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A Cautionary Tale Concerning Textile Reproduction
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The speakers in this session approach the subject of computerized jacquard weaving through a labyrinth of related issues, examining the foundations of contemporary weave technology as linked to our personal directions as textile artists, researchers and design educators. In essence this session will analyze the subject from many angles, investigating the threads that link technology and hand process. Common to our diverse pathways is the understanding that art is complex and must grow from the spirit of its maker and not simply from the tools that make it.

Parallels Between Handwoven Tapestry and Electronic Jacquard Weaving

I learned pandweaving in the mid-sixties at the Art Institute of Chicago, a period when art schools were steeped in the legacies of the Bauhaus. There, I began to learn about the significance of textiles in the daily life of world cultures as well as the satisfaction of arduous hand process and concept as they merge into textile art. I have continued to nurture this foundation over the years.

Recently, after more than twenty years as a handweaver I have begun to use a computer assisted jacquard loom for the production of my woven artwork. Design, production and reproduction options available through twenty-first century electronic technology have presented me with exciting new directions for artistic growth.

Sitting in front of a computer for long hours while editing design work that would soon be taken, via diskette, to this electronic version of a nineteenth century loom, has become part of my new design process. The intermixing of tradition and history with new technology is meaningful and satisfying.

Preparing a composition on computer can be a monotonous job. During this process, design time and real time can easily become muddled if the mind is allowed to wander, and wander it does. Once, for example, while I was zoomed-in on a portion of a design, cleaning misplaced pixels and trying not to lose sight of the entire visual concept, I transported myself back many centuries, wondering how different my job in preparing for this woven image in the year 2000, really was from the work of a tapestry weaver in the 1500’s.

The major difference is clear enough. Today I am both the artist and the weaver. Tapestry weavers of the sixteenth century were only half of that, but I imagined that the preparatory work on computer was comparable in tediousness and labor to the monumental tapestry weavers task.

A skilled sixteenth century tapestry weaver in a large workshop in Brussels for example, would have worked on a low-warp loom, “building” an image. This is done today on computer in the design preparation stage prior to jacquard weaving. A sixteenth century weaver would most likely have been in charge of a three-and-a-half foot vertical section of the warp’s full twelve foot width, his stations not much wider than my computer station today. The tapestry weaver would sit, side-by-side with other weavers throughout the day, tediously translating imagery from a painted
cartoon hung behind his loom to weft-faced weave with fine colored wools. For the textile to see completion, fingers and minds, now as then, would need to be nimble and sharp, concentration and perseverance unwavering.
In one way tapestry and jacquard textiles are similar in that the images created by both weaving processes are actually part of the physical structure of the textile. Unlike drawing or painting these woven images are built up pick by pick, line by line bottom to top as the textile is woven. In traditional tapestry the initial design of the imagery required a full-scale painted cartoon which weavers then replicated using the gradual process of the discontinuous-weft technique.

The electronic jacquard handloom, on the other hand, offers contemporary textile artists a new approach for production of the working design prior to weaving. Current computer design image manipulation options extend the ways the artist can build and change images prior to weaving. Instead of physically copying, cutting, pasting and re-drawing images on a full-scale cartoon, motif repetition, scale-change and coloring tools in the software system provide ways of extending and altering the detailed pictorial composition. The most tedious or arduous part of woven image production is redirected from physical weaving to preliminary designing. After the completion of the image design process, the jacquard weaver gives only her time at the loom. Conversely, the tapestry weaver was required to follow the cartoon’s design with painstaking accuracy throughout the weave process, while making selective judgments about when to change color and how much color mixing would be required per shape to achieve the individual shading and hues.

While requiring in-depth understanding of complex software, cropping, elongation, repetition and a myriad of other visual design changes to a composition are accomplished with relative ease and accuracy on computer. One or two swift software commands and an altered version of a composition can be ready to weave. The complex woven image is stored on disk, the loom processes and regurgitates the image. The jacquard weaver makes decisions on speed of shed change and weft color rotation only. Regardless of electronic support or level of sophistication found in current software systems, considerable artistic oversight needs to be exercised for the tools to be aesthetically effective.

**Tapestry Cartoon Reproduction Practices of the 16th Century**

The central reason for making a parallel between the two textile production processes of tapestry woven imagery of the sixteenth and seventeenth centuries and jacquard woven imagery in the twenty-first century, is to point out the overly enthusiastic use of composition alteration and reproduction in early European tapestry manufacture. Largely driven by market demand for tapestry woven epic scenes, this was a period when reproduction of composition was first introduced. It is important at this point to raise a caution about the role of art and the role of the artist as they intertwine within the complex history of textile reproduction.

Embellishing this point requires a look back to sixteenth century European tapestry. This will help to evaluate the good and evil of composition reproduction options, give insight into how and why reproduction was adopted, and depending on your point of view, how the practice of tapestry cartoon reproduction was abused.

