A Visual Survey of

Craft History

Global Traditions & Technological Innovations in Clay, Fiber, Glass, Metal, & Wood

Volume VII: 1800 to the Present

Carol Ventura

Global Traditions and Technological Innovations in Clay, Fiber, Glass, Metal, and Wood

Volume VII: Rise of the Modern World

Carol Ventura

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Preface

Crafts have played an important role in world history. Over millennia, the search for raw materials, merchandise, and markets has sparked military campaigns, alliances, conquests, and trade networks that built and destroyed empires. For example, the great expense of importing silk and porcelain from Asia enticed Europeans to find better trade routes, resulting in the “discovery” and colonization of the Americas and elsewhere.

We stand on the shoulders of the men and women who appropriated, adapted, and developed the products that changed lives and fortunes over the centuries. The Renaissance was financed in large part by the luxury fabrics woven in Florence. The Industrial Revolution had a tremendous impact on society since all furnishings, clothing, and accessories had been laboriously made by hand before mechanized production. Some types of manufacture are still time consuming and expensive, though, so sweatshops and child labor persist. Machines decreased hand labor, but thanks to increased factory production, many craftspeople may now choose to make utilitarian ware or one-of-a-kind non-functional pieces or both.

This visual overview will introduce and deepen your appreciation of clay, fiber, glass, metal, and wood crafts through time with a focus on who, what, where, when, and how. Hundreds of iconic and innovative examples from around the world demonstrate how craft media evolved in the Americas, Europe, Asia, Africa, and Oceania. References in the bibliography, museum websites, and other internet resources lead to more in-depth knowledge about the cultures and media presented.

The book was divided into volumes because the photographs made the digital files too large to convert into an eBook. As a survey, much was excluded, but great effort was made to present a variety of the most innovative and influential masterpieces from around the world. Numerous sidebars in each chapter focus on craft techniques associated with the examples. The words in the glossary are highlighted with bold text the first time they appear in each volume.

The five media are not represented in every chapter nor in consistent order, but the progression is logical because many styles build on tradition or are inspired by another medium or technical innovation. Several figures

represent more than one medium. For instance, ceramic figurines that depict clothed people illustrate both clothing and ceramics. Paintings and sculptures that depict clothing, jewelry, and/or furniture establish context and show examples when few survive.

How did I become interested in this topic? Along with her other talents, my mother sewed, knitted, crocheted, and made slip-cast pottery. In addition to his military career, my father tinkered with electronics, automobiles, plumbing, and carpentry. Between them, my parents could do just about anything. The Navy relocated our family every few years around the United States and Europe, and we traveled every summer to museums and factories to discover new things and see how they were made. My love of travel and manufacturing continues to this day. Most of the photographs in the sidebars were taken on my journeys to Africa, Europe, Asia, and the Americas. The best way to learn is to teach, but this project has taught me that to really understand relationships, influences, and the evolution of ideas, write a book!

I would like to acknowledge and thank Fulbright, Fulbright-Hays, the National Endowment for the Humanities, the Program for Cultural Cooperation between Spain's Ministry of Culture and United States Universities, Smithsonian National Museum of American Art, the US Department of State, and Tennessee Technological University for their support. I would especially like to thank the museums who shared their photographs, Linda Pastryk, Luke Anderson, Noreen Grisolano, and the many other friends and craftspeople who made this free eBook possible.

Chapter 12: 1800-1950

ca. 1800 to 1918

I deleted the map to make document this smaller.
Europe in 1871 (map by Alexander Altenhof, CC BY-SA 4.0)
https://w.wiki/DdTL

The 19th century was a time of great discovery and innovation. Instead of lead, Bohemian crystal glass was made with purified potash, arsenic oxide, sand, and limestone. Like lead crystal, it could be blown, wheel cut (Figure 12.31f), and **engraved**. The sparkling crystal chandeliers in many French, Russian, and Austrian palaces were made in Bohemia during the 18th century. The 19th century saw the introduction of colorful vessels that featured city scenes, landscapes, portraits, allegories, flora, fauna, and political themes. Bohemia continues to be an innovative glass center today, although now it is part of the Czech Republic.

The Bohemian *Kulm Goblet* in Figure 12.1 was blown, cut, engraved, **enameled**, and stained. Translucent red, green, brown and purple motifs between yellow and blue quatrefoils circle the rim. A large rectangular area on one side of the bowl is stained yellow and engraved with a scene that includes figures and architecture in a landscape (Figure 12.1b). The other side is decorated with three cut panels enameled with a large Prussian coat of arms flanked by the arms of Russia and Austria (Figure 12.1c). Six oval bosses and a large knob enameled red, yellow, and blue project from the stem. A 16-pointed cut star in the center of the lobed foot is surrounded by cut red, yellow, blue, and purple diamonds with red, blue, and purple flowers and green leaves on a black ground (Figure 12.1d).



Figure 12.1a Friedrich Egermann (Bohemian, 1777-1864), *Kulm Goblet,* cut, engraved, stained, and enameled non-lead glass, 10 x 4 ½ in / 25.6 x 11.6 cm, Harrach Glasshouse, Bohemia, 1835 (Corning Museum of Glass). https://glasscollection.cmog.org/objects/12038/the-kulm-goblet?ctx=a60be767150f1dad4d9b5069cf0deb9404f0aa73&idx=0



Figure 12.1b Friedrich Egermann (Bohemian, 1777-1864), detail of *Kulm Goblet*, cut, engraved, stained, and enameled non-lead glass, Harrach Glasshouse, Bohemia, 1835 (Corning Museum of Glass). https://glasscollection.cmog.org/objects/12038/the-kulm-goblet?ctx=a60be767150f1dad4d9b5069cf0deb9404f0aa73&idx=0



Figure 12.1c Friedrich Egermann (Bohemian, 1777-1864), detail of *Kulm Goblet*, cut, engraved, stained, and enameled non-lead glass, Harrach Glasshouse, Bohemia, 1835 (Corning Museum of Glass). https://glasscollection.cmog.org/objects/12038/the-kulm-goblet?ctx=a60be767150f1dad4d9b5069cf0deb9404f0aa73&idx=0

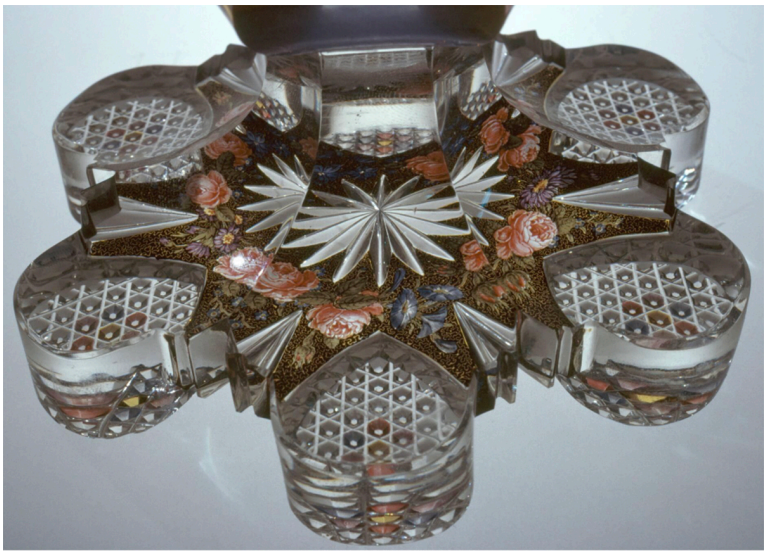

Figure 12.1d Friedrich Egermann (Bohemian, 1777-1864), foot of *Kulm Goblet*, cut, engraved, stained, and enameled non-lead glass, Harrach Glasshouse, Bohemia, 1835 (Corning Museum of Glass). https://glasscollection.cmog.org/objects/12038/the-kulm-goblet?ctx=a60be767150f1dad4d9b5069cf0deb9404f0aa73&idx=0

Many attempts were made to manufacture glass in America, beginning in 1608. It was not until 1739, though, that Caspar Wistar (German, 1696-1752) was able to successfully manufacture glass in southern New Jersey. His expert German glassmakers produced window glass, **mold-blown** bottles, and tableware. Many factories soon sprung up, especially in the Northeast.

Hinged two-piece wooden **molds** helped shape blown vessels (Figure 4.17e) for centuries. Then, in the 1800s, foot-operated cast iron blow molds were used for the first time that could efficiently produce decorative liquor bottles embellished with symbols, words, and celebrity portraits (Figure 12.2a).



Figure 12.2a Philip Doflein (American, active 1831-1899), *Treadle Blow Mold*, cast iron, 12 ¼ x 8 ½ in / 31.1 x 21.6 cm, Milford, NJ, ca. 1850 (Philadelphia Museum of Art). https://www.philamuseum.org/collection/object/50525

It was John P. Bakewell's invention of the mechanical glass pressing machine in 1825 that revolutionized and dramatically increased glassware production, though. Figure 12.2b shows molten glass (B) in a mold, a

plunger (C), and the handle (D) that, when pulled downwards, forces the plunger into the glass in the mold. This American technological innovation was based on simpler 18th century European hand presses with plungers. A press molding machine enabled two minimally skilled men to produce four times as much as a larger team of trained **glassblowers**, which increased production and lowered cost.

The first press molds consisted of one or two pieces; later molds were more complex (Figure 12.2c). One person dropped molten glass into the mold, then another lowered the plunger to force the glass into the recesses of the mold. The mold was opened to release the completed piece. If too much glass was **gathered**, the piece would be too thick, but insufficient glass would not completely fill the mold. If the metal mold was too hot, it would adhere to the glass and not produce a polished surface. Wrinkles could form when the hot glass contacted a cold mold, so early pressed glass pieces (Figure 12.3) were designed with lacy patterns inspired by cut glass (Figures 12.1d, 12.30a, and 12.30b) to hide the imperfections. Pressed patterns became simpler in the 1840s after wrinkles were no longer a problem.

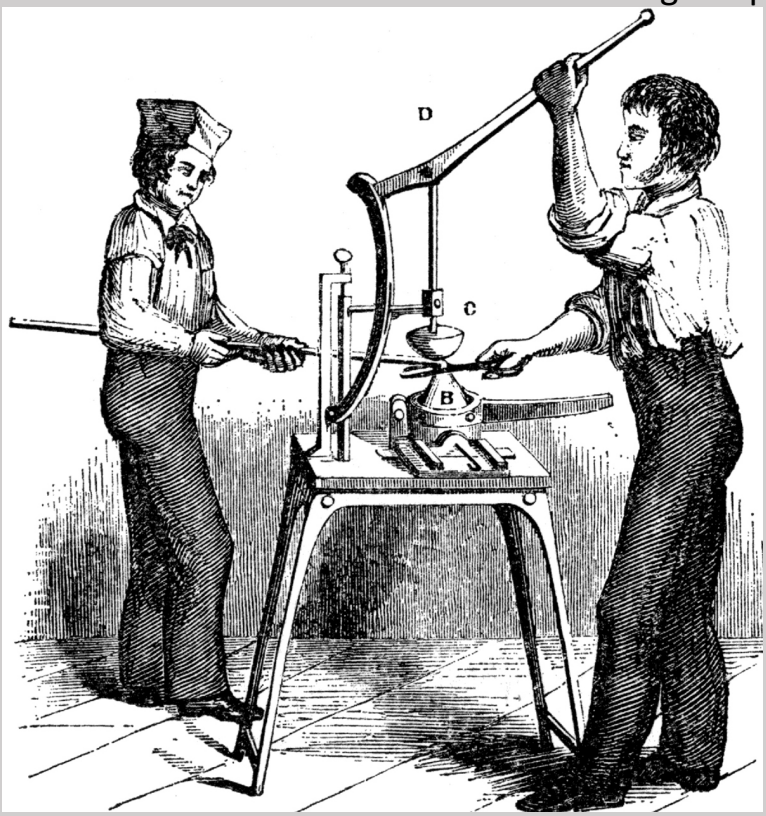

Figure 12.2b Pressing glass (from Pellatt, Apsley, C*uriosities of Glass Making*, London: David Bogue, 1849).



Figure 12.2c Hinged metal press mold for a pressed glass fruit bowl, Royal Glass Factory in La Granja, Spain (photograph by Carol Ventura, 2005).

The ornate imagery on the press molded *Tray* in Figure 12.3 was inspired by cut glass (Figures 12.1d, 12.30a, and 12.30b), which was much more expensive. The busy, textured surface was an aesthetic choice, but also camouflaged imperfections caused by the press molding process (Figure 12.2b).

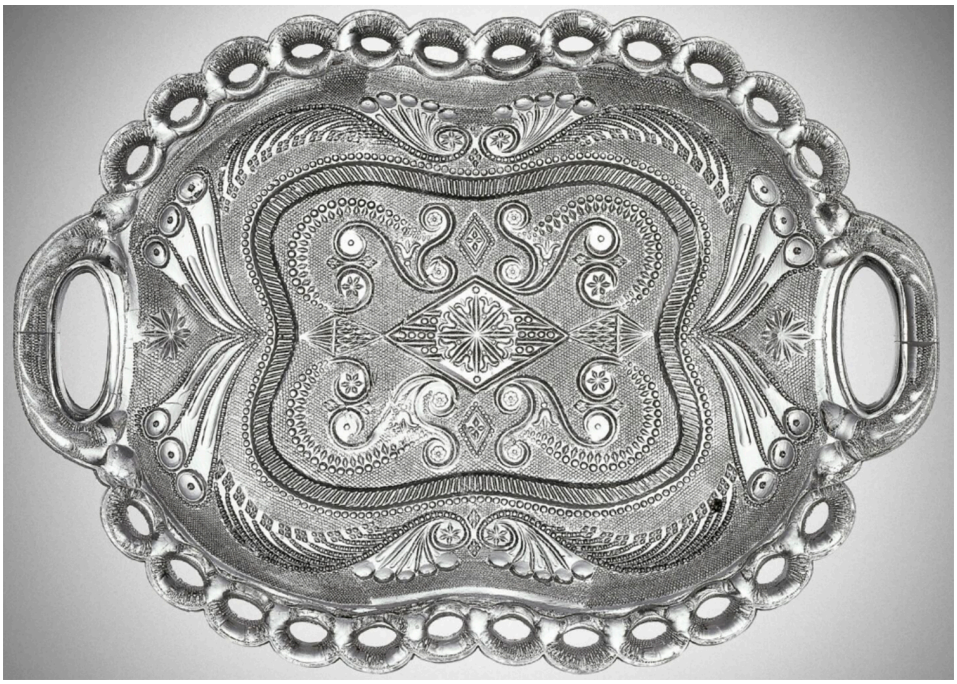

Figure 12.3 *Tray* with openwork rim, press molded colorless lead glass with fan and scroll design, 1 ¼ x 3 7/8 x 11 7/8 in / 3.1 x 20 x 30 cm, 1830-1845, Boston and Sandwich Glass Company, Massachusetts (Corning Museum of Glass). https://glasscollection.cmog.org/objects/7905/tray?ctx=5f089e41448eb96470f78046051a9371333fcaa7&idx=0

The English Spode **Ceramic** Factory added 50% bone ash to porcelain to produce chip-resistant **bone china**. This ware was softer than true porcelain but more translucent, and it held its shape better during firing. Spode mass-produced fine quality transfer-printed and hand painted **pottery**, as well as a range of ornamental bone china and table ware. The shape of the *Vase* in Figure 12.4 was inspired by contemporary metalware. The mansion at Penkhull was hand painted on one side. The other side features a bouquet of flowers.



Figure 12.4 *Vase* (front and back views), bone china and **enamels**, 10 in / 25.4 cm high, Spode Ceramic Factory, Stoke-on-Trent, England, ca. 1825 (Victoria and Albert Museum, Given by Miss H. M. Gulson in memory of Mr. J. Spode). https://collections.vam.ac.uk/item/O71449/vase-spode-ceramic-works/

The 19th century saw the discovery of diamonds in Brazil, diamonds and **gold** in South Africa, gold in California and Australia, and **silver** in Nevada. Innovations included electro-**gilding**, which superseded toxic **mercury-gilding** (mixture of mercury and gold was applied, then heated until the mercury evaporated). Skilled workers were replaced by chain and **bezel** making machines and by **stamping** machines that quickly transformed a flat sheet of metal into a decorative shape. British copyright laws introduced in 1842 protected new patterns and processes. Designs were patented, then stamped with a small mark that encoded the firm and the date of registration.

Up to the mid-19th century, most jewelry was imported to the United States from Europe. Tiffany in New York (founded in 1837) only sold imported goods until 1848, when they began to produce their own jewelry.

By the 1870s they had outlets in Paris, London and Geneva and participated in major international exhibitions.

Fashionable 19th century women adorned their hair, neck, ears, wrists, and fingers. Safety catches, earring clips, and screw-fastening offered many options. Historic styles that embraced nature, ornament, and intricate detail were revived during the English Victorian Period (1837-1901). The Rococo-inspired floral bodice ornament in Figure 12.5 was crafted with brilliant cut and rose-cut diamonds set in silver, backed with gold. Some of the flowers are mounted on springs, allowing them to tremble as the wearer moved which increased the sparkle.



Figure 12.5a *Spray Ornament* (with back and detail), diamonds set in silver and backed with gold, 11 x 6 x 1 5/8 in / 27.7 x 15 x 4.2 cm, England, ca. 1850 (Victoria and Albert Museum).
https://collections.vam.ac.uk/item/O74518/spray-ornament-unknown/



Figure 12.5b *Spray Ornament* (back), diamonds set in silver and backed with gold, 11 x 6 x 1 5/8 in / 27.7 x 15 x 4.2 cm, England, ca. 1850 (Victoria and Albert Museum). https://collections.vam.ac.uk/item/O74518/spray-ornament-unknown/



Figure 12.5c *Spray Ornament* detail, diamonds set in silver and backed with gold, England, ca. 1850 (Victoria and Albert Museum). https://collections.vam.ac.uk/item/O74518/spray-ornament-unknown/

Archaeological discoveries inspired yet more 19th century revivals. While some jewelers made reproductions, Eugene Fontenay (1823-1887) created archaeologically inspired pieces that incorporated diamonds and enamel. The gold Fontenay *Necklace* in Figure 12.6 has five oval pendants enameled with personifications of Europe and the Seasons. The ovals are framed in diamonds and separated by stylized palmette-shaped pendants. Forty-one leaf-shaped pendants, decorated with **granulation** and wirework are suspended from plain and coiled tubular links.



Figure 12.6 Eugêne Fontenay (French, 1823–1887), *Necklace*, gold, enamel and diamonds, 16 3/8 in / 41.6 cm, France, ca. 1870 (Metropolitan Museum of Art, Gift of Dorothy Burr Thompson, 1987, CC0). https://www.metmuseum.org/toah/works-of-art/1987.252

Furniture was still crafted with traditional techniques in the early 19th century, but woodworking machines were beginning to transform the industry. Steam engines and waterwheels powered **veneer** cutting machines, rotary cutters, and lathes, which lowered the cost of production.

Rhode Island supported a thriving furniture making industry. Although the spindles were probably shaped by hand with drawknives (Figures 12.8b and 12.8c), the legs of the Windsor Settee in Figure 12.7 were more than likely turned on a mechanized lathe.



Figure 12.7 *Windsor Settee*, butternut, 47 x 39 x 14 1/2 in / 119.4 x 99.1 x 36.8 cm, Rhode Island, US, ca. 1770–1800 (The Metropolitan Museum of Art, Gift of Mr. and Mrs. Paul Moore, 1946, CC0). https://www.metmuseum.org/art/collection/search/9864

The legs and spindles of a Windsor chair (Figure 12.7) are inserted into a carved plank seat. This popular style was first produced in England around 1720, then began to be made in America in 1740. Although most Windsor

chairs are machine-made today, some are still crafted by hand with traditional techniques.

In Tennessee, seats are carved from air-dried white pine, popular, or basswood. Maple, hickory, ash, and birch spindles are shaved, shaped, and some are steam-bent. Hardwood logs with straight, close grain are split with a mallet and froe (Figure 12.8a). A foot-operated shaving horse secures the wood as it's roughed out with a large drawknife (Figure 12.8b).



Figure 12.8a Steve Blouin splits oak with a mallet and froe at the Appalachian Center for Craft, TN (photograph by Carol Ventura, 1999).



Figure 12.8b Tim Hintz pulls large drawknife toward himself to rough shape wood secured in a shaving horse at the Appalachian Center for Craft, TN (photograph by Carol Ventura, 1999).

John Quick sits on a shaving horse while he refines the shape with a spokeshave (Figures 12.8c and 12.8d). The work is secured with a pivoting wedge controlled by his right foot. He assembles the chairs with wedges or pegs and finishes them with eight or more coats of hand-rubbed milk paint and linseed oil, then polishes the surface to highlight the tool marks and enhance the chair's character.



Figure 12.8c John Quick pulls a small drawknife toward himself to shape the leg of a Windsor chair that is secured on a shaving horse, Tennessee Craft Spring Fair, Nashville, TN (photograph by Carol Ventura, 2006).



Figure 12.8d John Quick pulls a small drawknife towards himself to shape the leg of a Windsor chair that is secured on a shaving horse, Tennessee Craft Spring Fair, Nashville, TN (photograph by Carol Ventura, 2006).

