 1970s, reweaving was still the standard practice in tapestry conservation throughout most of Europe, with the possible exception of England and parts of Germany (Marko 1995). Constance V. Pow of the Victoria and Albert Museum in London confirmed in her 1970 article that reweaving was both the oldest and most common method of repair for tapestries, however she considered stitching to a support fabric to best satisfy the principles of conservation rather than restoration.

In 1984, Karen Finch summarized the development of her patching method for tapestries while she was working at the Victoria and Albert Museum in the 1950s (Finch 1984). After removing old distorted repairs, each warp was couched down to a supporting patch so that it was equidistant from its neighbor, preserving any original weft thread that was left. The result was a cohesive whole that when seen from normal viewing distance was once again legible. Finch continued to develop the patching method, eventually coming up with a method of all-over support using a full lining of linen scrim, known by many today simply as "the English method."

### 3.2. THE AMERICAN APPROACH

So why has patching become so popular today in the United States? The comparative cost and time frame of a full restoration versus a full stabilization treatment is certainly a major factor. Stitching to fabric is quicker, can be located easily and removed at a later date when our modern materials fail or better methods are found. For an institution like the Metropolitan Museum, however, the historical value of the tapestry can outweigh every-

## CAMILLE MYERS BREEZE

thing else. A conservation method is selected to preserve the intent and story of the tapestry. It is not surprising, therefore, given its prominence among American museums, that the Metropolitan Museum is the major center for tapestry restoration in this country.

An unrecognized reason why few American tapestry conservators consider their standard treatment to be either full restoration or a full lining has to do with flexibility. We generally start out with, or default to, a relatively low-impact approach of localized darns and patches. After a tapestry is begun at this level, the decision can later be made to add more rows of tabby, increase the number of supplementary patches or tack on a full lining, or to do some small restorations because a curator requests it. Once a tapestry is begun with restoration-type repairs it is difficult, if not impossible, to scale back the work to conservation repairs without causing a visual and structural interruption. Similarly, if a tapestry has been begun with a full-support lining, like in England, it is difficult to then go back later and decide to remove an old repair and reweave the area in the presence of the lining fabric. Do we Americans allow ourselves to decide as we go along because our technique allows us to, or have we chosen this flexible method because we believe in an individualized approach? The ability to decide during the course of a treatment where to use restoration or conservation seems to be key to most American conservators.

#### 4. NATIONAL PREFERENCES

This brings us back to the subject of how information is shared between conservators both here and abroad. In the past 20 years, no fewer than six conferences have been held in which tapestry conservation played a major role. Their subsequent pub-

lications<sup>(1)</sup> contain case studies and research by both American and European tapestry conservators. The increase in publications and conferences is evidence of a shift toward professionalism and open dialogue.

In reviewing all of these articles, indications emerged of which repair and support methods are favored in different countries. For example, stitching weak areas to localized fabric patches was mentioned by people working in the United States and continental Europe, but not England. All of the English authors favored a full-support lining, a technique which these publications indicate had been used in rare cases by authors from the United States and the Netherlands. Reweaving was specified as the method of choice by the Metropolitan Museum of Art, in some parts of Italy and, in certain circumstances, Belgium. A method of inserting spaced lines of stitching into the weave of the tapestry independent of a fabric patch, rather than reweaving in the same gauge as the original, was only mentioned in the United States. Finally, in all of the conference papers noted above, the only conservators to mention the use of vertical straps were from the United States.

Although Americans are notorious for their use of straps, tapestry conservators in Europe also know and occasionally utilize this method, according to the 1996 survey on *Support Methods and Fabrics for Tapestries* by Judith Hoffenk de Graff and Foejke Boersma of the former Central Research Laboratory, now merged into the Netherlands Institute for Cultural Heritage in Amsterdam. They received 28 questionnaires from conservators all over the world (only two from the United States) of which only four said they used straps. One of these conservators usually straps but the other three choose between doing straps, patches, or a full lin-

## THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

ing. The number of these participants who strap may be low because many believe that straps are redundant when a tapestry receives a full lining or patches, which is the treatment of choice for 20 of their 28 participants.

In my survey, 12 out of 14 people who responded said that they always or normally used straps, and the presence of patches did not effect this decision. Eight said they may eliminate straps if the tapestry was new, in excellent condition, or was small. Two people do not use straps because they always or normally choose full restoration. All tapestry conservators probably are familiar with strapping; perhaps we Americans choose to still do it more often because we have been taught to do so and we have been satisfied with our results.