My original investigation into tapestry reproduction practices and cartoon reuse began a number of years ago. (See M. D. Puryear, “Raphael’s *Acts of the Apostles* Tapestries - The Birth of the Tapestry Reproduction System”, in *Contact*,
Throughout my years of teaching, historical research assignments for student design projects typically centered on significant European textile icons including the Bayeux Tapestry, Angers Apocalypse, and Unicorn tapestries from the mille-fleur era. From there my preference for assignment areas skipped to the textile revival work of William Morris. All are undeniably great periods of tapestry production that interpreted historic and cultural ideology through visual narrative, combined with immensely skillful manufacture.

The period of tapestry production between the early sixteenth century and the late nineteenth century always seemed to me to be less inspiring, producing compositions designed to reflect painting at the expense of textile autonomy. Largely due to the popularity of panel painting and painting on canvas, tapestry during these times moved to closely replicate the painters art, and eventually lost its stature as a unique form of narrative art.

The period of tapestry production beginning after the 1500's allowed compositions to be copied and reproduced, a practice which on its surface does not mesh with the pedagogy of a contemporary artist. This controversy becomes less significant when we begin to place tapestry at that period of time, in a middle-ground classification between one-of-a-kind textile art and industry mass production. The middle-ground in this instance is the place where a prosperous base of customers commissioned tapestry that copied or replicated successful popular images - a market for textile art driven by customer demand.

Tapestry compositions were designed or altered for individual customers, not mass produced for a ubiquitous open market, and tapestry workshops at this point had been able to turn greater profits. In some ways this more complex sixteenth century workshop mission develops into a model for the modern textile industry. From this point in the 1500's onward, some parts of narrative tapestry production would follow a form of compositional reproduction, while the traditional properties and meaning of tapestry as meaningful decorative art would allow it to remain a highly desirable form of artistic expression.

The Source of all Reproduction: Raphael's Tapestry Cartoon Commission

A closer look into the frequency and quality of cartoon reproduction during this period, takes this investigation to the first known instance of European tapestry reproduction, the celebrated cartoons for the Acts of the Apostles tapestries. This renown set of tapestry cartoons painted in 1515 by the Renaissance artist Raphael represents subjects from the lives of Sts Peter and Paul.

The painted paper cartoons, approximately eleven feet by seventeen feet in size, included the Miraculous Draught of Fishes, Christ’s Charge to St. Peter, the Blinding of Elymas, Healing of the Lame Man, Stoning of St. Stephen, Sacrifice at Lystra, Death of Ananias, St. Paul Preaching at Athens, St. Paul in Prison, and the Conversion of Saul.

Following the cartoons closely, the Acts of the Apostles tapestries were woven in Brussels at the workshop of Pieter van Aelst. They were commissioned in
1515 by Pope Leo X to complete the decoration of the Sistine Chapel, specifically to create a balance between the lower walls of the Chapel and the powerful visual presence of Michelangelo's newly completed ceiling frescoes.

The tapestries were intended to be hung only at times of celebration and ceremony, and would be installed at floor-level covering portions of the chapel's lower walls which are decorated with frescoed images of damask drapery. The tapestries would be hung beneath a zone of painted scenes commissioned in the 1480's. These second-story frescoes were painted by some of the greatest artists of the fifteenth century, including Botticelli and Raphael's own teacher, Perugino. The time-honored prestige of tapestry with its history of conveying visual messages with warm, tactile beauty, as well as its inherently practical property of portability, made it the right artform for the Sistine Chapel space.

The tapestry weaving process being time intensive, allowed fewer than half the set of Raphael tapestries to be completed for hanging at Christmas in 1519. Those pieces that were hung were said to have been overwhelming in their beauty, owing in part to the exquisitely rendered larger than life figures represented in each scenes, the copious amounts of gold wrapped threads used in the weaving process and how they glowed in the chapel's modest light.

Without the continued support of Pope Leo X, who died just two years later in 1521, the life of the full set of ten tapestries would be cut short. They were rarely if ever hung again in the Sistine Chapel, and never in full set. Not until 1983, more than four hundred years later, in honor of the celebration of the Year of Raphael, were the existing pieces of the original Vatican owned set of tapestries re-hung in the Sistine Chapel, their compositional arrangement accurately reflecting Raphael's original plan. A commission of this magnitude in 1515, at a period in history when prosperity of a rising middle class began to challenge that of royalty and the church, created a demand for goods symbolic of personal wealth. Tapestry, with its history of epic narrative scenes and tradition dating from the middle ages as wall coverings of sizable proportions, would fit this requirement. Wealthy clients would request the production of scenes and images matching those in the collection of the head of the cathlic church. Tapestry workshop directors, especially those in Brussels who had access to Raphael's original cartoons were able to manufacture tapestries for these customers, at times redesigning only the borders of the full set of ten pieces, other times cutting compositions, tailoring them to fit site specific requirements of the client. Since every tapestry needed a cartoon as its initial design source for manufacture, tapestry workshops that did not have access to the original cartoons made detailed full-size copies of borrowed cartoons or detailed copies of the recently manufactured tapestries themselves.