Tabitha Babbitt (American, 1779-1853) invented the circular saw in 1810 after noticing the inefficiency of hand sawing in her Shaker community in Massachusetts, one of twenty located between Maine and Kentucky. Shakers were Christians who believed in racial and sexual equality, celibacy, pacifism, and common property. The Shaker style is functional and simple. Their iconic ladderback chairs, rocking chairs, and benches (Figure 12.10) were crafted for their own use and for sale. The innovative woven **cotton** tape seat in the *Shaker Rocking Chair i*n Figure 12.9 was easy to install, economical, decorative, and comfortable. The round hand grips and shaped blades suggest it was made in New Lebanon, New York.



Figure 12.9 *Shaker Rocking Chair*, maple, birch, and cotton tape, 38 1/4 x 22 5/8 x 28 in / 97.2 x 57.5 x 71.1 cm, New Lebanon, NY, 1820-1850 (The Metropolitan Museum of Art, CC0).
https://www.metmuseum.org/art/collection/search/6871



Figure 12.10 *Shaker Bench*, birch with pine seat, Enfield, New Hampshire, before 1923 (Shaker Museum). https://www.shakermuseum.us/object?id=7345&limit=24&offset=0&sort=name_ref&q=bench

Michael Thonet (1796-1871) patented a steam bending process for building furniture in 1841. He and his sons were the first to produce furniture with machines that allowed minimally skilled workers to make bent components. He was also the first to ship mass produced ready to assemble furniture to his distributors, greatly saving shipping costs. Steam bending had been used to make Windsor Chair components, but the pieces had to be shaped after being bent. Thonet bent dowels that only required trimming. *Chair #14* in Figure 12.11 was their most popular item. Later versions were fashioned with thicker wood and included an additional circular rail below the seat.



Figure 12.11 Michael Thonet (Austrian, 1796-1871), *Chair #14*, steam-bent, solid beechwood frame, laminated beech and caned seat, stained wooden parts, 37 x 16 1/8 x 18 in / 93.8 x 41 x 45.7 cm, Vienna, Austria, ca. 1859 (Victoria and Albert Museum).
https://collections.vam.ac.uk/item/O1240872/chair-chair-thonet/

The first upholstered chairs appeared in the 17th century. Upholstery cloth was more valuable than wood, so furniture was often designed to

match the dimensions of the cloth. Patterns were not centered if the edge of the cloth had to be trimmed because of the expense.

John Henry Belter (1804–1863) was a German cabinetmaker who moved to New York City when he was twenty-nine years old. His factory made upholstered, sinuously shaped furniture in the ornamental Rococo Revival style. The strong, curved frames of the *Sofa* (Figure 12.12) were constructed by gluing six to eight thin layers of rosewood together with the grain of one layer running ninety degrees to the next, then steam bending the slab in a mold before carving the floral motifs.



Figure 12.12 John Henry Belter (American, 1804–1863), *Sofa*, carved molded laminated rosewood, 53 1/4 x 66 x 25 in / 135.3 x 167.6 x 63.5 cm, New York, 1850-1860 (The Metropolitan Museum of Art, Purchase, Friends of the American Wing Fund and Lila Acheson Wallace Gift, 1999, CC0). https://www.metmuseum.org/toah/works-of-art/1999.396

Handwoven **coverlets** with **loom**-controlled overshot patterns were extremely popular in America from 1750 through the early 1900s. These bed coverings, with repeating geometric patterns, were often woven at home on narrow four-**harness** looms with undyed cotton **warp**. The **weft** consisted of undyed cotton woven over one warp and then under one warp

across (plain weave) and thicker dyed **wool** or cotton **supplementary weft** that shot over several warps to create patterns.

The side fringe was added to the *Coverlet* in Figure 12.13, but the warp forms the fringe on the bottom. The blue, reddish-brown, and white panels were carefully prepared to match the pattern down the middle where they were whip stitched together. Lightweight reversible summer-winter coverlets are dark on one side and light on the other. An extensive index of 19th century American coverlet designs, weavers, and locations is at https://coverletindex.miraheze.org/wiki/Main_Page.

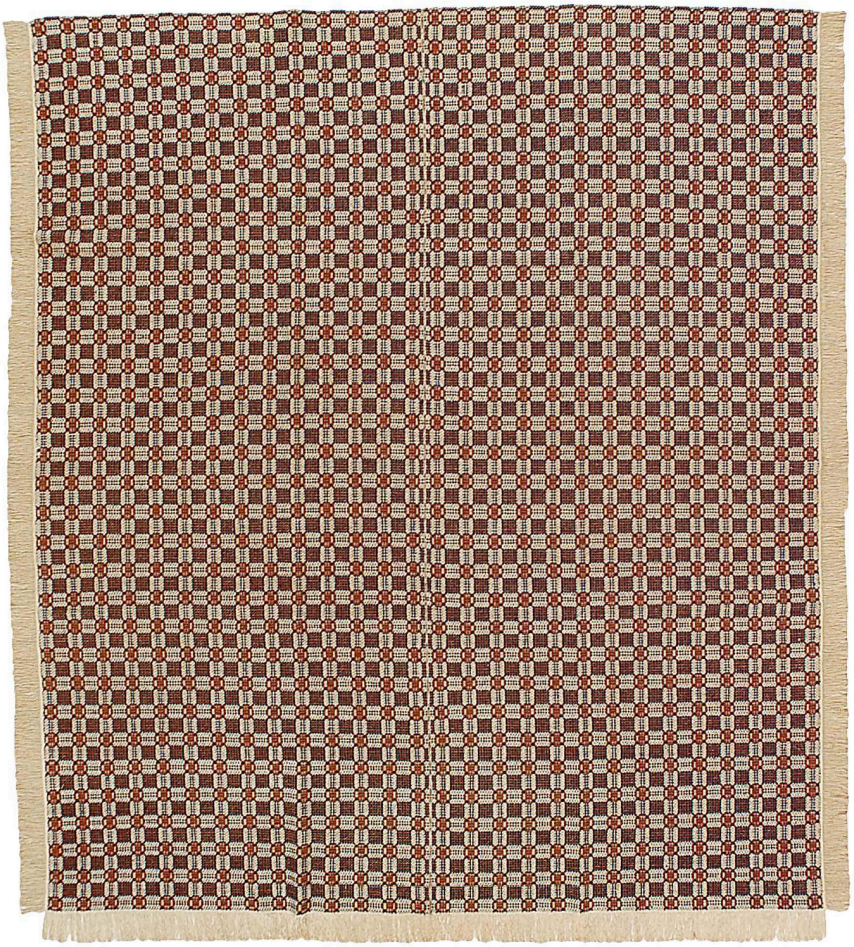

Figure 12.13 *Coverlet* overshot woven cotton warp with cotton and wool weft, 98 1/16 x 88 3/8 in / 249 x 224.5 cm, America, early 1800s (Museum of Fine Arts, Boston, Gift of Mrs. Ashton Sanborn in memory of Ashton Sanborn). https://collections.mfa.org/objects/123279/coverlet?ctx=5706828a-b658-4f28-a475-b30cb16271f2&idx=0

In 1804, Joseph Marie Jacquard (French, 1752-1834) perfected a warp control mechanism to weave complex patterns without the need of a "draw boy" (see Figures 5.37a, 5.38a, and 8.14e). The device, mounted on top of a loom, utilizes punched cards (Figure 12.14a) to control individual warp threads. A graph paper pattern determines the location of the holes in each card. Each square on the graph paper and hole in the card represents one warp. Each punch card represents one weft pass, one row of woven pattern from the graph paper. The holes can be made with a hammer and punch (Figure 12.14b), or with a piano card puncher (Figure 12.14c). The punched cards are sequentially arranged and then laced together into a continuous chain (Figure 12.14d), advancing one by one as the **fabric** is woven (Figure 12.14e).

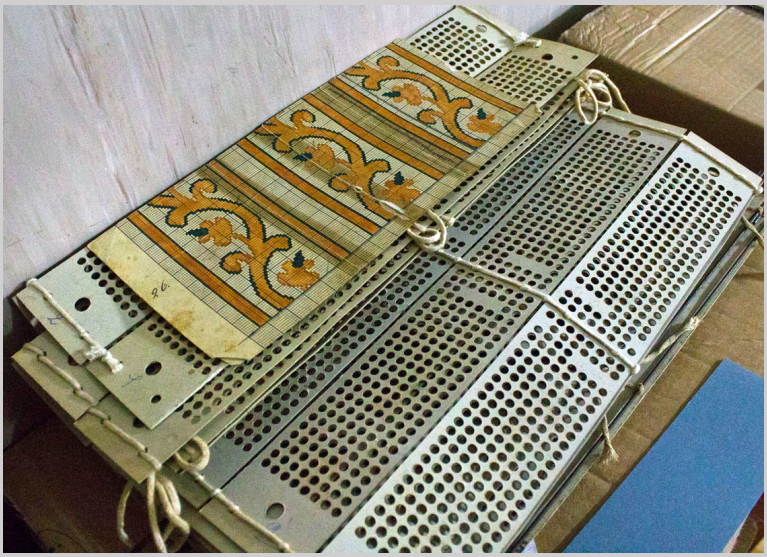

Figure 12.14a Each punched card corresponds to one horizontal row of the graphed image at the Tessitura Artigianale Giuseppe Gaggioli in Zoagli, Italy (photograph by Carol Ventura, 2013).



Figure 12.14b Tools for hand punching Jacquard cards at Rubelli in Como, Italy (photograph by Carol Ventura, 2013).

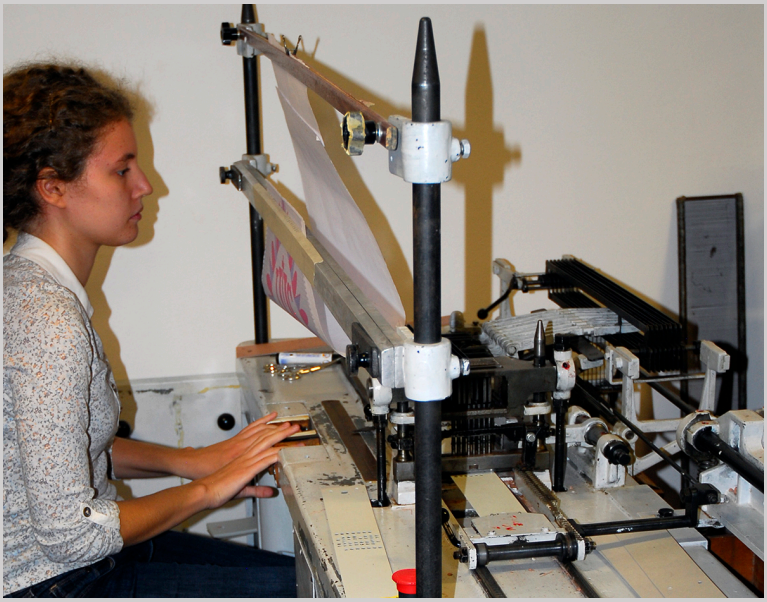

Figure 12.14c Cards being punched on a piano card puncher, following a graph paper pattern at the Lisio Foundation in Florence, Italy (photograph by Carol Ventura, 2013).



Figure 12.14d Cards are then sequentially laced together to form a continuous chain at the Lisio Foundation in Florence, Italy (photograph by Carol Ventura, 2013).

A quarter turn of a rotating perforated rectangular head advances the next card. Each hole in the card accepts a rod attached to a hook that controls one or more cords, each of which passes through a guide and attaches to a weighted heddle (Figure 12.14e). Although computerized looms (Figure 13.67c) are popular today, some weavers still prefer to weave fabrics with complex imagery on less expensive Jacquard controlled looms (Figure 5.38m).



Figure 12.14e Punched cards laced together on a Jacquard head box on top of a loom with white cords that control the heddles at the Artigiana Giuseppe Gaggioli weaving studio in Zoagli, Italy (photograph by Carol Ventura, 2013).

Horizontally repeating motifs seen in are typical of Jacquard woven **textiles** because each hook can connect to multiple loom cord heddles to efficiently reproduce a mirror image across a fabric. Vertical repeats occur each time the card sequence has been completed and rewoven (Figures 12.16 and 12.17). The pattern repeat may be a mirror image if the cards are read in reverse order, as was done while weaving the Coverlet in Figure 12.15.

Beginning in the 1820s, heavier double-cloth coverlets with complex imagery were woven by professional weavers in Pennsylvania on wide Jacquard looms with two sets of interconnected warps and wefts. The one-piece *Coverlet* in Figure 12.15 features medallions in the middle and tulips and bellflowers along the sides.



Figure 12.15 Leonard Metz (American, 1810-ca. 1885), *Coverlet*, Jacquard woven cotton and wool 101 x 94 in / 256.54 x 238.76 cm, Montgomery County, Norriton Township, Pennsylvania, 1842 (The Metropolitan Museum of Art, Gift of Dr. Marilyn Jenkins-Madina, in loving memory of her husband, Professor Maan Z. Madina, 2014, CC0).
https://www.metmuseum.org/art/collection/search/665553

The Arts and Crafts Movement (1860-1930s) began as a revolt against mechanized mass-produced objects and longed for the skilled craftsmanship of the Medieval Period (576 CE through the 1400s) and the East. This movement valued handmade over industrially manufactured products. The English artist, poet, and bookmaker William Morris (1834–1896) helped establish this craft revival through the decorator accessories that he and his colleagues designed and created for Morris and Company

(1875-1940). Their business specialized in naturally dyed one of a kind and production high-warp woven tapestries (Figure 11.6), carpets, woven fabrics, block-printed yardage and wallpaper, furniture, metalwork, and stained glass windows.

William Morris' fabric and wallpaper designs were inspired by Medieval and Islamic art, botanical illustrations, and nature. *Violet and Columbine* (Figure 12.16) was woven on a Jacquard controlled handloom (Figure 12.14) at Morris and Company's Merton Abbey Works in London.



Figure 12.16 William Morris (British, 1834-1896), *Violet and Columbine,* Jacquard woven wool and mohair double cloth, 48 ¼ x 71 1/8 in / 122.6 x 180.7 cm, Merton Abbey Works, London, 1883 (Cleveland Museum of Art). https://www.clevelandart.org/print/art/1953.329

Morris' most commercially successful design, *Strawberry Thief* (Figure 12.17), was inspired by 15th and 16th century Italian textiles. It was block printed with indigo discharge, an Indian technique that he revived in England. Cotton fabric was washed, dyed dark blue in indigo (Figure 5.41), then block printed (Figure 5.45) with bleach to create light blue and white areas. The blue dye was removed from the bleached areas when the cloth was washed. Alizarin and weld were used to print the red and yellow parts of the design.



Figure 12.17 William Morris (English, 1834-1896), *Strawberry Thief*, alizarin, weld, indigo discharge block printed cotton, 34 ¾ x 39 in / 88.3 x 99.1 cm, Morris and Co. at Merton Abbey Works, London, 1883 (Cleveland Museum of Art). https://www.clevelandart.org/art/1937.696

Art Nouveau (1892-1914) grew out of the English Arts and Crafts movement. Designers were still inspired by nature, but unlike the Arts and Crafts movement, Art Nouveau artists and designers used old and new materials and technologies, often including both expensive and non-precious materials in their designs as well.

Hector Guimard (1867-1925) studied and then taught at the School of Decorative Arts and the School of Fine Arts in Paris. He designed the first Art Nouveau style residence in Paris, the Castel Béranger, along with the furniture, carpets, glass (Figure 12.18), ceramic tiles, wallpaper, rain spouts, door locks, doorknobs, and entrance *Gate* (Figure 12.19). The same year he won a prestigious award for the façade, Guimard was commissioned to design Paris Metro entrances, of which 86 survive.



Figure 12.18 Designed by Hector Guimard (French, 1867-1925) and made by Georges Néret (active 1850-1919), *Window*, **leaded glass**, Castel Béranger, Paris, 1895-1898 (photograph by Jean-Pierre Dalbéra from Paris, France - Les vitraux du Castel Béranger (Hector Guimard), CC BY 2.0). https://en.wikipedia.org/wiki/Castel_B%C3%A9ranger#/media/File:Les_vitraux_du_Castel_B%C3%A9ranger_(Hector_Guimard)_(5478757835).jpg



Figure 12.19 Hector Guimard (French, 1867-1925), *Gate*, wrought iron, Castel Béranger, Paris, 1895-1898 (photograph by Groume - Flickr: Castel, CC BY-SA 2). https://en.wikipedia.org/wiki/Castel_B%C3%A9ranger#/media/File:Castel_B%C3%A9ranger,_February_16,_2013.jpg

Charles Lewis Tiffany (American, 1812-1902) founded Tiffany and Company in 1837. In 1886, he developed the "Tiffany Setting" that made diamonds sparkle. Securing the stone with six prongs instead of encasing it in a bezel allowed light to enter from all sides.

His son, Louis Comfort Tiffany (1848-1933), was an artist and designer, most famous for his work in glass. Tiffany opened his first glass house in 1878. He went on to established companies that fabricated furnishings, desk sets, **art glass**, lamps, stained glass windows, and ceramics. Tiffany was very successful until the 1920s, when the popularity of his work declined.

Tiffany mixed different colors of molten glass together to produce "favrile" glass (Figure 12.20). He patented the process in 1894. "Favrile" derives from the Old English word meaning "belonging to a craftsman or his craft." Tiffany said it "is distinguished by certain remarkable shapes and

brilliant or deeply toned colors, usually iridescent like the wings of certain American butterflies, the necks of pigeons and peacocks, the wing covers of various beetles." (Couldrey 1996:94).

Tiffany's 1900 Paris catalogue statement said, "…in none of the specimens of this glass is there any application of decoration by painting. Such designs as are found are in all cases produced by the combination of different colored glass during the operation of blowing the piece." (Zerwick 1990:98). Various metallic oxides were added to molten glass to colorize it. Manganese, cobalt, and iron were combined to produce black glass. Different formulas were used to produce other colors, including cobalt for blue; iron for green; manganese for purple; gold, **copper,** or selenium for red; and uranium for chartreuse. The surface iridescence was inspired by excavated Roman glass that had developed a metallic patina over the millennia from being buried in the earth. The lustrous surface of Tiffany glass resulted from exposing specially batched and worked glass to metallic salt spray.



Figure 12.20 Designed by Louis Comfort Tiffany (American, 1848-1933) for Tiffany Decorating Company, *Vase*, Favrile glass, 10 3/4 x 5 ¼ in / 27.3 x 13.3 cm, Corona, NY, 1899 (Philadelphia Museum of Art, purchased with the

Joseph E. Temple Fund, 1901).
https://philamuseum.org/collection/object/124970

The stained glass window in Figure 12.21 was originally installed in the music room of Rochroane Castle, a Gothic Revival mansion built on a hill overlooking the Hudson River in New York. The imagery was inspired by the summer landscape. Agnes Northrop is believed to have designed the window for Louis Comfort Tiffany, who supervised the project.

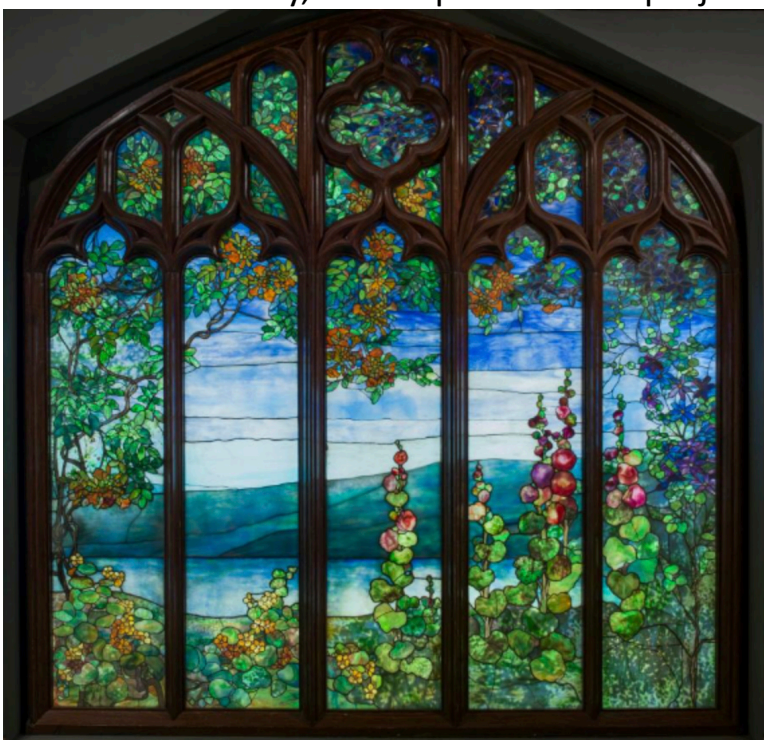

Figure 12.21 Louis Comfort Tiffany (American, 1848-1933), Artistic Director, probably designed by Agnes Northrop (American, 1857-1953), *Window from Rochroane Castle*, cut and assembled favrile glass, lead came, and wood, 11 ft 4 ¼ in / 346.2 cm high, Irvington-on-Hudson, NY, 1905 (Corning Museum of Glass). https://glasscollection.cmog.org/objects/18399/stained-glass?ctx=f59c87bab71d5fa7fe7113866dc2c6b1c97e6abd&idx=0

Skilled female designers and craftswomen worked in the Tiffany Studios lampshade department. **Brass** templates served as patterns for the glass components. Tiffany is credited for inventing the copper foil technique in the 1890s. With this technique, glass is cut to shape, the edges are wrapped in copper foil, the piece is pinned in place over a pattern next to other foiled

pieces (Figure 12.22b), then they are **soldered** together with a hot soldering iron that melts lead onto the copper.