This conclusion is supported by tracing the spread of strapping preferences among American tapestry conservators. In her 1976 presentation "The Preservation of Medieval Tapestries," Nobuko Kajitani stated that straps should be "nonstretching and of compatible strength [as the tapestry, and] should be attached in a complimentary tension to the tapestry along the weft direction" (Kajitani 1979, 58). Three-inch cotton twill tape was the material of choice for straps at the Metropolitan Museum from the 1970s to as recently as the early 1980s. In the late 1970s and early 1980s, four of the participants in my survey worked for Kajitani—Jane Hutchins, Deborah Trupin, Patricia Ewer, and Alice Blohm.

When surveyed, three of the four respondents said that they use three-inch cotton webbing for straps, and one specified twill weave. In the early 1980s Kajitani also had a close professional relationship Bruce Hutchison at the Cathedral of St. John the Divine, who used three-inch cotton twill webbing

for straps. His successor, Marlene Eidelheit, and his former employee Rita Kauneckas, both still use twill strapping at least part of the time. Kajitani's former employee Jane Hutchins went on to become Director of the Textile Conservation Center, then in North Andover, MA, where she and her former employees and survey participants Kathy Francis and Deborah Trupin continued to use three-inch cotton webbing for straps. Francis also taught her former employee Deirdre Windsor, now Director/Chief Conservator of the Textile Conservation Center in Lowell, MA, to use three-inch cotton webbing. Hutchins later worked at the Museum of Fine Arts, Boston, MA where she and survey participant Deborah Bede continued to use cotton webbing. The Textile Conservation Workshop, South Salem, NY and Biltmore House, Asheville, NC both used three-inch straps, and the Minneapolis Institute of Arts uses two-inch cotton webbing.

By the mid-1990s, the Metropolitan Museum was already using strips of cotton duck or cotton sateen in place of cotton webbing. In the last five years at least seven conservators and laboratories have also switched to strips of cotton fabric, often duck. Among the complaints users had about the webbing was that it was too stretchy, and at some point during the 1980s and 1990s many of the users of three-inch twill strapping switched to a less stretchy plain-weave strap. The reasons given by survey participants for their current movement towards fabric strips include the flexibility in width and the fact that cotton duck and other fabrics seem to react less to atmospheric fluctuations. Strapping methods, which have for so long defined American tapestry conservators in the eyes of our European counterparts, are evidently under investigation and continue to evolve at this time.

## CAMILLE MYERS BREEZE

### 5. SCIENTIFIC RESEARCH

The last five years have been marked by an increase in international scientific study of tapestry conservation methods and support materials. In 1995 and 1996, Mary Ballard of the Smithsonian Museum Center for Research and Education, Washington, DC, published and spoke widely on the physical properties of backing fabrics. In her articles she explains that a backing fabric is traditionally chosen to be stronger and less stretchy than the original textile, which prevents the textile's fibers from reaching a breaking point.

A second, two-part publication by the Amsterdam team of de Graaff and Boersma, entitled *Part I- Tapestries: General Background Information* and *Part II- Chemistry and Physics of Flax (linen) and Cotton* contains excellent background information on tapestry conservation history in the United States and elsewhere, tapestry conservation techniques, and types of damage found. According to de Graaff and Boersma, the support-fabric preferences expressed in their 1996 questionnaires were generally based on experience and tradition, not on scientific investigation. Therefore, they, along with W. G. Th. Roelofs, undertook additional research, the results of which appear in a third publication *Tapestry Conservation: Scientific Research 'Linen Versus Cotton'*. Their report presents the methodology and results of testing for tensile strength and elongation at break that was done on fabrics being used for tapestry conservation. It is by far the most comprehensive study of materials intended specifically for tapestry conservators; however, the authors were hesitant to say which fabric is best. They call for further research on fabric choice and preparation methods, as well as on the behavior of tapestries themselves during climatic changes.

The final survey to discuss is presented in the 1991 article by Wolf et al., called "Evaluating Textile Treatments: Discussing the State of the Art." In one section Patricia Ewer and Jane Hutchins surveyed American textile conservators on their testing methods. They reported that when testing for soil, "visual exam is the most common [method]. Little effort to quantify the type and amount of soil has been reported, prompting the question of how we determine that we're cleaning what we wet clean." Regarding dye testing, the authors found that it was generally done for reasons ranging from identifying the historic dye itself to determining whether or not the dye would bleed during wet-cleaning. These results, they stated, "have a great deal to tell us about the assumptions we make individually and as a group" (Wolf et al. 1991, 20).