**Fifty-Five Sets of Tapestry: Raphael's Compositions and How They Changed**

The original Vatican commission of ten cartoons painted by Raphael, describing monumental events in the lives of Sts Peter and Paul, were woven at the van Aelst workshop in Brussels, 1515 to 1519. This same workshop wove an additional three or four full sets of ten pieces from Raphael's cartoons while they
were still in van Aelst’s possession around 1519 to 1523. These subsequent sets are truest in color and composition to Raphael’s cartoons, truer in color in fact than even the original Vatican set because of the workshop director’s substitution in the original commission, of some color tones with precious gold-wrapped threads which tended to give an overall brownish tone to the tapestries as the gold tarnished.

The ten original Raphael cartoons were used for tapestry manufacture in Brussels for a period of sixty years. They were sold in 1623 to the monarchy of England for exclusive use at the Mortlake Tapestry Manufactory where excellent, accurate copies of full sets were woven twelve times from 1625 to 1703. A total of fifty-five sets and partial sets of tapestry have been identified as deriving directly or indirectly from Raphael’s cartoons. Derivative sets and single pieces selected from the original ten cartoons were produced in Italy, Flanders, and in France, at Gobelins and Beauvais. Between 1520 and 1620 notable Brussels sets were known to have been woven at the workshops of Jan van Tieghen, Jan Raes, Jacques Geubels, and Jean Paul Asslebergh. These derivative sets of tapestries utilized copies of the cartoons, or copies of existing tapestries themselves for tapestry manufacture.

**Cartoon Cropping and Editing, Unique Borders for Each New Commission**

The loss of clarity of Raphael’s images as well as compositional intention was inevitable as copies continued to be woven. Edits began as simple redesign of ornamental borders, and progressed to major cutting and reconfiguration of the central compositions determined by the desires, beliefs and site specifications of individual clients.

Cropping and editing of tapestry wasn’t an easy task by any stretch of the imagination, nor was weaving a fifteen-foot by eighteen foot tapestry, which eventually employed a palette of three hundred hues and shades to more closely replicate the nuances of a painted surface. The skill of the weavers escalated with the times. If we look at examples of Raphael-attributed tapestries woven in Brussels approximately one hundred years after the first set of 1515, juxtaposed with the original cartoons for compositional comparison, it is clear how scenes have been cropped for manufacture. In some instances a scene will have condensed overall activity by eliminating less prominent figures, or architectural and landscape detail. With each edit, compositional balance was altered, even sacrificed for the development of new narrower-width textiles that would fit specific sites. Other alterations to the central scenes reflect design elements unique to individual specific workshops or elements contemporary with art of the time.

In the original Vatican tapestries, Raphael designed lower borders personalized to the client, in this case depicting events in the life of Pope Leo X and his family, the Medici’s, in a stylized manner that resembled relief-stone carving. Specialized woven borders became a popular framing device on tapestry during this period. In subsequent production of Raphael cartoons, as in all tapestry design, borders continued to be individually designed for each customer, portraying their coats of arms, events from family history, popular mythology, or other stylistic pronouncements offered by the workshop director. The border areas became signature design work of individual workshops. Tapestry production workshops seem to have
been more focused on designing the uniquely individualized borders for each customer, then concentrating on exact replication of Raphael cartoon images. It appears that customer and workshop directors alike eventually found the Raphael scenes tiresome.

Regardless of its subject matter, tapestry was at its height of production and universal popularity in the sixteenth and seventeenth centuries, and tapestry workshops were prosperous. Reproduction of particularly prized compositions in response to market demand helped create this prosperity.

**Conclusion: Concerning Reproduction and Artistic Integrity**

Artistic integrity and an artist's creative intentions were not a factor in the reproduction activities of tapestry. The reproduction aspect of tapestry weaving continued as a more or less commercial venture, as tapestry now competed directly with painting for patron support and weaving declined in stature as an artform.

Artists and designers today hold careful control over reproduction of personal artwork and might question the validity of the tapestry form that too closely imitated painting. Original motifs and designs in today's production cycles are closely monitored to avoid quick and callous knock-offs and copyright infringement. Artists and designers should be cautious about becoming fixated with the relative ease of mechanical reproduction available through current technology, and loose sight of personal expression.

When reproduction is out of the hands of the artist, integrity and potency of image can be ignored, altered, and eventually lost. It is the job of the artist to explore creative options and know the historical precedents. When the artist's vision is preserved the possibilities for textile art are limitless.

**References**