Figure 12.22a Copper foil, lead, soldering iron, and lampshade mold from Tiffany Studios, 1900-1907 (Metropolitan Museum of Art, photograph by Carol Ventura). https://www.metmuseum.org/art/collection/search/7607

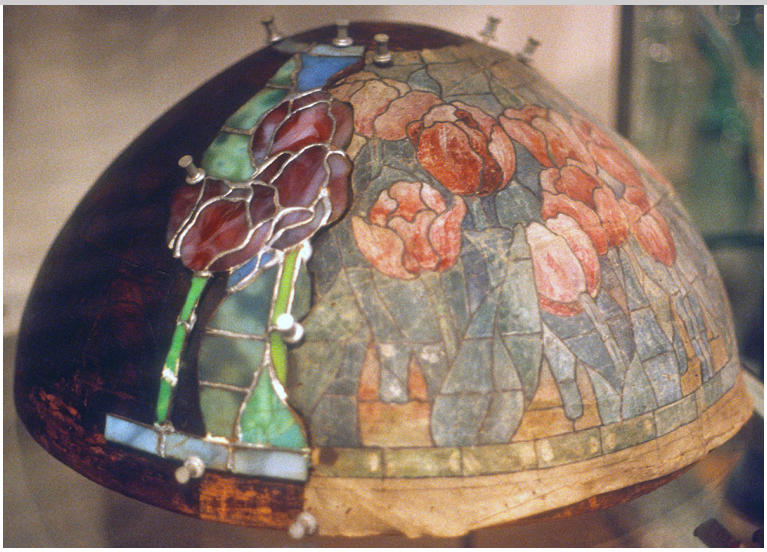

Figure 12.22b Wooden lampshade form with soldered and unsoldered copper foiled glass over a **cartoon** from Tiffany Studios, 1900-1907 (Metropolitan Museum of Art, photograph by Carol Ventura). https://www.metmuseum.org/art/collection/search/7607

The *Wisteria Lamp* in Figure 12.23 won a grand prize for Tiffany Studios at the 1902 International Exposition in Italy. The bronze base features vines rising and forming the branches seen on the top of the

shade. Tiffany's glass **furnaces** produced the favrile glass, and the base was cast at his foundry.



Figure 12.23 Clara Wolcott Driscoll (American, 1861-1944) for Tiffany Studios, *Wisteria Lamp*, leaded favrile glass and bronze, 17 x 10 ½ in / 43.2 x 26.7 cm, New York, 1902-1910 (The Cleveland Museum of Art, CC0). https://www.clevelandart.org/art/2018.261

Carl Fabergé (1846–1920) took over his father's jewelry atelier in Saint Petersburg in 1872. He streamlined production, priced fairly, and cultivated a global market. By the turn of the century, the House of Fabergé employed hundreds of craftsmen and designers. It all came to an end in 1917 when

the Russian Revolution executed the Romanovs and closed the House of Fabergé.

Continuing a family tradition, on Easter in 1901 Tsar Nicholas II presented *The Gatchina Palace Egg* in Figure 12.24 to his mother, the Dowager Empress Marie Fedorovna. The open egg reveals an accurate miniature gold replica of the palace at Gatchina, her winter residence. Fabergé revived 18th-century enameling techniques, including the application of multiple layers of translucent enamel over engraved gold as seen on the shell of the egg.



Figure 12.24 Mikhail Perkhin (Russian, 1860-1903) for Peter Carl Fabergé (1846-1920), *The Gatchina Palace Egg,* gold, enamel, silver-gilding, portrait diamonds, rock crystal, and seed pearls, 5 x 3 9/16 in / 12.7 x 9.1 cm, 1901 (The Walters Art Museum, acquired by Henry Walters, 1930, CC0). https://art.thewalters.org/object/44.500/

Rene Lalique (1860-1945) was one of the greatest jewelers working in the Art Nouveau style. His *Dragonfly Corsage Ornament* in Figure 12.25 was a showstopper at the Paris Universal Exhibition in 1900, where he was awarded the Grand Prize. Inspired by nature, the gold and enameled

dragonfly has articulated open wings with plique-a-jour enamel (a difficult technique that looks like stained glass), diamonds, and moonstones. A chrysoprase female bust wearing a helmet decorated with enameled beetles emerges between gold claws at the top of a flexible enameled creature decorated with **cabochon** chalcedony.



Figure 12.25 Rene Lalique (French 1860-1945), *Dragonfly Corsage Ornament,* **chased** and enameled gold, sculpted chrysoprase, chalcedony, moonstones, and diamonds, 9 x 10 ½ in / 23 x 26.5 cm, ca. 1897-1898 (Calouste Gulbenkian Museum).
https://gulbenkian.pt/museu/en/works/dragonfly-corsage-ornament/

In 1919 Lalique purchased a factory that produced glass, which he called "an enchanted substance." The sculptural high relief on the **press molded** (Figure 12.2b) *Bacchantes Vase* in Figure 12.26 is typical of his glassware. Ten nude women dance around the vase with their arms and legs intertwined.



Figure 12.26 Rene Lalique (French 1860-1945), *Bacchantes Vase,* press molded and acid **etched** opalescent glass, 9 ½ x 8 ½ in / 24.2 x 21.7 cm, 1927 (Corning Museum of Glass).
https://glasscollection.cmog.org/objects/20284/bacchantes?ctx=4d99b311fac4efeb130639b37509c0d4311d6ce1&idx=0

Emile Gallé (French, 1846-1904) looked to nature for inspiration. He designed ceramics and furniture but is best known for his glassware. Gallé was one of the first designers to prominently sign his pieces (12.27b), initiating the art glass movement. His popular designs grew the family glass manufacturing business, and by the time Gallé took over, he was supervising more than 300 workers. Production continued after he died, but the quality declined.

Dragonfly Coupe in Figure 12.27 is one of Gallé's one-of-a-kind pieces. The bowl was blown with marbleized amber-yellow glass, then butterflies and a polychrome glass dragonfly with gold metal foil eyes were attached as the bowl was being worked with a tricky Renaissance **intarsia** technique

that he perfected. The surface was then covered with molten clear glass, then the rim was sculpted. After cooling, his signature and other decorative elements were engraved and acid etched.

The stem base was worked separately, then glued together with an adhesive. The blue knob was case (layered with lighter colored glass) cooled, then spirals were cut through the outer layer.



Figure 12.27a Emile Gallé (French, 1846-1904), *Dragonfly Coupe,* metal foil and blown glass, cased, hot-applied inlaid decorations, acid-etched, cut, and engraved, 7 ¼ x 7 ¾ in / 18.4 x 19.6 cm, Nancy, France, 1903 (Corning Museum of Glass, Gift in part of Benedict Silverman in memory of Gerry Lou Silverman). https://glasscollection.cmog.org/objects/28355/la-libellule-the-dragonfly?ctx=e5318b7b41e981539846326b7901eb2500cf79e8&idx=0



Figure 12.27b Emile Gallé (French, 1846-1904), signature in *Dragonfly Coupe,* engraved and acid-etched signature, Nancy, France, 1903 (Corning Museum of Glass, Gift in part of Benedict Silverman in memory of Gerry Lou Silverman). https://glasscollection.cmog.org/objects/28355/la-libellule-the-dragonfly?ctx=e5318b7b41e981539846326b7901eb2500cf79e8&idx=0

Dawn and dusk, life and death, inspired Galle's elegant *Dawn and Dusk Bed* (Figure 12.28). Two butterflies alight on a glass egg in the center of the footboard, representing the birth of a new day. A large moth, wings outstretched, hovers over the setting sun on the headboard.



Figure 12.28 Emile Gallé (French, 1846-1904), *Dawn and Dusk Bed*, rosewood, ebony, and marquetry, glass, abalone, mother of pearl, pearl, 56 x 75 x 85 in / 142.24 x 190.5 x 215.9 cm, Nancy, France, 1904 (© Museé de L'Ecole de Nancy). https://musee-ecole-de-nancy.nancy.fr/fileadmin/MEN/Notices/Mobilier/4-_M0513_H60_cliche_Michel_Bourguet_1_1.jpg

Louis Majorelle (1859-1926) was an outstanding decorator and furniture designer working in the Art Nouveau style in Nancy, France. He directed the family **earthenware** and furniture factory into new directions after his father died, adding a metalwork atelier to produce drawer pulls, furniture mounts, lamps, balconies, and staircase railings. Elegant **carved** wood details and nature-inspired marquetry are signature elements of Majorelle's furniture (Figure 12.29).



Figure 12.29 Louis Majorelle (French, 1859-1926), *Seaweed Buffet*, carved wood, marquetry and wrought-**iron** mounts, France, 1905 (© Museé de L'Ecole de Nancy). https://musee-ecole-de-nancy.nancy.fr/fileadmin/MEN/Notices/Mobilier/7-_Majorelle__Meuble_aux_Algues__MEN__cliche_Studio_Image_1_1.jpg

Liberty and Company (British, 1875-present) imported fashionable pieces and exported their own line manufactured by Haselers of Birmingham. Liberty's products were mass produced, but faux hammer

marks and uneven surfaces gave them a handmade look. Archibald Knox (1864-1933) designed several pieces for Liberty's *Cymric Line*, including the *Claret Jug* in Figure 12.30. Celtic **interlace** motifs inspired the decorations. The Arts and Crafts movement inspired the clean lines, minimal ornament, and simple construction.



Figure 12.30 Archibald Knox (British, 1864-1933) for Liberty and Co., *Cymric Line Claret Jug*, silver and chrysoprase, 11 13/16 x 6 3/8 in /30 x 16.2 cm with handle, Britain, 1900-1901 (The Metropolitan Museum of Art, Harris Brisbane Dick Fund, 1992).
https://www.metmuseum.org/toah/works-of-art/1992.346

The *Plate* in Figure 12.31 is an exquisite example of the *Russian Pattern*. The White House ordered a large service of this dazzling glassware in 1891.

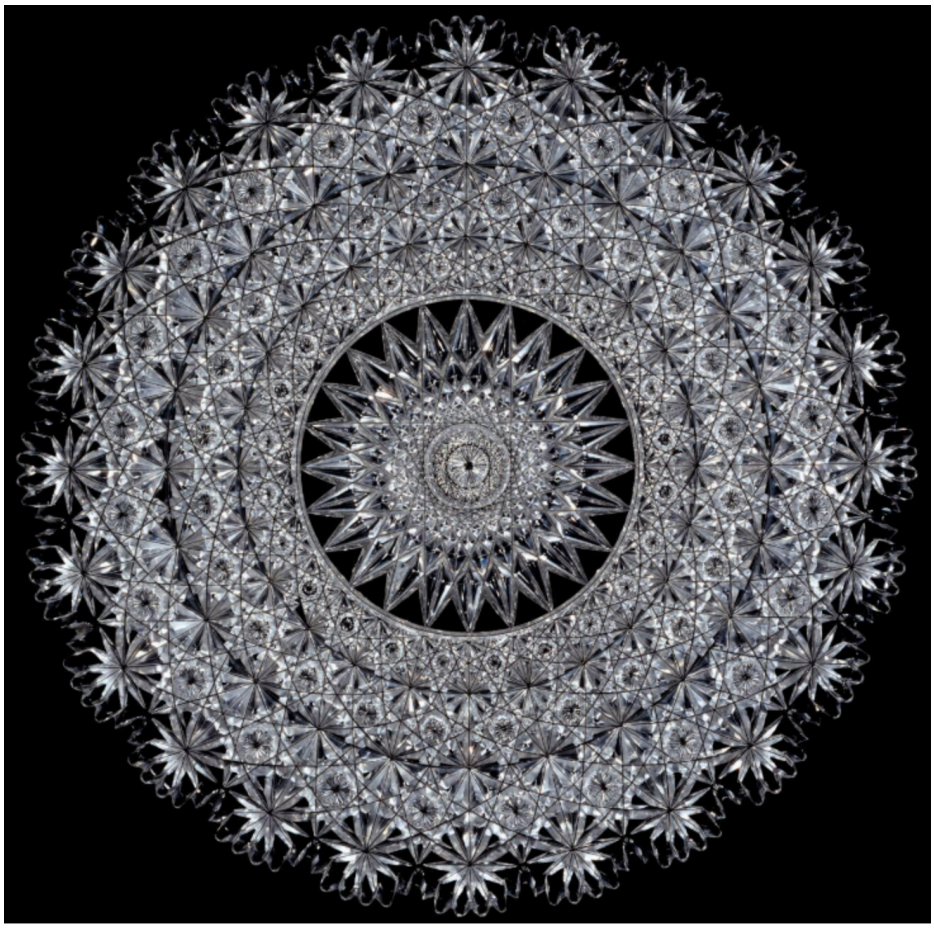

Figure 12.31a T. G. Hawkes and Company (American, 1880-1962), *Plate in Russian Pattern*, wheel cut and polished lead glass, 13 3/8 in / 34 cm diameter, Corning, NY, American, ca. 1906, (Corning Museum of Glass, Gift of T. G. Hawkes and Company).
https://glasscollection.cmog.org/objects/3769/russian?ctx=27fd7c8d53f28300c282cb83358deaf45a1b2a4d&idx=0

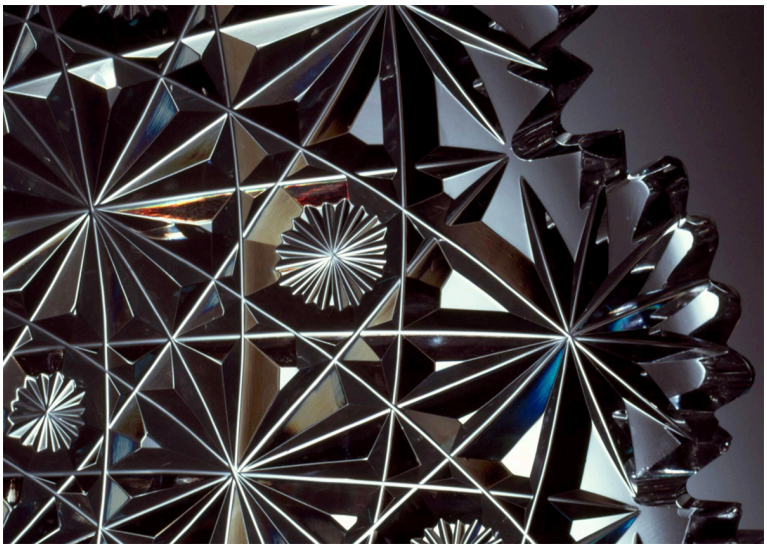

Figure 12.31b T. G. Hawkes and Company (American, 1880-1962), *Plate in Russian Pattern* detail, wheel cut and polished lead glass, Corning, NY, American, ca. 1906, (Corning Museum of Glass, Gift of T. G. Hawkes and Company). https://glasscollection.cmog.org/objects/3769/russian?ctx=27fd7c8d53f28300c282cb83358deaf45a1b2a4d&idx=0

Geometric patterns cut into lead glass make it sparkle. To produce the faceted surface, thick glass "blanks" are cut by holding them against a series of wet rotating abrasive wheels mounted on a lathe. The smoky white cut glass can be polished or dipped in an acid bath to restore translucency.

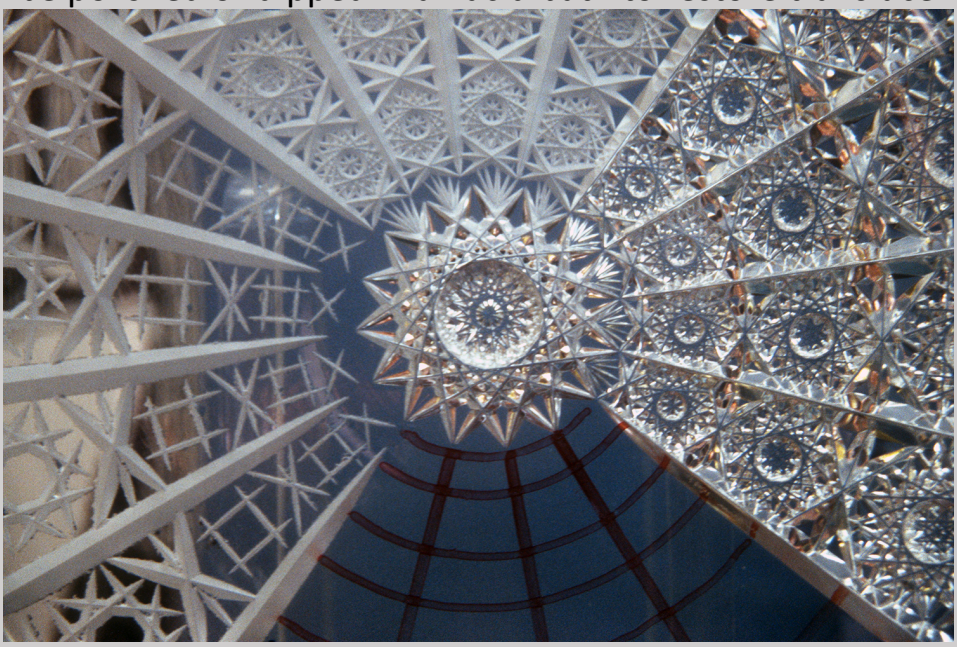

Figure 12.32a Cutting stages on marked lead glass blank, Museum of American Glass, Millville, NJ (photograph by Carol Ventura, 2011).

A hand-operated lathe rotated a small metal wheel to cut and engrave gems and glass before the 18th century. Abrasives, like emery, were mixed with oil and dripped onto the spinning wheel. A bow lathe is sometimes still used in India (Figures 5.39d) to shape and polish gems.

With the development of water and steam power in the 18th century, a belt could be wrapped around the stepped pulley of the lathe in Figure 12.32b to control the revolutions per minute (large pulley for a low rpm). Interchangeable copper engraving wheels of various shapes and sizes are in the stand. The drawer holds engraving stones for rough cutting, polishing points, metal tools, and disks. Today glass is cut and engraved on large abrasive wheels mounted to electric lathes (Figure 12.32f).



Figure 12.32b Graver by T. G. Hawkes and Company (American, 1880-1962), Engraving Lathe and Stand, copper wheels, brass, wood, leather, 1900-1950 (Corning Museum of Glass).
https://glasscollection.cmog.org/objects/32011/graver?ctx=b7496764e9f92eb20d7d9b45d55b4fd8dd8801be&idx=0

Horizontal guidelines are marked onto a glass with paint or a permanent marker by resting it against a support as the glass is rotated (Figure 12.32c). The glass is centered on a template to mark the vertical lines (Figure

12.32d). Diagonal lines are drawn (Figure 12.32e), then the piece is skillfully cut by pressing the glass against a wet abrasive wheel on a lathe (Figure 12.32f). Water drips onto the wheel to keep it cool because the heat generated from the friction of the rotating wheel could damage the glass.



Figure 12.32c Marking glass at the Glass School of the Royal Glass Factory in La Granja, Spain (photograph by Carol Ventura, 2005).

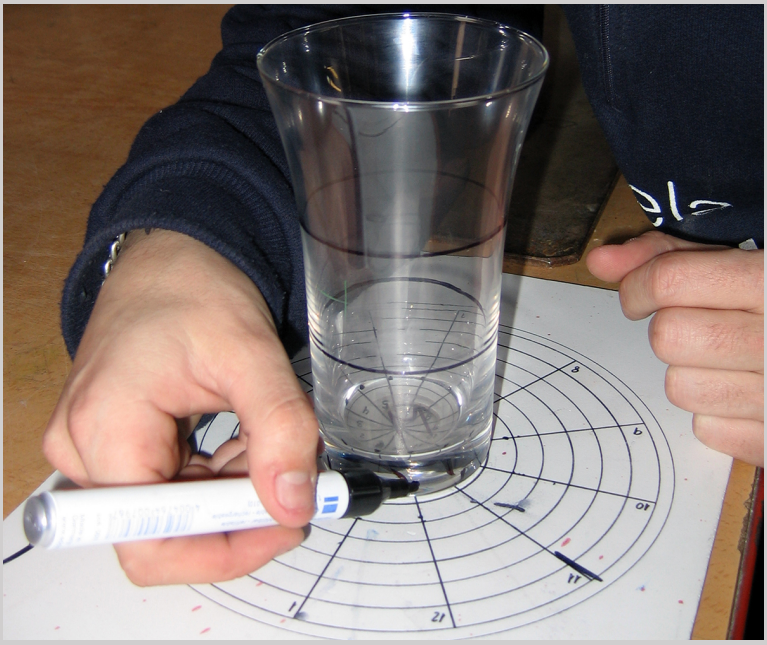

Figure 12.32d Marking glass on a template at the Glass School of the Royal Glass Factory in La Granja, Spain (photograph by Carol Ventura, 2005).