My survey found that all but one of the conservators who answered the question about testing said that they perform either blotting or fiber sample tests for dye fastness and soil removal. Only one uses visual assessment (Breeze 2000, 17). These results suggest that conservators today are testing more thoroughly for dye fastness and soil removal, and making fewer assumptions than in the past. On the subject of testing for fiber identification, however, the results are different. Ewer and Hutchins wrote that "some conservators relied on experience and used visual identification. Some used microscopy to identify every fiber in every piece, while others relied on microscopy for identification of particular fibers distinguished in visual examination" (Wolf et al 1991, 20). In my survey only two people mention fiber identification tests at all, and neither specified using a microscope (Breeze 2000, 17). This may be that as American conservators learn to recognize tapestry fibers by eye, they eventually stop testing and this stage of documentation takes place almost subconsciously



## THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

during the course of report writing. In this case we appear to be more comfortable making assumptions than we were in the past.

### 6. CONCLUSION

The techniques that are used by tapestry conservators around the world today are based in part on historical model and in part on our own modern advancements in textile science, communication, and professional management. It is the ability to back up our choices with more reliable evidence that what we are doing is not harmful and may, in fact, provide a long-term solution, that distinguish us from our earlier counterparts. The three main influences on how we conservators go about making decisions appear to be individual training, the procedures of a given institution, and the technology and tools available. This third factor in the development of regional techniques and preferences is perhaps less often recognized than the first two. A laboratory that does not have a microscope to aid in fiber identification will rely on other methods, such as visual examination. Similarly, a laboratory that does not have adequate ceiling height or a hoist or pulley system will probably not explore methods of attaching straps while the tapestry is hanging. Scrutiny of articles written by Americans on the subject of tapestry conservation may make it seem as though we have our own methods and philosophies. However, my research indicates that like all conservators, we are constantly improving our techniques and materials, and we look to colleagues both here and abroad to help us in this never-ending search.

#### Appendix 1

A list of the questions in my survey appears below. For a copy of the survey report please contact the

Textile Conservation Center, American Textile History Museum, 491 Dutton Street, Lowell, MA 01854.

#### Documentation

Have you adopted any new technology to aid you in documentation, such as digital cameras, video, or computer programs?

#### Testing

What testing do you do to further determine the course of treatment?

Does this differ from tests you performed earlier in your career?

If you are relying on more scientific testing methods now, are they changing your treatment decisions, or confirming the decisions you would have made previously?

#### Surface cleaning

At what stage do you vacuum a tapestry?

What type of vacuum and vacuum attachment do you use?

Do you vacuum through a screen?

Is your current vacuum a significant improvement over older models you have used?

What other methods of surface cleaning do you use?

#### Temporary stabilization

How do you stabilize weak areas prior to handling, hanging, or wetcleaning?

When does a weak area require temporary stabilization?

Do you ever do permanent stabilization prior to wetcleaning?

What have you done differently in the past?

## CAMILLE MYERS BREEZE

### **Wet cleaning**

How often do you wetclean a tapestry prior to stabilization (always, most of the time, about half of the time, rarely)?

If tests show that the tapestry is giving off soils, but it was wetcleaned in the last ten years or so, do you clean it again (condition not being a factor)?

What surfactants do you use?

Describe your wet cleaning setup and water system?

Have you made any changes or improvements in the last twenty-five years?

Have you encountered areas of *potomage*, or painting?

If so, how have you dealt with them?

Have you ever suction cleaned a tapestry?

If so, why did you choose suction cleaning?

### **Drying and blocking**

How do you dry tapestries?

When do you dry them face up and when do you dry them face down?

How often do you use a drying or wicking cloth?

What kind of cloth do you use?

If the tapestry needs blocking do you use pins or weights?

### **Installing on a tensioner**

What kind of tensioner/s do you use?

How old are the tensioner/s?

How do they differ from others you have used?

### **Slits**

Which stitch do you use to close slits?

Does the length or location of the slit determine your stitch?

What is your preferred thread brand or fiber?

When do you remove old and weakened slit stitching prior to replacement, and when do you stitch over existing threads?

If there is going to be a fabric patch or scrim/lining behind the area, do you close the slits before the patch goes on, or do you close the slit to the fabric?

### **Missing weft**

How do you stabilize a small area with missing weft?

How close do you place your lines of stitching?