Figure 12.32e Marking glass at the Glass School of the Royal Glass Factory in La Granja, Spain (photograph by Carol Ventura, 2005).



Figure 12.32f Cutting glass on a lathe at the Glass School of the Royal Glass Factory in La Granja, Spain (photograph by Carol Ventura, 2005).

Rookwood Pottery (American, 1880-1967, then 2004-present; https://rookwood.com/?srsltid=AfmBOor_bIcrve-n5Cr988yzpmOw3GUmeL35Iou933124b-bcXyHurGN) was one of the first large manufacturing business founded and run by a woman in the United States and became the prototype of American art pottery. One of Maria Longworth Nichols' objectives was to "advance the manufacture of artistic work as well as to make cheap ware pretty." (Camusso and Bartone 1991:266). She combined the aesthetic sensibilities of handcrafted wares with the economic advantages of mass production. As was done in ancient Greek times, potters formed the pieces and artists decorated them.

Admiral Perry opened Japan to trade with the West in 1854, which led to the popularity of Japanese art in Europe and America. Japanese and Art Nouveau influence can be seen in the *Vase* in Figure 12.33, by Harriet Wilcox (1869-1943), a decorator at Rookwood Pottery between 1886 and 1907.



Figure 12.33 Harriet Wilcox (American, 1869-1943) for Rookwood Pottery Company, *Vase*, earthenware with mat inlay **glaze**, 13 3/4 x 6 in / 34.9 x 15.2 cm, Cincinnati, 1906 (Cincinnati Museum of Art, Gift of the Louis Haffner family). https://www.cincinnatiartmuseum.org/art/explore-the-collection?id=11297824&title=Vase

Adelaide Alsop Robineau (1865-1929) was a studio **ceramist** working alone in her home in Syracuse, NY. She and her husband founded *Keramic Studio* (1899-1920s), an influential monthly ceramics magazine. Robineau also created one-of-a-kind pieces from start to finish. Many women decorated pottery at that time, but few produced ceramic ware because it was so physically demanding. The three-piece *Scarab Vase (The Apotheosis of the Toiler)* (Figure 12.34) took her over a thousand hours to carve. The Egyptian symbol for rebirth and creative powers inspired the excised scarab design.



Figure 12.34 Adelaide Alsop Robineau (American, 1865-1929), *Scarab Vase (The Apotheosis of the Toiler),* carved and pierced glazed porcelain, 16 5/8 x 6 in / 42.23 x 15.24 cm, 1910 (Everson Museum of Art). https://everson.org/object-of-the-week/object-of-the-week-adelaide-alsop-robineaus-scarab-vase/

POST-WORLD WAR I, 1919-1950

Viktor Schreckengost (1906-2008) studied ceramics in Vienna after graduating from The Cleveland Institute of Art in 1929. He went on to become a very influential industrial and ceramics designer, professor, sculptor, and artist.

Schreckengost designed for Cowan Pottery (1912-1931) and produced ceramic architectural figures and relief sculptures in the northern Ohio area. He made *Apocalypse '42* (Figure 12.35) a few months after the bombing of Pearl Harbor to express his concern about the rise of fascism by showing Hitler, Mussolini, Hirohito, and the figure of Death riding a frightened horse across the globe. Schreckengost believed he could say more with this work than he could with words.



Figure 12.35 Viktor Schreckengost (American, 1906-2008), *Apocalypse '42*, glazed earthenware with **engobe**, 15 3/8 x 20 3/8 x 8 1/8 in / 39.1 x 51.8 x 20.6 cm, 1942 (Smithsonian American Art Museum).
https://americanart.si.edu/artwork/apocalypse-42-21944

Gertrud (1908-1971) and Otto Natzler (1908-2009) were among the many European artists immigrating to America during the 1920s and 1930s. The couple began working together in 1933. Gertrud threw the thin vessels and Otto glazed and **fired** them (Figures 12.36 and 12.37).



Figure 12.36 Otto Natzler (Austrian-American, 1908-2007), Gertrud Natzler (Austrian-American, 1908-1971), *Oval Bowl*, altered wheel-thrown earthenware with chartreuse glaze, 4 3/4 x 10 1/2 x 6 ¾ in / 12.1 x 26.7 x 17.1 cm, 1942 (Smithsonian American Art Museum, Gift of Mary Peterson Hartzler and James Hartzler). https://americanart.si.edu/artwork/oval-bowl-32464



Figure 12.37 Otto Natzler (Austrian-American, 1908-2007), Gertrud Natzler (Austrian-American, 1908-1971), *Pilgrim Bottle*, earthenware with volcanic glaze, 17 x 13 x 5 in / 43.18 x 33.02 x 12.7 cm, 1956 (photograph © Gertrud and Otto Natzler, Los Angeles County Museum of Art, Gift of Howard and Gwen Laurie Smits). https://collections.lacma.org/node/254659

Bernard Leach (1897-1979) helped found the British studio pottery movement that encouraged small-scale craft production. Leach grew up in China, Japan, and England. After studying with Japanese potters (1910-1920), he set up Leach Pottery in Cornwall, England. Shoji Hamada (Japanese, 1892-1978; Figure 6.19) helped Leach build a Japanese wood-firing climbing **reduction kiln** in Cornwall, then they visited ceramic studios in America before Hamada returned to Japan. Their visit dramatically changed the American focus from earthenware to high-fired **stoneware** and porcelain. Many Leach Pottery apprentices became very successful potters and teachers, including some of his own family members.

The *Bowl* in Figure 12.38 was included in Leach's influential *A Potter's Book*, first published in 1940. He sliced clay off the sides to form facets, then accidentally salt-glazed the vessel when salt-impregnated wood was used to fire the kiln.

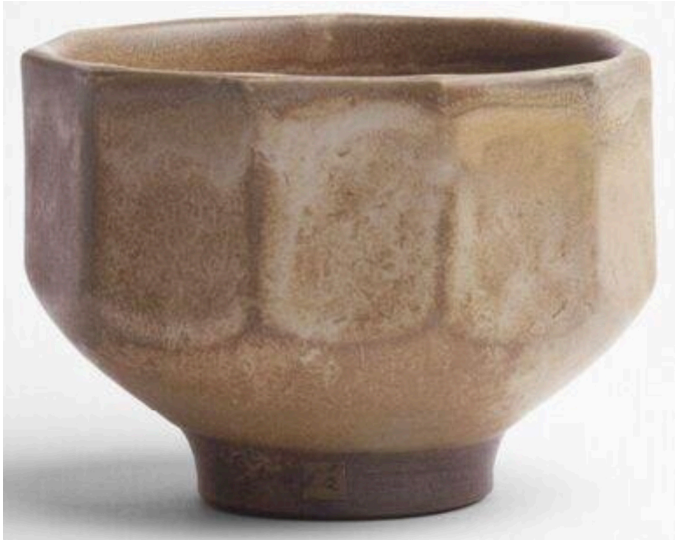

Figure 12.38 Bernard Leach (English, 1897-1979), *Bowl*, **salt glaze** stoneware, 5 3/8 x 3 7/8 in / 13.8 x 9.8 cm, Cornwall, England, ca.1925 (© Victoria and Albert Museum. presented by Lt. Col. K. Dingwall, DSO with Art Fund support). https://collections.vam.ac.uk/item/O19432/bowl-leach-bernard/

Louis-François Cartier (French, 1819-1904) founded a jewelry company in 1847, but it was his grandsons, Louis (French, 1875-1942), Pierre (French, 1878-1965) and Jacques (French, 1884 - 1942), who established the brand around the world. Cartier was one of the first to

embrace Art Deco, a linear style with symmetrical, geometric forms. After South African diamond mines flooded the market, Cartier jewelers set them in white gold and platinum.

In 1916 Pierre Cartier traded a double stranded million-dollar pearl necklace for the mansion on Fifth Avenue that still houses the New York City branch of Cartier today. Natural pearls were more valuable than diamonds because they were only produced when an oyster covered an irritant with layers of nacre. In the 1890s Kokichi Mikimoto (Japanese, 1858-1954) implanted small shell beads into oysters suspended in cages, then waited three years for the mollusks to encapsulate the irritants in nacre. Pearl prices plummeted in the 1930s when his cultured pearls flooded the market.

The *Dunn Pearl Necklace* (Figure 12.39) is typical of Art Deco jewelry of the 1920s with its profusion of brilliant-cut diamonds set in platinum. Five rows of graduated natural pearls are attached to the Art Deco-style diamond studded clasp and diamond encrusted chains.



Figure 12.39 Cartier, *Dunn Pearl Necklace*, 339 cream colored natural pearls, 428 diamonds, platinum clasp, 16 in / 40.64 cm long, 1920s (Smithsonian National Museum of Natural History, Gift of Mrs. Arthur W. Dunn in 1977, CC0). https://naturalhistory.si.edu/explore/collections/geogallery/10002704

While most jewelry was delicately made with precious metals and gemstones, the influential American sculptor, Alexander Calder (1898-1976), produced over a thousand bold necklaces (Figure 12.40), earrings,

bracelets, **brooches**, cufflinks, and belt-buckles. Some of his hammered wire jewelry was kinetic, like his innovative wire sculptures and mobiles.



Figure 12.40 Alexander Calder (American, 1898-1976), Anjelica Houston wearing *The Jealous Husband*, hammered brass wire, 14 1/2 x 17 x 12 3/4 in / 36.8 x 43.2 x 32.4 cm, ca. 1940 (© 2016 Calder Foundation, New York, photograph by Evelyn Hofer, 1976, © Estate of Evelyn Hofer). https://calder.org/historical-photos/anjelica-huston-wearing-the-jealous-husband-1976/

Samuel Yellin (1884–1940) apprenticed with a master ironsmith in the Ukraine for five years and then followed his family to Philadelphia. He briefly studied at the Philadelphia College of the Arts, then was hired to teach there. After teaching for thirteen years, Yellin opened a metalsmith shop that at its peak employed hundreds of workers, many of them European, who produced a variety of **forged-**iron products for wealthy clients, including candlesticks, andirons, gates, window grilles and stair railings.

The decorative *Ceiling Grille* (Figure 12.41) in the Annex of the Pierpont Morgan Library exhibits Yellin's mastery. The innovative openwork

square with curling, heart-shaped cartouches and birds references earlier styles. Yellin prepared full scale drawings then produced a prototype because he believed that “much can be done with the hammer that cannot be shown on paper.” (Andrews 1992:13). A prototype of the Ceiling Grill is in the Metropolitan Museum at https://www.metmuseum.org/art/collection/search/14929.



Figure 12.41 Samuel Yellin (Russian-American, 1884–1940), detail of the *Ceiling Grill* in the Pierpont Morgan Library Annex, wrought iron, ca. 1928 (photograph by Daderot, Public Domain, Wikimedia Commons). https://commons.wikimedia.org/wiki/File:Decorative_grille_with_648_birds,_by_Samuel_Yellin_%281884-1940%29,_1927-1928,_wrought_iron_-_Morgan_Library_%26_Museum_-_New_York_City_-_DSC06793.jpg

Mariano Fortuny (Spanish, 1871-1949) was the artist and designer who established Fortuny Textiles in Venice, which still produces some of his designs. The pleated **silk** evening gown in Figure 12.42 was inspired by the **chiton** worn by the Greek **bronze** charioteer sculpture discovered in Delphi in 1896. Beads made on the neighboring island of Murano decorate the side seams and sleeves and contribute to the drape of the fabric. Fortuny’s loosely fitting gowns and jackets revolutionized fashion at a time when women wore voluminous skirts and corsets under tightly fitting bodices.

The pleats were heat set with hot ceramic rollers, but the exact process is a trade secret. The patent lists his French wife, Henriette Nigrin,

as the designer and inventor. Moisture relaxes the pleats, so dresses are returned to Fortuny for cleaning.



Figure 12.42 Henriette Nigrin (French, 1877-1965) and Mariano Fortuny (Spanish, 1871-1949), *Delphos Dress*, pleated silk with Murano glass beads, center back is 58 in / 1936 (National Museum of American History, CC0). https://americanhistory.si.edu/collections/object/nmah_368825

The German Bauhaus school (1919-1933) opened with a crafts orientation, but the focus turned towards industrial design in 1923. Students learned how to make the products they designed and were encouraged to use new materials. Walter Gropius (founded and then directed the school until 1928) believed that the essence of functional items should be explored and that the chair, container, etc. had to be durable, inexpensive, and beautiful. When the Nazis closed the Bauhaus in 1933, many of its teachers moved to the United States, including Joseph and Anni Albers, Marcel Breuer, and Mies van der Rohe.

Best known as an oil painter, Joseph Albers (1888-1976) also created "wall glass paintings." To make the panel in Figure 12.43, he **fused** a very thin sheet of blue glass to translucent milky glass in a kiln, then masked off sections of blue and **sandblasted** the unprotected areas to create blue and white geometric patterns. The opaque black is paint. The intense colors and precision especially appealed to Albers.

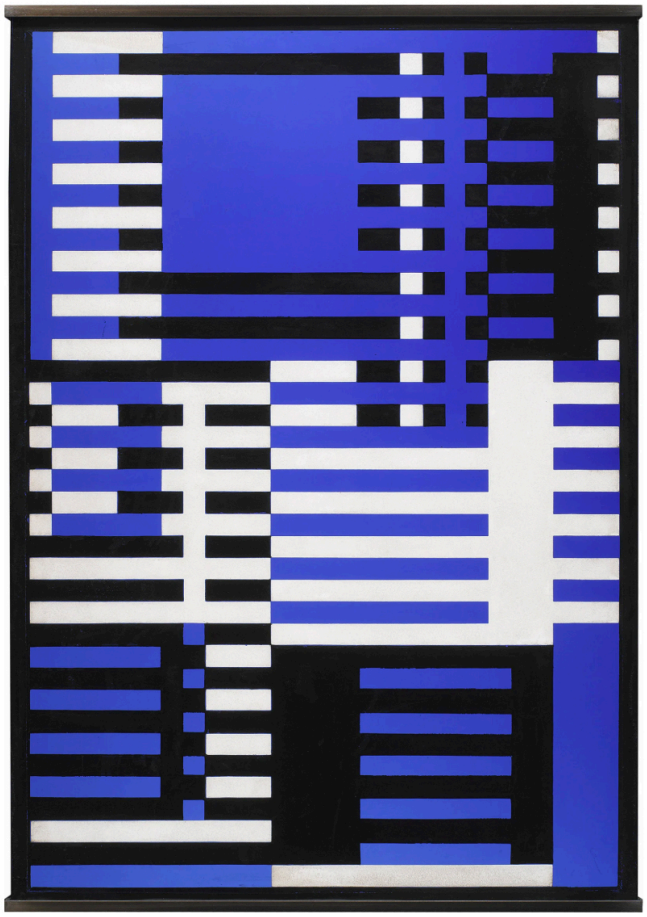

Figure 12.43 Josef Albers (German-American, 1888-1976), *Aufwärts (Upward)*, sandblasted flashed glass with black paint, 17 x $11\frac{3}{4}$ in / 43.2 x 29.8 cm, ca. 1926 (The Josef and Anni Albers Foundation). https://www.albersfoundation.org/art/highlights/aufw%C3%A4rts-upward

Fabrics, prints, and publications by Anni Albers (1899-1994) were inspired by historic and contemporary arts from around the world. She and her husband also responded to each other's work. *Wall Hanging* in Figure 12.44 is composed of three (white, black, and beige) superimposed cloths. She intersected the layers while weaving the piece on a floor loom

to create the geometric patterns of pure and mixed-colored rectangles and stripes.



Figure 12.44 Anni Albers (German-American, 1899-1994), *Wall Hanging,* two **ply** silk in triple weave, 70 3/8 x 46 3/8 in / 178.8 x 117.8 cm, 1926 (Harvard Art Museums, photograph © President and Fellows of Harvard University). https://hvrd.art/o/304413

Mies van der Rohe (1886-1969) and Marcel Breuer (1902-1981) were the most influential architects and furniture designers associated with the Bauhaus. Van der Rohe directed the Bauhaus until the Nazi regime pressured the school to close in 1933. He rejected heavily upholstered

furniture with his “less is more” nickel-plated tubular **steel** cantilevered chair (Figure 12.45) that is still in production today.



Figure 12.45 Mies van der Rohe (German-American, 1886-1969), *MR Chair*, 32 ¼ x 33 x 22 in / 81.9 x 83.3 x 55.9 cm, nickel-plated tubular steel and cane, 1927 (Museum of Modern Art, Rob Beyer Purchase Fund, © Artists Rights Society, New York / VG Bild-Kunst, Bonn). https://www.moma.org/audio/playlist/296/3847

Plywood and laminated wood offered an alternative to frame-and-panel construction. Marcel Breuer’s innovative *Stacking Tables* (Figure 12.46) were made by alternating the grain direction of each sheet of veneer as they were glued together, placed in a mold, clamped, dried, trimmed, and finished. Moisture makes wood swell across the grain, but plywood’s crosswise arrangement makes it very stable.



Figure 12.46 Marcel Breuer (Hungarian-American, 1902-1981) for the Isokon Furniture Company, *Stacking Tables*, laminated plywood with birch veneer, largest is 24 x 17 1/2 x 14 ½ in / 61 x 44.5 x 36.8 cm, London, 1936 (Museum of Modern Art). https://www.moma.org/collection/works/4464?classifications=any&date_begin=Pre-1850&date_end=2025&include_uncataloged_works=false&on_view=false&q=837.1942.1-3&recent_acquisitions=false&with_images=true

Alvar Aalto (1898-1976), a Finnish architect and designer, reinterpreted van der Rohe's design with laminated wood (Figure 12.47). Aalto's furniture was light, practical, comfortable, and inexpensive.



Figure 12.47 Alvar Aalto (Finnish, 1898-1976) for Oy Huonekalu-ja Rakennustyötehdas Ab, *Armchair Model 406*, **bentwood laminated** birch, solid birch cross rails, and linen webbing, 33 ½ x 24 x 26 in / 85.09 x 60.96 x 66.04 cm, 1938-1939 (San Francisco Museum of Modern Art, Gift of Michael and Gabrielle Boyd). https://www.sfmoma.org/artwork/98.567/

Chapter 13: 1950 to the Present

Before refrigeration, stoneware and earthenware crocks, bowls, jugs, and bottles were used to store food and drink, including syrup, pickles, vegetables, and moonshine. The potteries were usually family run establishments, handed down from father to son.

Meaders Pottery, established in 1893 by John Milton Meaders, produced jugs, churns, crocks, and face jugs with clay dug from local creek beds, foot-powered **potter's wheels**, ash glazes, and wood-fired kilns. His sons and their children carried on the family business. Grandson Lanier Meaders (1917-1998) made utilitarian ware but is best known for his face jugs (Figure 13.1).



Figure 13.1 Quillan “Lanier” Meaders (American, 1917-1998), *Face Jug*, glazed stoneware and **porcelain**, 9 1/2 x 7 1/2 x 7 1/2 in / 24.1 x 19.1 x 19.1 cm, Mossy Creek, Cleveland, Georgia, n.d. (Smithsonian American Art Museum, Gift of Orren and Marilyn Bradley and Kohler Foundation, Inc.). https://americanart.si.edu/artwork/untitled-face-jug-110472

Quillan “Lanier” Meaders (1917-1998) was unloading his kiln the day we visited. Native American (Figure 7.36) and African American potters were the first to make face jugs in the Southern Unites States. White potters began producing them around 1900.

Meaders told us that he throws locally dug stoneware clay on a kickwheel, forms the faces, adds white porcelain teeth and eyes, then paints the pupils. After the jugs dry, he dips the bottoms in hot wax (to repel glaze so they will not stick to the kiln shelf during firing) and glazes the tops with a mixture of locally dug clay, sifted kiln ashes, and recycled ground glass. Wood ashes settle on the jugs during firing, enhancing the green-brown glaze.



Figure 13.2a A trio of finished face jugs guard the electric frying pan of **wax resist** on the kickwheel in Lanier Meaders' studio in Mossy Creek, Cleveland, Georgia (photograph by Carol Ventura, 1986).



Figure 13.2b **Greenware** face jugs waiting to be glazed in Meaders' studio in Mossy Creek, Cleveland, Georgia (photograph by Carol Ventura, 1986).



Figure 13.2c Front of Lanier Meaders' wood fired kiln, Mossy Creek, Cleveland, Georgia (photograph by Carol Ventura, 1986).



Figure 13.2d Interior of Lanier Meaders' wood fired kiln, Mossy Creek, Cleveland, Georgia (photograph by Carol Ventura, 1986).



Figure 13.2e Lanier Meaders (1917-1998) leans against his truck next to an electric grinding wheel he uses to remove bits of fired glaze and clay while talking to University of Georgia Professor Art Rosenbaum (American, 1938-

2022) in Mossy Creek, Cleveland, Georgia (photograph by Carol Ventura, 1986).



Figure 13.2f Each jug is unique, with its own personality (photograph by Carol Ventura, 1986).

Hans Coper (1920-1981) moved to Britain in 1939 and became a **potter** after the war. His altered vessels and unusual glazes revolutionized studio pottery. Coper's spade shaped *Vase* in Figure 13.3 walks the line between craft and art.



Figure 13.3 Hans Coper (German-English, 1920-1981), *Vase,* wheel-thrown, altered, and assembled stoneware with white over black glaze, 12 7/8 x 7 3/8 x 2 7/8 in / 32.6 x 18.7 x 7.4 cm, 1968 (Victoria and Albert Museum). https://collections.vam.ac.uk/item/O19251/vase-coper-hans/

Peter Voulkos (1924-2002) was an incredibly influential American ceramic artist and professor. Many of his students became successful ceramic artists and teachers themselves. Voulkos began his career as an award-winning traditional potter. After meeting Bernard Leach (Figure 12.37), Shoji Hamada (Figure 6.19), and Sōetsu Yanagi in 1952, Voulkos' glazed stoneware began to show the influence of Japanese folk pottery. His rustic *Lidded Jar* in Figure 13.4 is a good example, with its finger ridges (formed while **throwing**), earthy colors, and loose spiral brushwork.



Figure 13.4 Peter Voulkos (American, 1924-2002), *Lidded Jar*, glazed stoneware, 17 $^{1}/_{4}$ x 11 in / 43.8 x 28 cm, ca. 1955 (Smithsonian American Art Museum). https://americanart.si.edu/artwork/lidded-jar-35291

Voulkos crossed the line from craft to art when he abandoned functional ware and directed his energy towards improvisational sculpting. He made this move after befriending several avant-garde and Abstract Expressionist artists, including Robert Rauschenberg, Franz Kline, Willem De Kooning, and Philip Guston. Voulkos combined thick clay slabs with wheel-thrown elements, then pinched, slashed, tore, pounded, and decorated them with **slip**, glaze, and / or brightly colored paint (Figure 13.5).



Figure 13.5 Peter Voulkos (American, 1924-2002), L to R: *Little Big Horn*, stoneware with slip and glaze, 62 x 40 x 40 in / 157.48 x 101.6 x 101.6 cm, 1959 (The Oakland Museum of Art); *Tientos*, glazed stoneware, 55 x 19 x 30 in / 139.7 x 48.26 x 76.2 cm, 1959 (San Francisco Museum of Modern Art); *Sitting Bull*, glazed stoneware, 69 x 37 x 37 in / 175.26 x 93.98 x 93.98 cm, 1959 (Santa Barbara Museum of American Art); On wall: *Falling Red*, 1958 (photograph by Butcher Walsh, Museum of Arts and Design). https://www.youngbuk.com/emvoulkosembrmuseum-of-arts-design-1/

Paul Soldner (1921-2011) was Voulkos' first student. He became a very charismatic professor and pioneering artist who developed new production methods, and he designed a line of ceramic tools and equipment. *Pedestal Piece* in Figure 13.6 was fired with one of his inventive techniques, low-temperature salt firing. https://www.paulsoldner.com/

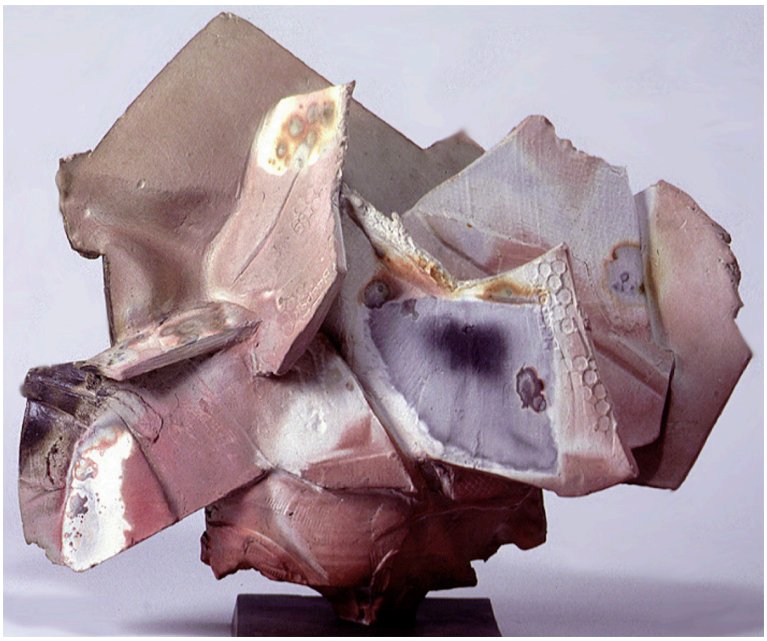

Figure 13.6 Paul Soldner (American, 1921-2011), *Pedestal Piece (907)*, textured **raku** clay, unglazed **terra sigillata**, **low fire** salt-vapor fired, 27 x 30 x 11 in / 68.58 x 76.2 x 27.94 cm, 1990 (© Scripps College, Gift of Mr. and Mrs. Fred Marer). https://web-kiosk.scrippscollege.edu/objects-1/info/16665

Voulkos and Rudy Autio (1926-2007) helped establish the Archie Bray Ceramics Foundation in a former brick factory in Autio's native Montana in the early 1950s. Rudy's sculptures are colorful and expressionistic (Figure 13.7). For Autio, there were always new possibilities in ceramics. He **handbuilt** most of his work with a variation of **slab** and **coil building**. Autio painted colorful **engobes** onto the wet clay, waited until the piece was **leather-hard**, then drew the linear elements with the **sgraffito** technique. https://www.rudyautio.com/



Figure 13.7 Rudy Autio (American, 1926-2007), *Listening to the East Wind*, hand-built, incised, and glazed stoneware, 39 ½ x 29 x 21 in / 100.4 x 73.6 x 53.3 cm, 1986 (Smithsonian American Art Museum, Gift of the James Renwick Alliance and museum purchase through the Director's Discretionary Fund, © Rudy Autio).
https://americanart.si.edu/artwork/listening-east-wind-682

Marilyn Levine (1935-2005) studied under and later shared a studio with Peter Voulkos. She taught ceramics and was especially known for making clay look like leather. To make *Johan's Jacket* in Figure 13.8, she rolled clay into flat slabs between pieces of leather to pick up the texture, cut out and joined the pieces together, and then fired it. http://www.marilynlevine.com/index.html



Figure 13.8 Marilyn Levine (Canadian-American; 1935-2005) *Johan's Jacket*, hand-built stoneware with metal additions, 35 x 19 x 7 in / 88.9 x 48.3 x 17.8 cm, 1990 (Flint Institute of Arts, Gift of the C.S. Harding Foundation). https://collections.flintarts.org/objects/2641/johanns-jacket?ctx=8bf35c4063e76f8f1f80835eb2a17abc15218dba&idx=0

Michael Frimkess (1937-) was another Voulkos alumnus. A visit to the Metropolitan Museum of Art introduced him to the Greek metalwork (Figure 3.12) and pottery (Figure 3.15) that inspired *Ecology Krater II* in Figure 13.9. Two bicycles built for four with four riders each decorate the sides, and endangered animals encircle the shoulder. As usual, Frimkess is poking fun at people he grew up with in East Los Angeles.



Figure 13.9 Michael Frimkess (American, 1937-), *Ecology Krater II (Out Biking with Aunt Samantha)*, glazed wheel-thrown stoneware with over-glaze, 26 $^{1}/_{4}$ x 26 x 19 $^{1}/_{2}$ in / 66.8 x 65.9 x 49.5 cm, 1976 (Smithsonian American Art Museum). https://americanart.si.edu/artwork/ecology-krater-ii-out-biking-aunt-samantha-36013

Voulkos's expressionist sculptures inspired Robert Arneson (1930-1992) to abandon traditional pottery, founding the California Funk Art Movement in the process. Arneson is especially known for his self-portraits. He often said that he chose himself as subject because he was there and was the easiest person to abuse without offending anyone.

California Artist in Figure 13.10 was a mocking response to Hilton Kramer, a New York Times art critic who said that west coast ceramic

sculpture represented the impoverished sensibility of the provincial cultural life of California. Arneson poked fun at the stereotype by showing himself as an aging hippy. The hollow eyes are windows into his empty head. Beer bottles and cigarette butts litter the base while marijuana grows up the left side. Arneson signed it by mechanically imprinting his name on the bricks visible on the lower right.



Figure 13.10 Robert Arnason (American, 1930-1992), *California Artist*, glazed stoneware, 68 ¼ x 27 ½ x 20 ¼ in / 173.36 x 69.85 x 51.44 cm, glazed stoneware, 1982 (San Francisco Museum of Modern Art, © Estate of Robert

Arneson / Licensed by VAGA at ARS).
https://www.sfmoma.org/artwork/83.108.A-B/

Richard Notkin (1948-) was Arneson's student and teaching assistant. Notkin's Yixing influenced teapots (Figure 5.19) are especially known for their social commentary. Notkin's sculptural teapots explore the environmental, political, and economic impacts of humans on the planet.

Notkin's *Light Bulb Teapot* (Figure 13.11) is one of twelve that he slip-cast (Figure 5.13) between 1983 and 1992. It suggests that generating electricity in nuclear power plants is like rolling the dice. The skull emphasizes the risk to our lives and the environment.



Figure 13.11 Richard Notkin (American; 1948-), *Light Bulb Teapot (Variation #6) Yixing Series*, stoneware, 4 7/8 x 6 3/8 x 3 5/8 in / 12.3 x 16.1 x 9.2 cm, 1984 (Smithsonian Museum of American Art, Gift of Margot R. Heckman in memory of Mary Sherman Resh)
https://americanart.si.edu/artwork/light-bulb-teapot-variation-6-yixing-series-56668 and https://www.youtube.com/watch?v=DGtoPAAFcyQ

Viola Frey (1933-2004) was a professor, painter, and sculptor known for colorful larger than life clay figures (Figure 13.12). She studied ceramics alongside Robert Arneson at the California College of the Arts. Her giant figures were inspired by small ceramic figurines she collected, but the bright, painterly colors are all about painting. Frey hand-built the pieces, let

them dry, cut them apart with a sabre saw, fired, glazed, refired, then stacked and bolted them together. https://violafrey.org/



Figure 13.12 Viola Frey (American, 1933-2004), *Family Portrait*, glazed ceramic, 84 x 82 5/8 x 34 5/8 in / 213.4 x 209.9 x 88 cm, 1995 (Hirschhorn Museum and Sculpture Garden, Smithsonian Institution, Washington, DC, Gift of Rena Bransten, 1996, © Viola Frey).
https://www.si.edu/object/family-portrait:hmsg_96.39

Patti Warashina's (1940-) studies under Rudy Autio (Figure 13.7) and Shoji Hamada (Figure 6.19) prepared her to become a successful professor and artist. Inspired by Funk Art and Surrealism, her ceramic work explores feminism and politics.

Car kilns have shelves on wheels to enable efficient loading and unloading of ceramic ware. In a play on words, *Convertible Car Kiln* in Figure 13.13 challenged the idea that cars and kilns were only part of a "man's world". When she was in school, women were just supposed to get married, stay at home, and have babies. https://pattiwarashina.com/home.html



Figure 13.13 Patti Warashina (American, 1940-), *Convertible Car Kiln*, glazed earthenware and Plexiglass, 14 ½ x 35 ½ x 14 ½ in / 36.9 x 90.2 x 36.9 cm, ca. 1971 (Smithsonian American Art Museum, Gift of the James Renwick Alliance, © Patti Warashina).
https://americanart.si.edu/artwork/convertible-car-kiln-33915

Since the early 1970s Wayne Higby (American, 1943-) has been transforming functional containers into sculptures by focusing on landscape imagery as a focal point of meditation to establish silent, empty spaces. When perfectly aligned, the five lidded boxes of *Temple's Gate Pass* in Figure 13.14 form an imagined Colorado landscape of snow-topped mesas with turquoise lakes and rivers. The scene is based on Higby's panoramic drawings.

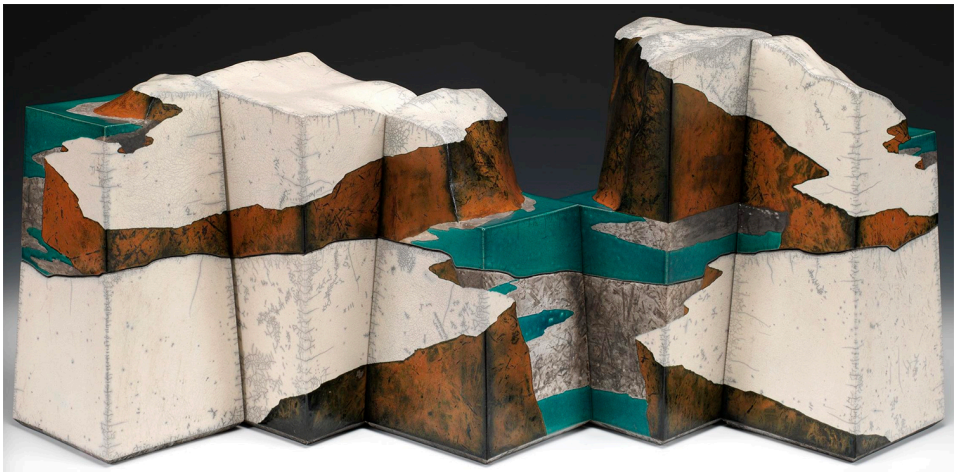

Figure 13.14 Wayne Higby (American, 1943-), *Temple's Gate Pass,* raku glazed earthenware, overall: 14 x 33 x 8 in / 35.6 x 83.8 x 20.3 cm, 1988 (Smithsonian American Art Museum, Gift of KPMG Peat Marwick, © Wayne Higby). https://americanart.si.edu/artwork/temples-gate-pass-33783

Harvey Littleton (1922-2013) grew up around glass because his father directed research at Corning Glass Works. Most glass was made in factories until 1962 when Littleton developed equipment and a glass formula that melted at lower temperatures, birthing the American studio glass movement. His first pieces were functional, but he later turned to sculpture. *Blue Crown* (Figure 13.15) is his signature style. Harvey taught studio glass at the University of Wisconsin, the first glass program in the United States.



Figure 13.15 Harvey Littleton (American, 1922-2013), *Blue Crown*, hot worked barium/potash glass with multiple **cased** overlays of Kugler colors, 20 in /50.8 cm tall, 1988 (Indianapolis Museum of Art, Gift of Marilyn and Eugene Glick, © Harvey K. Littleton). https://collections.discovernewfields.org/art/artwork/83841

Dale Chihuly (1941-) was one of Harvey Littleton's first glass students in 1966. In 1968 Chihuly traveled to Murano to work at Venini (1921-), a leading glass factory known for contemporary design. While there, he and Lino Tagliapietra (Figure 13.18) shared glass working techniques with each other.

Chihuly co-founded the renown Pilchuck Glass School in Seattle, Washington, in 1971 and has devoted his life to developing and

encouraging the studio glass movement. Chihuly stopped blowing glass after a car accident blinded his left eye in 1976 and a bodysurfing accident dislocated his shoulder in 1979. Since that time, a team of talented assistants produce his designs, often composed of multiples, like *Macchia Seaform Group* (Figure 13.16) and *Sun* (Figure 13.17).

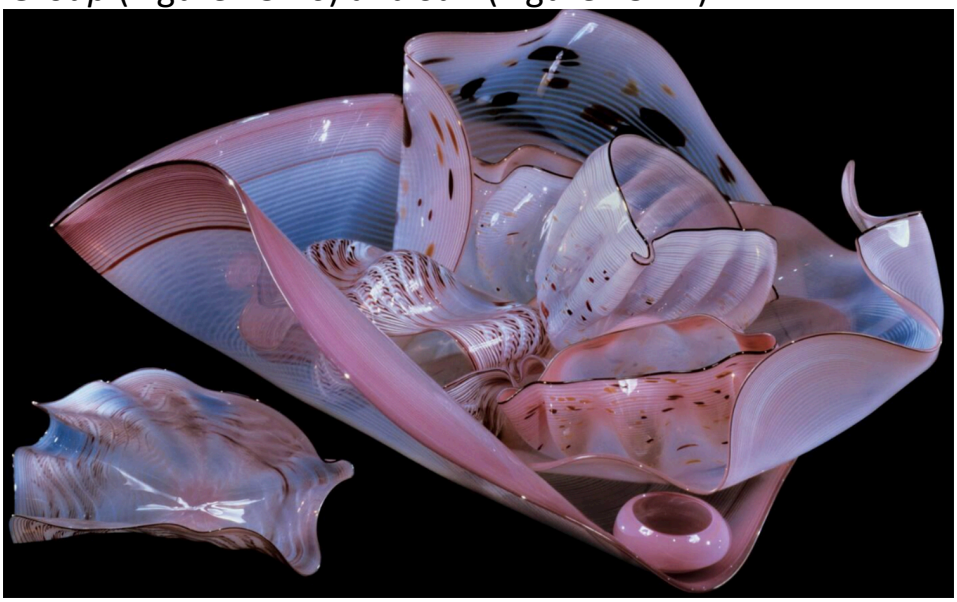

Figure 13.16 Dale Chihuly (American, 1941-), assisted by Benjamin Moore (American, 1952-2021) and William Morris (American, 1957-), *Macchia Seaform Group*, optic-blown and hot-worked colorless, pink, and opaque white glass, 25 ¼ in / 64.2 cm, 1982 (Corning Museum of Glass, Gift of Michael J. Bove III, © Dale Chihuly). https://glasscollection.cmog.org/objects/24769/macchia-seaform-group?ctx=bac43d6280aeae120af33fe34bd5a96371b401bc&idx=0#

The glass components of *Sun* (Figure 13.17) are shaped by blowing molten glass into ribbed molds and then stretching and shaping the bubbles. After cooling, the bottom of each element is filled with polyurethane adhesive and slid onto a welded steel armature. https://www.chihuly.com/



Figure 13.17 Dale Chihuly (American, 1941-), *Sun,* blown glass assembled on metal armature, 15 ft / 4.57 m tall, 2010 (photograph by Carol Ventura at Cheekwood, TN, 2010).

Lino Tagliapietra (Italian, 1934-) is from the historic Venetian glassblowing city of Murano in Italy. He has played a key role in the international exchange of glassblowing processes and techniques since 1979, when he made his first trip to Pilchuck Glass School in Washington State.

Tagliapietra created *Dinosaur* (Figure 13.18) in 2006 in the new Hot Shop of the Glass Pavilion of the Toledo Museum of Art. He combined clear with multicolored **glass canes** then blew and shaped it. After cooling, he ground and polished certain parts to accentuate the patterns. This piece combines the strength of the dinosaur with the fluidity of the fish and aquatic creatures that live on the island of Murano. https://www.linotagliapietra.com/

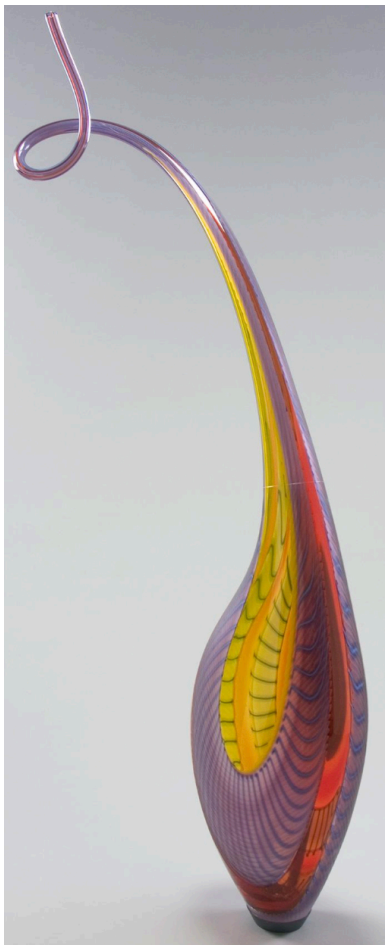

Figure 13.18 Lino Tagliapietra (Italian, 1934-), *Dinosaur*, blown, ground, and polished glass, 59 x 9 ¾ in / 149.9 x 24.8 cm, 2006 (Toledo Museum of Art, Gift of the artist).
http://emuseum.toledomuseum.org/objects/60632/dinosaur?ctx=9981c975-7de5-4c60-b240-eddc9a4119fa&idx=0

Richard Marquis (American, 1945-) is a West Coast artist known for his Funk Art inspired use of Venetian glass cane (Figure 11.8) and **murrini** (Figure 3.36) techniques. Like Chihuly, he learned from the Venini masters in Murano. Marquis chose to work with the teapot form (Figure 13.19) because it had no glass tradition. As if teapots were not challenging enough, he inserted them into goblets.



Figure 13.19 Richard Marquis (American, 1945-), *Teapot Goblets*, blown glass with canes, largest is 11 x 3 $^{5}/_{8}$ in / 28 x 9.3 cm, 1991-1994 (Smithsonian American Art Museum, Gift of the James Renwick Alliance). https://americanart.si.edu/artwork/teapot-goblet-324-34527

After studying glass under Chihuly's at Pilchuck Glass School in 1978, William Morris (American, 1957-) became one of Chihuly's assistants. Morris is inspired by prehistory and the natural world. He said, "Although my work is shaped by the influences of contemporary life and technology, it contemplates fragments from the past; reinventing the narrative of the hunt, stories and rituals which continue to live on in the artifacts which remain."