What yarn/thread do you use for missing silk and wool?

Do you dye your own tapestry yarns?

Do you use a fabric patch behind areas of loss for additional stabilization and color compensation?

If there is degraded original material remaining, but it is sparse and interferes with an aesthetic stabilization, do you pick it out?

If the area of weft loss is adjacent to a slit do you replace the lost weft and then treat the slit as any other slit?

### **Broken Warps**

When do you rewrap a broken warp and when do you stabilize around it?

What thread do you use for rewrapping?

Describe your method for rewrapping?

### **Restoration**

How often does your repair take on the appearance of a restoration?

Have you ever woven an in fill, or plug?

Have you ever made an embroidered patch to use as an in fill?

How do you get rid of the fuzzy appearance of new wool?

Have you ever used modern metal thread to replace lost metal threads?

### **Galons (gallons, galoons, border-guards)**

How often do you replace a missing or nonoriginal gallon?

## THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

What material do you use?

How do you attach it?

If there is an original gallon in poor condition, how would you stabilize it?

### **Cuts and Fragments**

How do you stabilize weak joins around cuts, or where fragments have been used to patch the tapestry?

### **Patches**

How often do you use fabric patches to stabilize behind weak areas?

Do you do your repairs to the patch, or patch after the area is stabilized?

What is your preferred fabric?

How do you wash it, and how do you treat the edges?

Do you attach it to the back of the tapestry under tension, or not?

### **Adhesives**

Have you encountered old adhesive treatments?

If so, how have you removed them?

Have you ever used adhesives to consolidate a tapestry?

### **Strapping**

Do you always strap tapestries regardless of size, age, or condition?

What material do you use for straps?

How do you prepare the straps?

How far apart do you space your straps, and how wide are they?

Do you attach the straps while the tapestry is hanging or lying flat?

What stitch do you use to sew the straps to the tapestry?

What thread do you use?

Have you changed strapping materials or technique during your career?

### **Lining and dust cover**

How often do you do full linings?

What are your full lining techniques?

How often do you do dust covers?

What is your preferred fabric for each?

How do you prepare the fabric?

What thread and stitch do you use to attach your dust cover?

Do you attach it hanging or flat?

How many sides are attached to the tapestry and how many are hemmed to themselves?

How deep are your side turn backs and your bottom hem (if any)?

### **Hanging**

What setup do you have for hanging tapestries?

How often do you hang tapestries for analysis before you begin your treatment?

How often do you opt for a Velcro hanging system for tapestries?

What support do you sew the textile side of the Velcro to?

How many rows of Velcro do you use?

Do you put Velcro on the sides or bottom corners?

What stitch do you use to attach your Velcro?

What support do you use for the wall side of the Velcro?

### **Maintenance**

Do you suggest a maintenance plan to your tapestry clients?

Do you ever get called back to perform maintenance on tapestries you have conserved?

## CAMILLE MYERS BREEZE

### Project administration

How often are you consulted during the decision-making, or grant-writing phases of project administration (for museum and institutional clients)?

Do you work closely with the curator in making final decisions on cost and treatment?

Do you see the roll of the conservator in administrative decision making as having changed in the last twenty-five years?

### Personal Information

How long have you been a practicing conservator?

How long have you been conserving tapestries?

Who have you learned tapestry conservation from, and where?

Who have you trained that has gone on to specialize in tapestry conservation?

### NOTES

1. In 1981, *Tecniche di Conservazione degli Arazzi* was held in Florence, and the proceedings were published in 1986. The 1984 *Internacional la Restauration et la Conservation des Tapisseries* held in Paris spawned a publication of the same name. The 1989 book *The Conservation of Tapestries and Embroideries* contains the proceedings of meetings at the Institute Royal du Patrimoine Artistique, Belgium, held in September 1987. *Conservation Research: Studies of Fifteenth to Nineteenth-Century Tapestry* is a collection of papers given in 1993 at a conference in honor of Joseph Columbus, former textile conservator at the National Gallery of Art, Washington, D.C. In 1994 *The Misled Eye...Reconstruction and camouflage techniques in tapestry conservation* was published. It contains papers given at the TRON Symposium in Amsterdam in October 1994. Most recently published was *Textiles in Trust*, the proceedings of the symposium held at Blickling Hall, Norfolk,

England, in September 1995, containing papers about tapestries and other textiles in the care of Great Britain's National Trust.

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## THE EVOLUTION OF AMERICAN TAPESTRY CONSERVATION

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