While some of his pieces focus on the translucency of glass, Morris' artifact series mimics bones, leather, and antlers. *Suspended Artifact: Urn with Lashed Tusks* (Figure 13.20) includes what appears to be tusks and a vessel holding two stick-shaped tools suspended from a large antler. All are made of glass. https://www.wmorris.com/



Figure 13.20 William Morris (American, 1957-), *Suspended Artifact: Urn with Lashed Tusks*, blown, acid-etched, painted, and assembled multicolored glass and steel, 27 x 27 x 5 in / 68.6 x 68.6 x 12.7 cm, 1995 (Corning Museum of Glass, © William Morris). https://glasscollection.cmog.org/objects/35058/sculpture?ctx=c75514e98a24cc6acd5d4394450f2bad360f6291&idx=0

Mary Ann Toots Zynsky (1951-) studied with Chihuly in the 1970s. Then, in the 1980s, she developed a new way to work glass, "filet de verre." She and Mathijs Teunissen Van Manen invented a glass thread pulling machine that produces colorful glass filaments that she arranges and layers on a flat surface. Zynsky fuses them together in a kiln, then manipulates the hot glass with tongs and/or **slumps** the piece in stainless steel bowls to produce three-dimensional forms (Figure 13.21). https://www.tootszynsky.com/



Figure 13.21 Mary Ann Toots Zynsky (American, 1951-), *Soleggiata Serena*, filet-de-verre glass, 11 x 24 ¾ x 9 in / 27.9 x 62.9 x 22.9 cm, 2000 (Museum of Fine Arts, Boston, Gift of the artist in honor of Evelyn and John Zynsky, ©Toots Zynsky). https://collections.mfa.org/objects/316242/soleggiata-serena?ctx=a19735b0-7b63-4e79-ae80-85ad077d9cd8&idx=0

Glass became a sculptural medium in the Czech Republic after World War II. The kiln **cast** work of Stanislav Libenský (1921-2002) and his wife, Jaroslava Brychtová (1924-2020), had a tremendous impact on the studio glass movement. Their large, abstract sculptures explore color, light, and transparency. Libenský drew the designs (Figure 13.22), and Brychtová sculpted them in clay. A mold was made from the clay model, placed in a kiln, filled with glass, slowly heated until the glass melted, cooled, removed from the mold, cleaned, ground, and polished.

Their *Red Pyramid* (Figure 13.23) transforms as light hits it from different angles. The dark, dense core contrasts with the lighter, thinner glass along the edges.

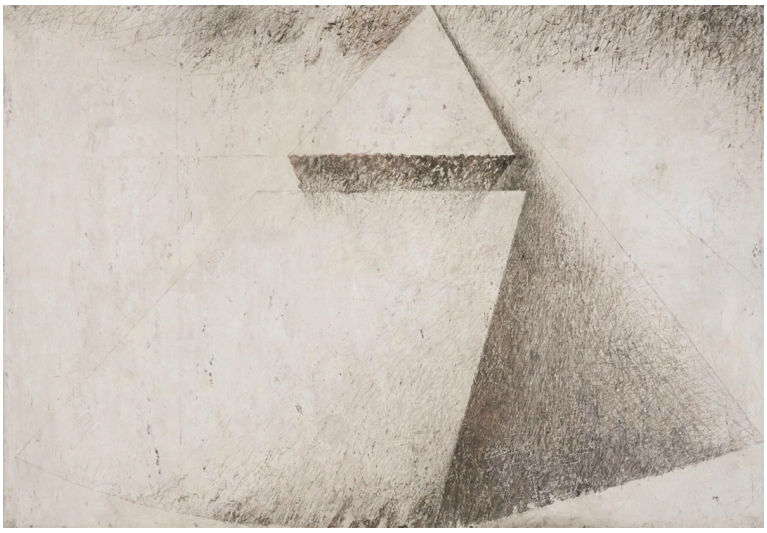

Figure 13.22 Stanislav Libenský (Czech, 1921-2002), Study for *Red Pyramid*, charcoal on **paper**, 41 x 59 in / 104.1 x 149.8 cm, Czech Republic, 1993 (Corning Museum of Glass). https://glasscollection.cmog.org/objects/63462/study?ctx=4cf67d8bcc620535f3c7f57d41ffaa80f4564a71&idx=0

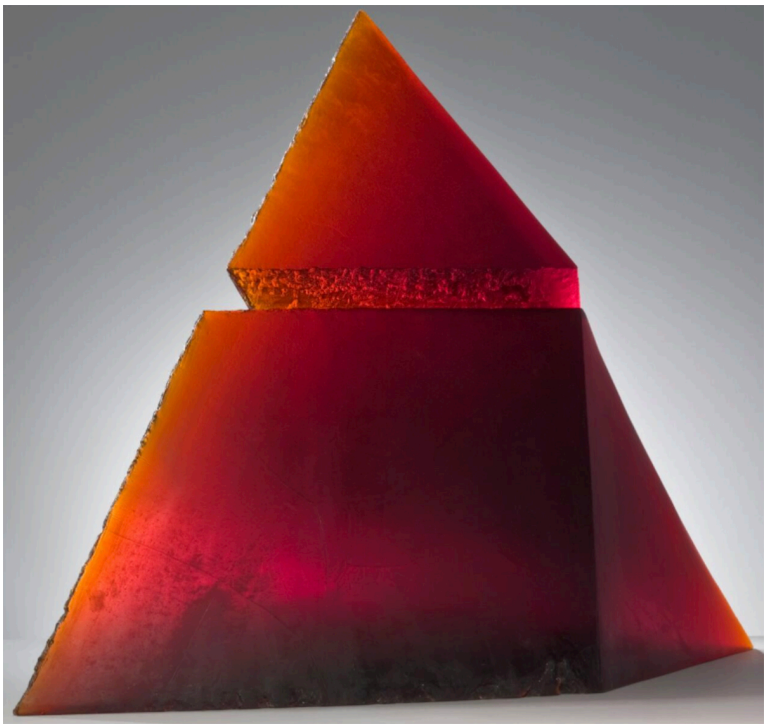

Figure 13.23 Stanislav Libenský (Czech, 1921-2002) and Jaroslava Brychtová (Czech, 1924-2020), *Red Pyramid*, mold melted, cut, ground, and polished red non-lead glass, 33 1/8 x 47 x 11 1/8 in / 83.4 x 119.3 x 28.2 cm, Czech Republic, 1993 (Corning Museum of Glass, © Stanislav Libenský and

Jaroslava Brychtová). https://glasscollection.cmog.org/objects/34503/red-pyramid?ctx=d841ce305609456c1cf2da9527cfd1f960c00a0c&idx=0

Bertil Vallien (1938-) designed glassware before becoming a full-time artist. He is best known for his cast glass boats, like *Cargo Seed* in Figure 12.24, filled with narrative imagery inspired by Viking burials that cradled the deceased and their possessions in a boat.

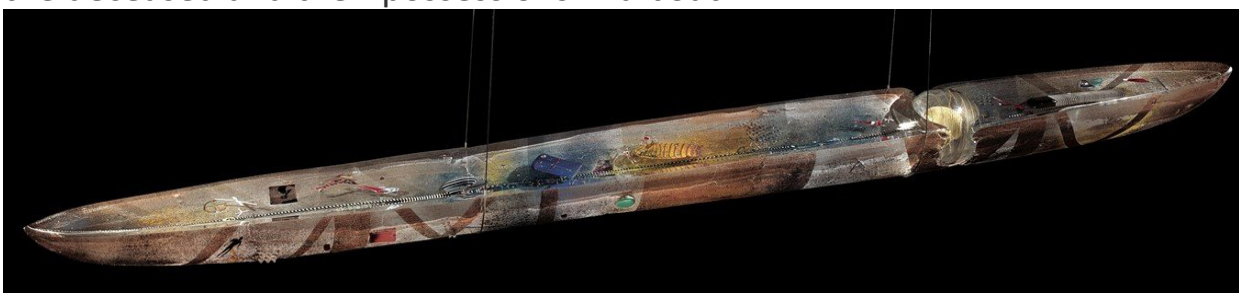

Figure 13.24 Bertil Vallien (Swedish, 1938), *Cargo Seed,* metal and sand cast lead glass, 12.5 x 195.7 x 13.7 cm, Sweden, 1988 (Corning Museum of Glass, © Bertil Vallien).
https://glasscollection.cmog.org/objects/37730/cargo-seed?ctx=76a9c500f526294119c9171866a3a6ccbc864d2c&idx=0

Bertil Vallien began to develop sand-cast glass techniques in the 1960s. He fills a metal container with casting sand, excavates a cavity, adds components, and sprinkles colorful glass powders into the depression (Figure 13.25a). Then, he fills the cavity with molten glass and embeds bits and pieces into the hot glass (Figures 13.25b). Vallien describes casting as "ladling matter out of a volcano and watching the glowing lava turn into ice." https://kostaboda.us/pages/bertil-vallien?srsltid=AfmBOopUozyaL_rLYvGCS7UOnirZP_LKFR78Clq0V24ZH8zZnQS0Qc63



Figure 13.25a Bertil Vallien (Swedish, 1938) casts a boat at the Tacoma Museum of Glass, ca. 2018 (photograph by Bullseye Glass).



Figure 13.25b Bertil Vallien (Swedish, 1938) embeds components in a molten glass boat at the Tacoma Museum of Glass, ca. 2018 (photograph by Bullseye Glass).

Paul Stankard is known for his paperweights that combine accurate depictions of plants with fanciful inclusions. Spirit people blend with roots under an Indian Pipe wildflower in *Paperweight* (Figure 13.26). Stankard explained, "By blending mysticism with magical realism, I work to express organic credibility through my botanical interpretations. Crafted in glass, I reference the continuum of nature and celebrate on an intimate level her primal beauty." https://www.paulstankard.com/



Figure 13.26 Paul Stankard (American, 1943-), *Paperweight*, **lampworked**, cut, polished and laminated non-lead glass, 7 ½ x 3 3/8 x 2 ¾ in / 19 x 8.4 x 7 cm, 1987 (Corning Museum of Glass, © Paul Stankard). https://glasscollection.cmog.org/objects/18256/paperweight?ctx=efff32d6c1ba9f4e41fcba6baff59cf6cad59722&idx=9

Paul Stankard (1943-) produced lampworked glassware for scientists before pursuing a career as a lampworking artist. He begins a piece by heating the tips of glass rods until they are soft enough to be sculpted and attached to a glass matrix (Figures 13.27a and 13.27b). After completing the central components, he places them in metal container and fills it with clear molten glass to case the miniature sculpture in clear glass. It is polished after cooling.



Figure 13.27a Paul Stankard (American, 1943-) **flameworks** glass in his studio, 2015 (photograph by CBS News).

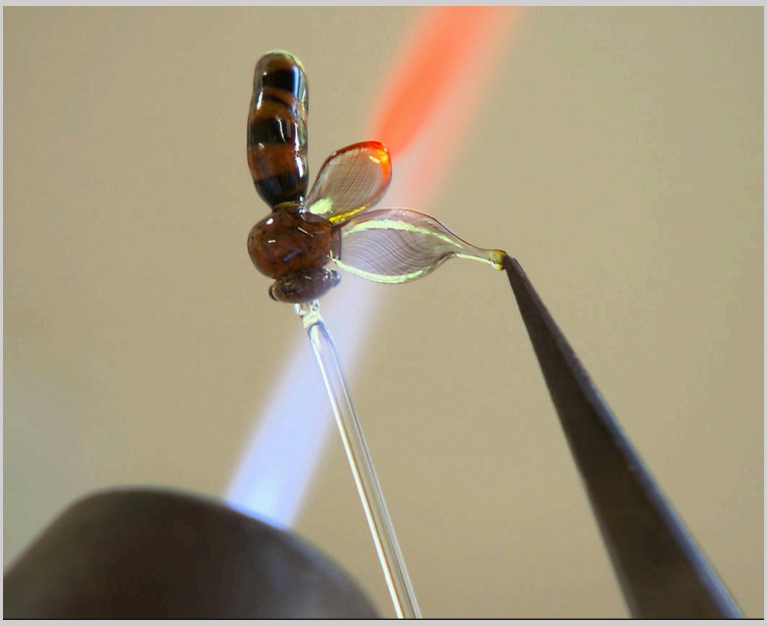

Figure 13.27b Paul Stankard (American, 1943-), detail of flameworking a glass insect in his studio, 2015 (photograph by CBS News).

Judith Schaechter (1961-) produces provocative backlit **stained glass** paintings and windows that usually feature disturbing subjects. Black and yellow are painted and fired in a kiln, but other images are engraved into the colored layer of **flashed glass**. Schaechter uses Tiffany's copper foil technique (Figure 12.21) to join the pieces together.

About the figures in *The Birth of Eve* (Figure 13.28) and her other work, Judith said, "They seem to be caught in a transitional moment with despair becomes hope or darkness becomes inspiration. They seem poised between the threshold of everyday reality and epiphany, caught between tragedy and comedy." https://www.judithschaechter.com/faqs-2/ The flowers below Eve are constructed of multiple layers of glass that have been cut, sandblasted, enameled, stacked, copper foiled, and soldered. https://www.judithschaechter.com/

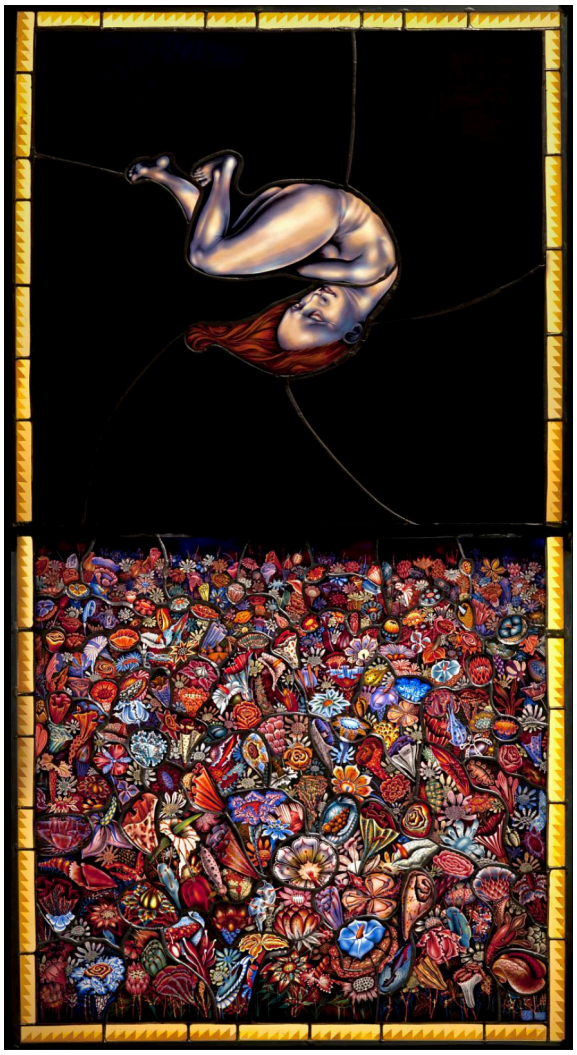

Figure 13.28a Judith Schaechter (American, 1961-), *The Birth of Eve*, cut, sandblasted, enameled, stained, and leaded copper-foiled flash glass, 57 x 31 x 2 in / 144.8 x 78.7 x 5.1 cm, 2013 (Smithsonian American Art Museum, © Judith Schaechter). https://americanart.si.edu/artwork/birth-eve-109592



Figure 13.28b Judith Schaechter (American, 1961-), detail of *The Birth of Eve*, cut, sandblasted, enameled, stained, and leaded copper-foiled flash glass, 2013 (Smithsonian American Art Museum, © Judith Schaechter). https://americanart.si.edu/artwork/birth-eve-109592

The free-form beadwork of Joyce J. Scott (1948-) focuses on topics that include sexuality, race, gender, and violence (Figure 13.29). Drawing on both her African American heritage and a fine arts background, Scott said her work is "… about personal growth, personal epiphanies and how not to get stuck in the easy ways of life - about art I am fairly fearless but in everyday life I am not." https://en.wikipedia.org/wiki/Joyce_J._Scott

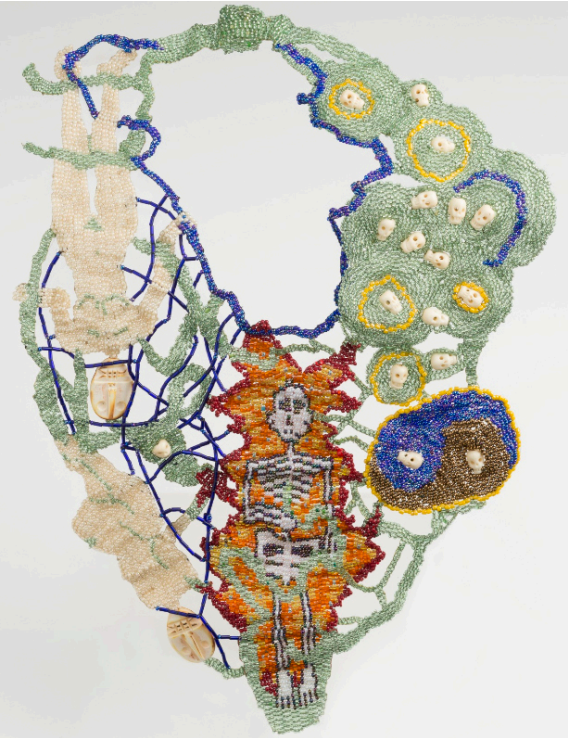

Figure 13.29a Joyce Scott (American; 1948-), *Flaming Skeleton #3*, glass beads and thread, 14 11/16 x 10 x 3/8 in / 37.3 x 25.4 x 1 cm, 1993 (Detroit Institute of Arts, © Joyce Scott).



Figure 13.29a Joyce Scott (American; 1948-), *Flaming Skeleton #3*, glass beads and thread, 1993 (Detroit Institute of Arts, © Joyce Scott).

Stanley Lechtzin (1936-) pioneered **electroforming** (deposition of metal electrically on a non-metallic surface) to create large scale, lightweight jewelry (Figure 13.30). The organic-looking structures grow in an electrified acid bath. Lechtzin also explores and promotes the use of plastics, computer-aided design, and 3-D printing in jewelry and sculpture.



Figure 13.30 Stanley Lechtzin (American 1936-), *Bracelet 39-C,* electroformed silver-gilt with amethyst, 4 7/8 x 4 ¼ x 1 1/8 / 12.4 x 10.8 x 2.9 cm, 1968 (Museum of Fine Arts, Houston, Helen Williams Drutt

Collection, museum purchase funded by the Caroline Wiess Law Foundation, © Stanley Lechtzin).
https://emuseum.mfah.org/objects/61942/bracelet-39c?ctx=31c5f4a428628583755aea2d735da9f91093779e&idx=0

Bruno Martinazzi's (1923-2018) sculpture and jewelry often feature body parts. Following the release of the Goldfinger movie, he designed the *Goldfinger Bracelet* (Figure 13.31). Gold fingers embrace the wrist of the wearer.



Figure 13.31 Bruno Martinazzi (Italian,1923-2018), *Goldfinger Bracelet*, yellow and white gold, 2 7/8 x 2 3/8 x 2 1/8 in / 7.3 x 6.03 x 5.4 cm, 1969-1970 (Los Angeles Museum of Fine Art, © Bruno Martinazzi).
https://collections.lacma.org/node/2230472

Fred Woell (1934-2015) merged his sculpture and jewelry backgrounds to produce miniature masterpieces heavy in social commentary. In the 1960s, Woell was the first to reject expensive materials and construct jewelry made with found objects. He rebelled against the idea that value depended on materials. On the *Come Alive, You're in the Pepsi Generation Brooch* in Figure 13.32, Pepsi bottle caps hang on bullet casings suspended from a red, white, and blue helmet shaped support embellished with a photo from a Pepsi advertisement.



Figure 13.32 Fred Woell (American, 1934-2015), *Come Alive, You're in the Pepsi Generation Brooch,* sterling silver, copper, brass, steel, glass, Pepsi bottle caps, bullet shells, and photo, 4 x 4 x $^{1}/_{4}$ in / 10.2 x 10.2 x 0.6 cm, 1966 (Smithsonian American Art Museum, Smithsonian American Art Museum, Gift of Kathleen Kriegman). https://www.si.edu/object/come-alive-youre-pepsi-generation%3Asaam_2006.34.1

Richard Mawdsley (1945-) uses precious metals and stones to make intricate objects and jewelry, often inspired by his childhood interest in machinery. He crafted *Ray Gun Brooch* (Figure 13.33) with sterling silver tubing, wire, and other elements, including green jade balls. The fabrication of this piece is documented on pages 270-275 of Untracht's *Jewelry Concepts and Technology*.



Figure 13.33 Richard Mawdsley (American, 1945-), *Ray Gun Brooch,* fabricated sterling silver and jade, 3 ¼ x 3 3/8 x ¾ in / 8.26 x 8.52 x 1.9 cm, 1974 (© Metal Museum, TN, Gift of Mary Lee Hu). https://metalmuseum.catalogaccess.com/objects/1683

Art Smith's (1917-1982) studies in architecture and sculpture influenced his approach to body adornment. In 1969, he said, "A piece of jewelry is in a sense an object that is not complete. Jewelry is a "what is it?" until you relate it to the body. The body is a component in design just as air and space are. Like line, form, and color, the body is a material to work with." https://en.wikipedia.org/wiki/Art_Smith_(jeweler)

Inspired by the kinetic mobiles and bold jewelry of Alexander Calder, the crescent-shaped elements of Smith's dynamic textured necklace (Figure 13.34) hug the neck and move with the wearer's body.



Figure 13.34 Art Smith (Cuban-American, 1917-1982), ***Patina*** *Necklace*, silver, 11 1/8 x 6 1/8 x 1/4 in / 28.3 x 15.6 x 0.6 cm, ca. 1959 (© Brooklyn Museum, Gift of Charles L. Russell).
https://www.brooklynmuseum.org/opencollection/objects/179127

Over his long career, Albert Paley (1944-) transitioned from wearable sculptures with sinuous lines and bundled components, like the *Brooch* in Figure 13.34, to monumental forged architectural projects like the *Portal Gates* in Figure 13.36, to even larger fabricated monochromatic and polychromatic sculptures. Although the scale varies dramatically, his pieces share a similar aesthetic; complex design, attention to detail, organic liner elements, and excellent craftsmanship.



Figure 13.35 Albert Paley (American, 1944-), *Brooch,* 14k gold, sterling silver, and pearls, 3 ¼ x 5 ¼ x 1 ½ in / 8.3 x 13.3 x 3.8 cm, 1969 (Museum of Fine Arts, Houston, Helen Williams Drutt Collection, museum purchase funded by Mr. and Mrs. John W. Mecom, Jr., by exchange, © Albert Paley). https://emuseum.mfah.org/objects/58334/brooch?ctx=644d8305c3c710a51e126278c1b8a14c15c2a372&idx=6

The *Portal Gates* (Figure 13.36) for the Renwick Gallery took Paley and his assistant seven months to complete. It combines yellow brass, pink copper, reddish brown bronze, and steel finished with bluing to darken it. This commission encouraged Paley to move away from jewelry towards blacksmithing.

Paley described his approach: "My investigation in form development centers on the exploration of material characteristics, related processes and technologies. In creating a work of art, besides my personal experience, my concern is how it emotionally and intellectually engages the viewer. Through the creative process I have developed a personal visual vocabulary fundamentally based in symbolism and metaphor which is implicit in my work." https://www.albertpaley.com/index.cfm?Page=Artist%20Statement



Figure 13.36 Albert Paley (American, 1944-), *Portal Gates*, steel, brass, copper, and bronze, 90 $^{3}/_{4}$ x 72 x 4 in / 230.5 x 182.9 x 10.3 cm, 1974 (Smithsonian Museum of American Art).
https://americanart.si.edu/artwork/portal-gates-19204

John Paul Miller (1918-2013) revived the ancient technique of attaching tiny metal spheres to a metal surface without solder known as granulation (see Figure 3.25). *Pendant/Brooch* (Figure 13.37) showcases his skills with the formerly lost art along with his forging and enameling expertise and a fascination with natural forms.



Figure 13.37 John Paul Miller (American; 1918-2013), *Pendant/Brooch*, 18k gold with granulation and **cloisonné enamel**, 2 ½ x 2 x 1 in / 6.4 x 5.2 x 2.5 cm, 1975 (Smithsonian American Art Museum, Gift of an anonymous donor in memory of Dorothy S. Payer and in honor of John Paul Miller). https://americanart.si.edu/artwork/pendantbrooch-33421

Earl Pardon (1926-1991) helped lead the post-World War II studio craft movement. *Necklace #1057* in Figure 13.38 combines his expertise in painting, sculpture, and jewelry. Hinged sterling silver plaques decorated with iridescent mother-of-pearl, **ebony**, **ivory,** gold, silver, enamel, and gemstones combine to form a necklace composed of miniature works of art. Pardon treated jewelry like he would a painting. For him, they were color statements more than anything else.



Figure 13.38 Earl Pardon (American 1926-1991), *Necklace #1057*, sterling silver, 14k gold, ebony, ivory, enamel, mother of pearl, ruby, garnet, blue topaz, rhodolite, amethyst, and spinel, 17 ¼ x 1 1/8 x 1/8 in / 43.8 x 2.9 x .3 cm, 1988 (Smithsonian American Art Museum, Gift of the James Renwick Alliance and museum purchase through the Smithsonian Institution Collections Acquisition Program).
https://americanart.si.edu/artwork/necklace-1057-32440

William Harper (1944-) was an abstract painter until the 1960s, when he switched to enamel on metal to achieve more intense colors. In the early 1970s, he began to produce colorful enameled gold and silver necklaces and brooches that evoke the supernatural.

A haruspex is an ancient Roman fortuneteller who prophesizes the future from the entrails of sacrificial animals. Coral spills out like intestines in Harper's *Self Portrait of the Artist as a Haruspex* (Figure 13.39), one of a series that depicts him as a mystic. The blackened left eye represents his blindness, and the forehead protrusion shields him from migraine headaches.



Figure 13.39 William Harper (American; 1944-), *Self Portrait of the Artist as a Haruspex,* gold, sterling silver, cloisonné enamel, opal, pearl, coral, shell, and carapace, 11 ½ x 2 ½ x 2 ¼ in / 29.2 x 6.4 x 5.8 cm, 1990 (Smithsonian

American Art Museum, Gift of the James Renwick Alliance and museum purchase through the Smithsonian Institution Collections Acquisition Program, © William Harper).
https://americanart.si.edu/artwork/self-portrait-artist-haruspex-32441

Arline Fisch (1931-2024) uses fabric techniques to create rings, brooches, bracelets, and necklaces. Like the Egyptian Broad Collar Necklaces (Figure 2.7) that initially inspired her, Fisch's necklaces are flexible and wide.

Zigzag Necklace (Figure 13.40) combines woven and folded layers of oxidized silver and 18k gold that are joined at each fold and the clasp, a V shaped black onyx, hematite, and agate mosaic set in 18k yellow gold.

Fisch's *Bracelet and Glove* in Figure 13.41 were **knit** with copper and fine silver wire.



Figure 13.40 Arline Fisch (American, 1931-2024), *Zigzag Necklace,* woven 18k gold, oxidized sterling silver, onyx and hematite mosaic, 1 ½ x 7 in / 3.8 x 17.8 cm, California, 1987 (Museum of Fine Arts, Boston, The Daphne

Farago Collection). https://collections.mfa.org/objects/456439/zigzag-necklace?ctx=33adf86c-e75e-4cf8-bc12-df233b4b34a5&idx=0

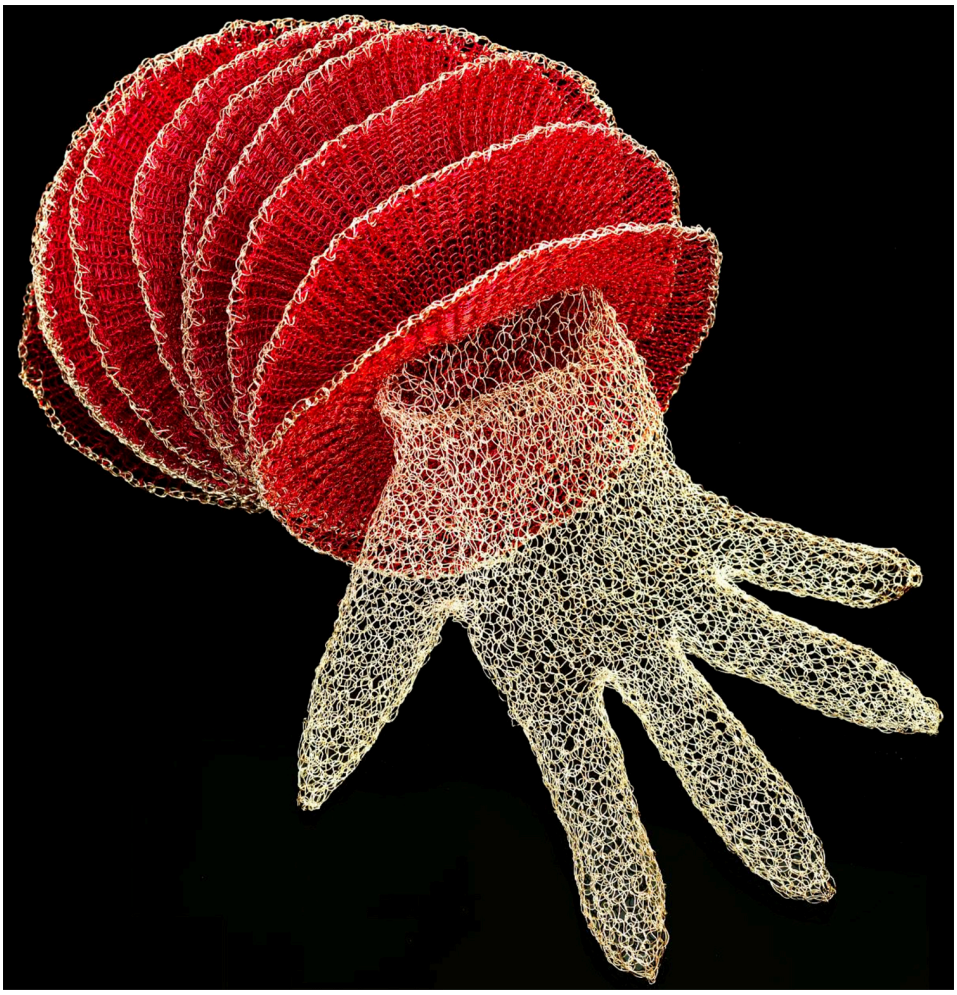

Figure 13.41 Arline Fisch (American, 1931-2024), *Bracelet and Glove*, knitted copper and fine silver wire, 5 $^{1}/_{4}$ x 16 $^{1}/_{2}$ x 6 in / 13.3 x 41.9 x 15.2 cm, California, 1999 (Smithsonian American Art Museum, Gift of the James Renwick Alliance). https://americanart.si.edu/artwork/bracelet-and-glove-71852

Bruce Metcalf (1949-) includes wood, metal, and plastic, and uses a variety of techniques to make jewelry, small sculptures, and wall reliefs. Everyday objects help him create whimsical artworks that comment on the human condition. *Wood Neckpiece #14* in Figure 13.42 includes three cedar spheres, seven shaped links, driftwood, and maple. The pendant resembles

a creature with eyelashes and a plastic mouth. One of the pieces of driftwood is inlaid with 23k gold **leaf**. https://www.brucemetcalf.com/

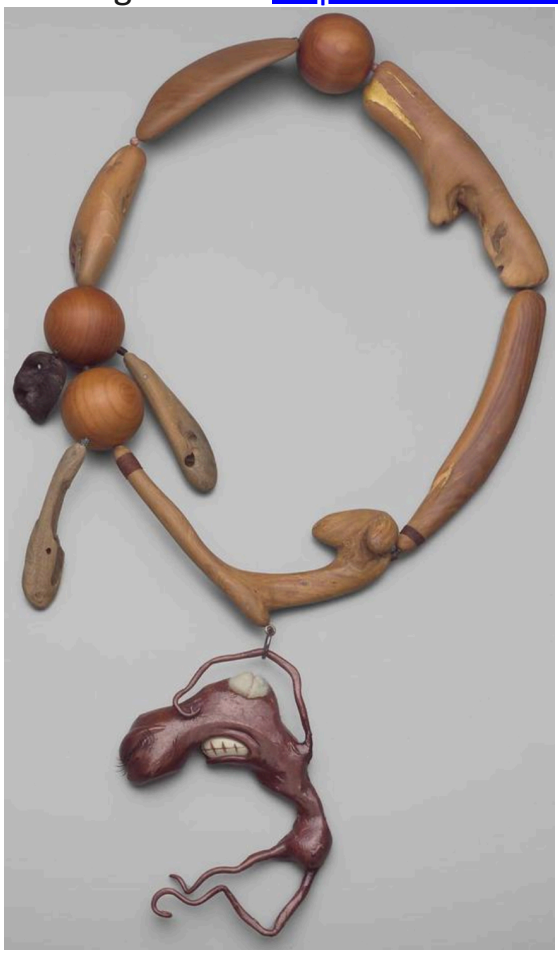

Figure 13.42 Bruce Metcalf (American, 1949-), *Wood Neckpiece #14,* cedar, maple, driftwood, brass, aluminum, silver, Corian, Delrin, polyester, felt, eyelash, stain-resistant cable, 23k gold leaf, 15 ½ x 10 x 1 ¾ in / 39.4 x 25.4 x 4.4 cm, Philadelphia, PA, 1995 (Museum of Fine Arts, Boston, © Bruce Metcalf). https://collections.mfa.org/objects/455168/wood-necklace-14?ctx=497476aa-3df2-46ba-bd91-7f9a6bccf4df&idx=0

The "first generation" of American craft movement woodworkers include Wharton Esherick, George Nakashima, and Sam Maloof. Their exquisite craftsmanship, organic designs, and transparent finishes that reveal the natural beauty of wood continue to inspire and influence today's makers.

Wharton Esherick (1887-1970) successfully blurred the boundaries between sculpture and furniture. He trained as a painter,

sculptor, and printmaker, and began working with wood when he decided to build frames for his paintings. Esherick went on to create hundreds of unique pieces, rarely reproducing his designs. The music stand in Figure 13.43 is one of the few pieces he produced more than once. https://whartoneshericksmuseum.org/



Figure 13.43 Wharton Esherick (American, 1887-1970), *Music Stand*, cherry wood, 43 ¾ x 19 in / 111.1 x 48.3 cm, 1962 Courtesy of the (Rhode Island School of Design Museum, Providence, RI, The Felicia Fund, CC0). https://risdmuseum.org/art-design/collection/music-stand-1988002?return=%2Fart-design%2Fcollection%3Fsearch_api_fulltext%3D1988.002%26op%3D

George Nakashima (1905-1990) and his young family established their home and studio New Hope, Pennsylvania, following their release from the World War II Japanese internment camp in Idaho. Referring to his furniture as Japanese Shaker, Nakashima's style synthesized his Japanese heritage with American tradition. A Shaker meetinghouse bench (Figure 12.10) inspired his *Conoid Bench* in Figure 13.44, but the live edges of the black walnut slab, the sculpted top rail, and the light-colored spindles were his signature additions. The hickory conoid spindles were heated (to shrink them) then fit into sockets, expanding as they cooled, for a tight fit. Furniture crafted by his daughter, Mira, and many other furniture makers today has been inspired by Nakashima working methods and aesthetic.

George Nakashima's furniture manifests his philosophy: "Instead of a long running and bloody battle with nature, to dominate her, we can walk in step with a tree to release the joy in her grains, to join with her to realize her potentials, to enhance the environments of man https://nakashimawoodworkers.com/philosophy/."



Figure 13.44 George Nakashima (American, 1905-1990), *Conoid Bench*, black walnut slab and hickory spindles, 31 $^{1}/_{8}$ x 84 $^{1}/_{2}$ x 35 $^{5}/_{8}$ in / 79.1 x

214.6 x 90.5 cm, New Hope, Pennsylvania, 1977 (Smithsonian American Art Museum, Gift of Dr. and Mrs. Warren D. Brill). https://americanart.si.edu/artwork/conoid-bench-32461

Building furniture for his own apartment inspired Sam Maloof (1916-2009) to switch from graphic design to furniture-making. Graceful proportions, pinned joints, and rich wood grain are signature characteristics of his woodwork. The sculpted arms, seat, and spindles of the Rocking Chair in Figure 13.45 are ergonomically shaped to provide comfortable support. https://www.sammaloofwoodworker.com/



Figure 13.45 Sam Maloof (American, 1916-2009), *Rocking Chair,* sawn, laminated, shaped, and sanded walnut, 45 x 27 ¾ x 46 in / 114.3 x 70.5 x 116.8 cm, Alto Loma, California, 1975 (American Museum of Fine Arts, Boston, Purchased through funds donated by the National Endowment for the Arts and the Gillette Corporation). https://collections.mfa.org/objects/43068/rocking-chair?ctx=31cec436-cfd9-4b53-94bb-c7cd28310fea&idx=0

Tage Frid (1915-2004) was born and trained in Denmark, but he moved to the United States in 1948 at the invitation of the American Craft Council. Frid emphasized the value of mastering woodworking skills at a time when self-expression was more important than technique in American education. The tremendous impact of his teaching and publications is still felt today. Frid advised students to seek design inspiration from various sources, as he did. His elegant *Stool* in Figure 13.46 was inspired by traditional European 3-legged birthing chairs.



Figure 13.46 Tage Frid (Danish-American, 1915-2004), *Stool*, walnut, 30 ½ x 19 x 15 in / 77.5 x 48.3 x 38.1 cm, 1982 (RISD Museum, Providence, RI, Gift

of the Rhode Island School of Design Class of 1982, CC0).
https://risdmuseum.org/art-design/collection/stool-82178

Jere Osgood (1936-2023) learned furniture making from Tage Frid, then furthered his studies in Denmark. It was the curved lines of Wharton Esherick's work that inspired him to develop tapered bent wood **laminations**, his specialty.

A teacher's highest compliment is to be outperformed by their students. Osgood's amazing desk in Figure 13.47 does that by pushing what he learned to the limits. Osgood, who also became a great teacher, noted the key to success is to design the piece first, then look around for the technique that will support it.



Figure 13.47 Jere Osgood (American, 1936-2023), *Ebony Desk*, Macassar ebony, Australian lacewood, Padauk, pearwood, ash, and leather, 50 x 69 in / 127 x 175.26, Massachusetts, 1990 (Mint Museum, © Jere Osgood).
https://collections.mintmuseum.org/single?id=2002.96

Strips of wood glued together in a curved mold are stronger than the same curve cut from a solid piece. Ash and oak are favored because they bend and laminate better than other species that fracture or are too oily to glue.

Jere Osgood (1936-) pioneered **bentwood lamination.** He laminates tapered slices of wood together with glue while compound bending them as they dry, a combination that enables him to produce furniture with graceful,

but incredibly strong curved legs. He demonstrated these techniques during the Furniture Society Conference at the Appalachian Center for Craft in 1999.

First, he prepares a jig to help guide the wood through the ¾ in / 1.9 cm blade of a band saw. To make the angled jig, he measures the thickness required on each end, inserts splines between two boards (Figure 13.48a), then glues them in place. He secures the wood against a metal stop on the end of the jig and slides the jig along the fence to taper-cut the wood strips (Figure 13.48b).



Figure 13.48a Jere Osgood inserts splines into a jig at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

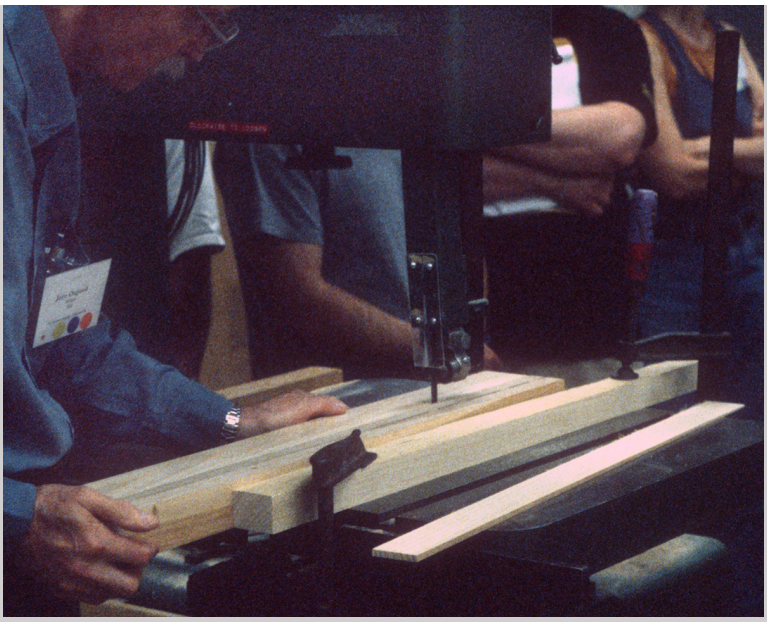

Figure 13.48b Jere Osgood cuts tapered pieces of wood on a band saw with the jig, numbering them to keep them in order for the glue-up at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).



Figure 13.48c Jere Osgood's tapered wooden strip cut on the bandsaw at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

The metal stop on the jig is removed before planning the tapered piece to smooth the surface. It cannot be planed thinner than 1/32 in / .031 cm or it will get caught in the machine.



Figure 13.48d Osgood will place one of the tapered strips on the jig resting on the planer, then run them through the planer at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

Osgood mixes 1:6 ratio of slow-setting Unibond 800, a urea formaldehyde glue (Figure 13.48e). He paints the glue onto one side of each piece of wood in the order they were cut from the original block (Figure 13.48f).

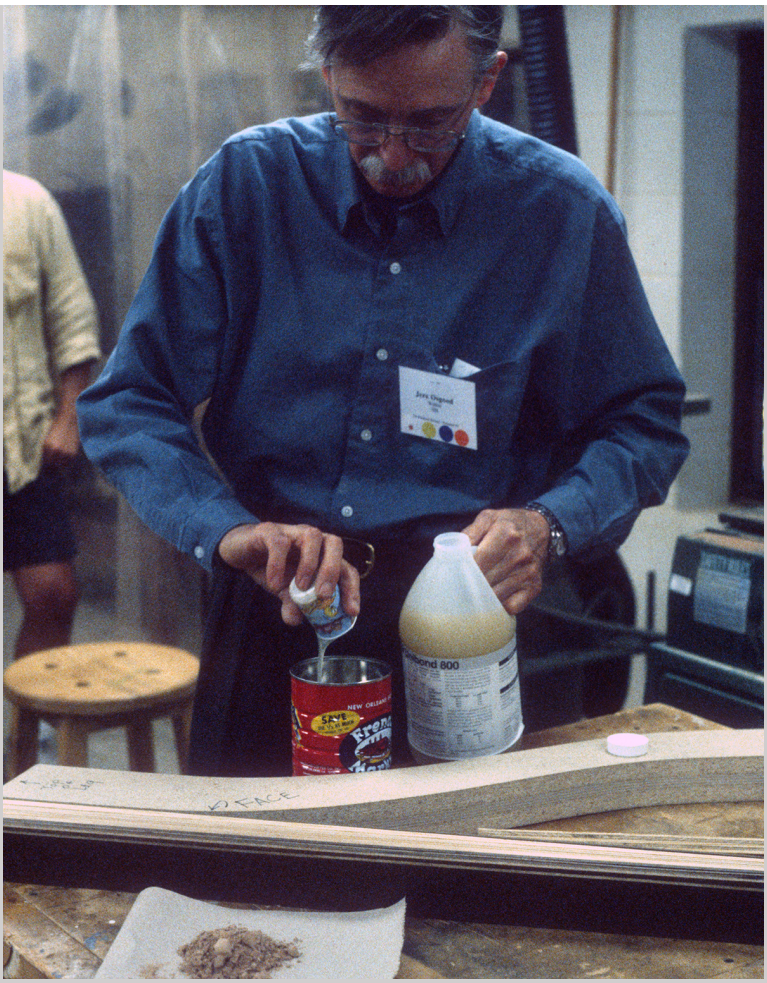

Figure 13.48e Osgood mixes urea formaldehyde glue at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).



Figure 13.48f Osgood paints glue on the tapered strips of wood at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

Several pieces of hard board are placed on the outside of the glued stack, and one piece is placed between the MDF / particle board mold and the glue covered wood (Figure 13.48g). Numerous clamps press the layers of wood against the curved mold to assure a tight bond (Figures 13.48h and 13.48i).



Figure 13.48g Beginning at one end, Osgood clamps the glued laminates between hardboard and the thick mold (photograph by Carol Ventura, 1999).



Figure 13.48h Osgood continues to clamp the glued leg laminates between hardboard and the thick mold (photograph by Carol Ventura, 1999).

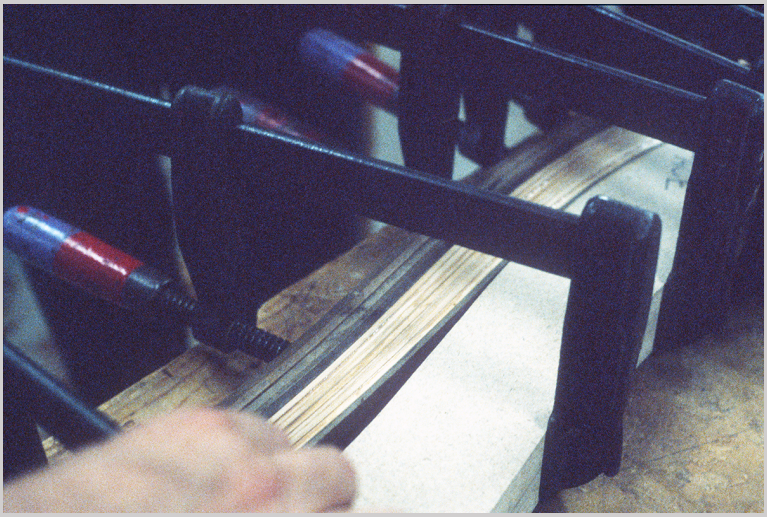

Figure 13.48i Osgood clamps the glued leg laminates between hardboard and the thick mold (photograph by Carol Ventura, 1999).

The clamps are removed after the glue has set, then the side edges are cut off with a band saw to create a smooth surface (Figure 13.48j).

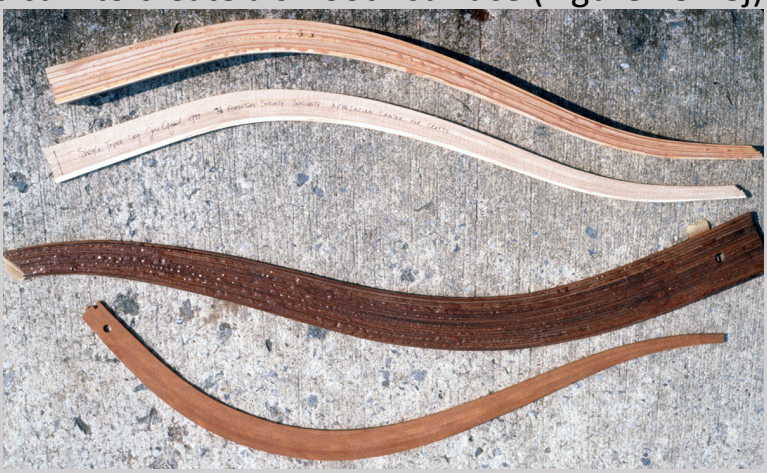

Figure 13.48j An untrimmed leg above three side edge cut offs (photograph by Carol Ventura, 1999).

Wendell Castle (1932-2018) is not only considered to be the father of sculptural furniture, but he was also a very influential teacher. Castle's sculpture background is apparent in his furniture, which often crosses the boundary between functional and non-functional and the imaginary line between craft and art (Figure 13.49). Castle was very interested in art furniture becoming sculpture and having it accepted on that level.



Figure 13.49 Wendell Castle (American, 1932-2018), *Chair with Sport Coat*, carved maple, 36.3 x 27.3 x 18.5 in / 92.1 x 69.2 x 47 cm, Scottsville, NY, 1978 (photograph © Wendell Castle).
https://workshop.wendellcastle.org/wendellcastle



Figure 13.50 Wendell Castle (American, 1932-2018), *Long Night*, carved and stained Peruvian walnut, 66 ¾ x 38 ¼ x 32 in / 169.5 x 97.2 x 81.3 cm, Scottsville, NY, 2011.
Object credit: Museum of Arts and Design, New York; gift of the artist and Nancy Jurs, 2016
Photo credit: Photo by Jon Lam Photography; courtesy of Friedman Benda and the artist. https://collections.madmuseum.org/objects/14412/long-night?ctx=07ce40166ef8b0be2bc4476dad0887cbd94ff670&idx=10

In the 1960s, Wendell Castle upscaled the stack lamination technique used to make duck decoys to produce large blanks for his sculptural furniture. Castle cut slabs of wood to shape, glued them together, then carved and finished the pieces. He used hand and power tools at first and eventually purchased a computer-numerical-control (CNC) machine to help rough out the work. See Castle at work and his fully equipped studio at https://www.youtube.com/watch?v=qWQyVzmgmMs



Figure 13.51 Wendell Castle holds the small urethane model he sculpted to guide the CNC machine in his studio in Scottsville, NY (photograph by Scott Grove). https://www.woodworkingnetwork.com/community/show-us-your-shop/remembrance-wave-wendell-castle

Brad Sells (American, 1969-) studied pottery and psychology before turning to wood. He sculpted *Spirit* (Figure 13.52) from a burl, a tree growth with swirly grain. Sells' organic vessel forms convey motion, direction, and balance, inspired by the inherent beauty of growth and experience.



Figure 13.52 Brad Sells (American, 1969-), *Spirit,* maple burl, 12 ¼ x 25 ½ x 16 1/8 in / 31 x 64.7 x 40 .8 cm, Cookeville, TN, 2000 (Smithsonian American Art Museum, Gift of Dr. Donald and Mrs. Sue M. Spicer).
https://americanart.si.edu/artwork/spirit-68045

Wood shrinks as it dries, so it will crack if it does not dry slowly. Brad Sells works with green wood, so he allows it to rest at various stages of the carving process to let it dry evenly. Sells begins by intuitively cutting out the rough shape with a pneumatic chain saw (Figure 13.53a) then uses a variety of wood cutting tools and abrasives to refine the form. Sells begins with aggressive grinding bits (Figure 13.53b), then moves on to finer ones (Figure 13.53c) as the piece takes shape. Loud tools damage the ears and saw dust is bad for lungs and eyes so Sells wears ear protection and a mask with built in filters.

After roughing out the initial form, Sells waits several months to remove more wood from the walls of the vessel (Figure 13.53b), then continues to refine the shape over a period of a few months (Figure 13.53c).



Figure 13.53a Brad Sells carves out the rough shape with a pneumatic chain saw at his studio in Cookeville, TN (photograph by Carol Ventura, September 2008).



Figure 13.53b Brad Sells carves away the inner walls of the bowl with a pneumatic rotary grinder at his studio in Cookeville, TN (photograph by Carol Ventura, May 2009).



Figure 13.53c Sells uses a round rotating grinding bit to refine the interior at his studio in Cookeville, TN (photograph by Carol Ventura, July 2009).

Sells checks the wall thickness with figure 8 calipers, using a crayon to mark the areas that need to be removed (Figure 13.53d). He then grinds away the marks (Figure 13.53e).



Figure 13.53d Brad Sells checks the thickness of the walls with figure 8 calipers and marks the wood with a crayon where the walls need to be thinned at his studio in Cookeville, TN (photograph by Carol Ventura, August 4, 2009).



Figure 13.53e Brad Sells grinds away the wood he marked at his studio in Cookeville, TN (photograph by Carol Ventura, August 4, 2009).

When grinding has been completed, Sells smooths the wood with belt and rotary sanders, working from rough to fine grit sandpaper (Figures 13.53f and 13.53g).



Figure 13.53f Brad Sells uses a narrow belt sander to smooth difficult to reach places at his studio in Cookeville, TN (photograph by Carol Ventura, August 4, 2009).



Figure 13.53g In progress pieces dry in the background as Brad Sells sands the bowl in his studio in Cookeville, TN (photograph by Carol Ventura, October 9, 2009).

Brad blackens the edges with a flame (Figure 13.53h), sands the surfaces, then applies Watco oil to give it a Danish finish (Figure 13.53i).



Figure 13.53h Brad Sells blackens the edge of the bowl with the flame of a torch at his studio in Cookeville, TN (photograph by Carol Ventura, October 14, 2009).



Figure 13.53i Brad Sells finishes the bowl with Watco Oil at his studio in Cookeville, TN (photograph by Carol Ventura, October 14, 2009).



Figure 13.53j Brad Sells applies several coats of oil, buffing in between, over a period of a few days at his studio in Cookeville, TN (photograph by Carol Ventura, October 14, 2009).

See Brad Sells craft a live edge spalted sugar maple table at https://www.youtube.com/watch?v=8AWqNS-NTzg

After graduating with a degree in painting in 1966, Judy Kensley McKie (1944-) began making furniture for her home. She honed her skills working in a furniture cooperative, then began to make one-of-a-kind pieces. *Snake Table* in Figure 13.54 is a typical example of her playful mixed media animal motif furniture inspired by ancient Egyptian, African, Pre-Columbian, and Asian cultures and folk art.



Figure 13.54 Judy Kensley McKie (American, 1944-), *Snake Table*, glass and painted maple, 21 3/16 x 19 5/16 in / 53.8 x 49 cm, Cambridge, Massachusetts, 1988 (Yale University Art Gallery, Bequest of Marie-Antoinette Slade, by exchange).
https://artgallery.yale.edu/collections/objects/57972

Alphonse Mattia (1947-) studied under Tage Frid (Figure 13.46) and went on to become an influential teacher and artist, himself (Figure 13.55). His humorous work often consists of multiples.



Figure 13.55 Alphonse Mattia (American, 1947-), *Atlas, Webster, and Roget,* painted Baltic birch plywood and various hardwoods with glass and gold leaf, size of case with square mirror: 70 x 21 $^{1}/_{2}$ x 15 $^{1}/_{2}$ in / 177.8 x 54.6 x 39.4 cm, 1995 (Smithsonian American Art Museum. Gift of Peter T. Joseph). https://americanart.si.edu/artwork/points-reference-atlas-webster-roget-35754

Working as a furniture restorer taught Craig Nutt (American, 1950-) what he needed to know about working with wood. His love of gardening, sense of humor, and skills are apparent in *Radish Salad Bowl* (Figure 13.56). Nutt said, "I am interested in the familiar and the unexpected, the real and the fantastic, the understated and the obsessive, the ancient and the space aged, nature and artifice, art and craft." https://www.craignutt.com/



Figure 13.56 Craig Nutt (American, 1950-), *Radish Salad Bowl,* bleached maple, birch, and tupelo lacquered and dyed, 55 5/8 x 21 x 21 in / 141.4 x 53.4 x 53.4 cm, 1998 (Smithsonian American Art Museum, Gift of the James Renwick Alliance, © Craig Nutt). https://americanart.si.edu/artwork/radish-salad-bowl-37401

Instead of sketching out ideas, Craig Nutt (American, 1950-) makes wooden maquettes, photographs them, then colorizes the digital images. In Figure 13.57a, Nutt is holding the maquette for the *Celery Chair with Carrots, Peppers, and Snow Peas* on the table. Three colorized photographs of the maquette are leaning on the window.



Figure 13.57a Craig Nutt (American, 1950-) in his studio in Kingston Springs, Tennessee (photograph by Carol Ventura, 2024).

In Figure 13.57b, Nutt holds the maquette for his 1996 *Corncord* at the Hartsfield-Jackson International Airport in Atlanta, GA. The monumental 120 in / 304.8 cm painted tulip poplar sculpture is installed at Concourse E, Gate 16. The cabinet behind him is filled with more maquettes.



Figure 13.57b Craig Nutt looks at the maquette for his Corncord sculpture (photograph by Carol Ventura, 2024).

Silas Kopf (1949-) was trained in architecture before apprenticing with Wendel Castle (Figure 13.48). Afterwards, Egyptian, Islamic (Figures 8.18 and 8.19), and European (Figures 10.23 and 10.24) **marquetry** led him to Europe to research and learn those traditional techniques. His architectural studies, furniture design and marquetry skills, and a wonderful sense of humor are evident in *Who is Chicken Now?* (Figure 13.58).



Figure 13.58 Silas Kopf (American, 1949-), *Who is Chicken Now?,* birdseye maple, cherry, and marquetry, 58 x 28 x 41 in / 147.32 x 71.12 x 104.14 cm, 2008 (The Mint Museum, © Silas Kopf).
https://silaskopf.com/gallery/cabinets/

Silas Kopf (American, 1949-) demonstrated piece-by-piece marquetry during the 1999 Furniture Society Conference at the Appalachian Center for Craft.

Kopf always selects 1/28 in / .036 cm or 1/32 in / .031 thick veneers before the first cut is made, looking for background pieces and several different values. He prefers sawn veneer because sliced veneer cracks. He uses holly, maple, birch, cherry, and walnut for flesh tones.

Kopf traces his design onto tissue paper, then transfers each part of the motif onto veneer with carbon paper, beginning in the middle of the motif (Figures 13.59a and 13.59b).



Figure 13.59a Kopf positions a tissue paper sketch over a piece of veneer so that it aligns with the grain at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).



Figure 13.59b Kopf inserts a piece of carbon paper under the sketch and then traces over the lines to transfer the sketch to the veneer at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

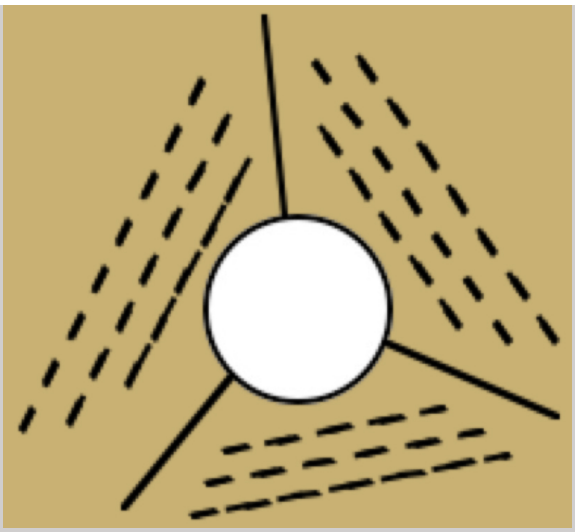

Figure 13.59c To avoid short grain problems, Kopf joins several pieces of veneer together, running the grain as illustrated (illustration by Carol Ventura).

A German 2 / 0 saw blade is used on a scroll saw at 700 RPM with the table set to around 13 degrees to create a double bevel cut to hide the kerf (the space left by the saw blade). The bed is waxed to allow the work to slide easily. A piece of discard veneer is placed on top and cardboard on the bottom of two overlapping 1/32 in / .031 cm thick veneers arranged face up (Figure 13.59d). Cutting the veneers at the same time on an angle produces a perfect fit (Figure 13.59e).



Figure 13.59d Kopf cuts veneer with a scroll saw set at a 13-degree angle to produce a double bevel cut at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

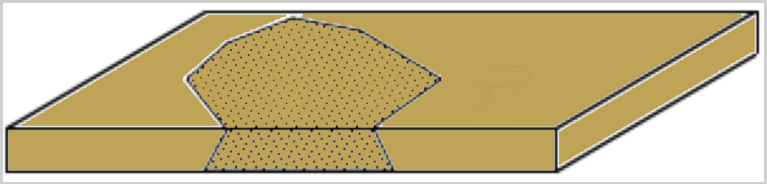

Figure 13.59e A double bevel cut creates a tight joint (illustration by Carol Ventura).

Yellow Titebond glue was applied after each cut to the back joint, and veneer tape was put on the front for added security (Figure 13.59f).



Figure 13.59f Yellow Titebond glue is applied to the newly cut pieces at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

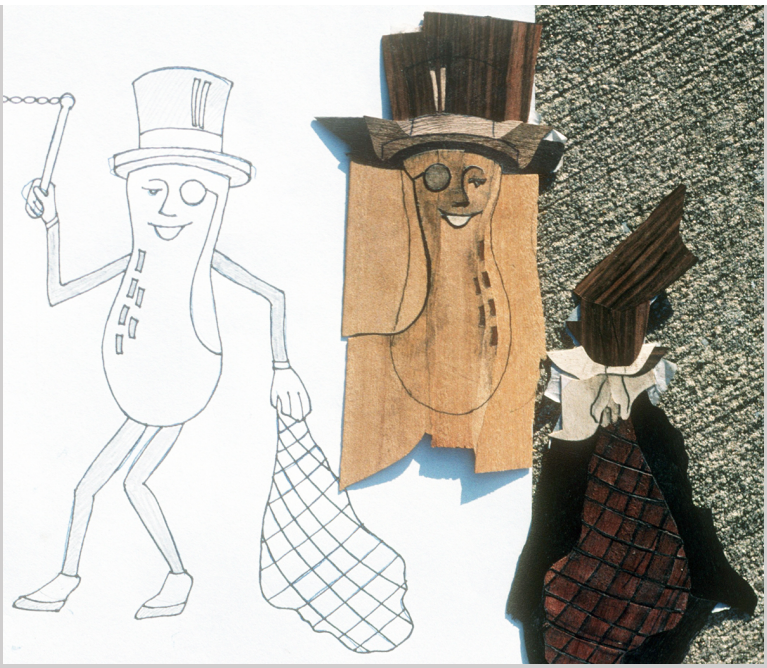

Figure 13.59g Sketch with in-process back of the veneer at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).



Figure 13.59h Sketch with in-process taped front of the veneer at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).



Figure 13.59i Back of Silas's veneer at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).



Figure 13.59j Taped front of Silas's veneer at the Appalachian Center for Craft (photograph by Carol Ventura, 1999).

To attach the veneer, Kopf spreads urea formaldehyde glue on it and the furniture surface, covers the veneer with a piece of neoprene rubber to accommodate the tape, then applies pressure. The tape is removed with a cabinet scraper and sandpaper after the glue has set, then the piece is finished with spray lacquer.

John Jordan's (1950-2023) spherical turned bowl in Figure 13.60 features eight carved, spiral sections that begin at the rim and expand and contract with vessel's shape. The surface of this piece was lightly hammered to create a softly modulated texture.



Figure 13.60 John Jordan (American, 1950-2023), *Spiral Vessel*, turned and carved cherry, 12 3/16 x 15 in / 31 x 38.1 cm, Antioch, Tennessee, 1999 (Museum of Fine Arts, Boston, Museum purchase with funds contributed by Henry H. Hoyt, Jr., in honor of Jonathan L. Fairbanks).
https://collections.mfa.org/objects/326417

John Jordan's vessels begin as blanks cut from logs with a chain saw (side-grained—with burl or lighter sapwood at the top of the vessel for visual interest). The green wood is turned on a **lathe** right away to avoid dark fungus staining that can form on wet wood. The pieces are covered with a plastic bag between working sessions to keep the wood moist.



Figure 13.61a John Jordan cut the wood for this vessel from the edge of this log. He placed the light-colored sapwood at the top (photograph by Carol Ventura, 2008).

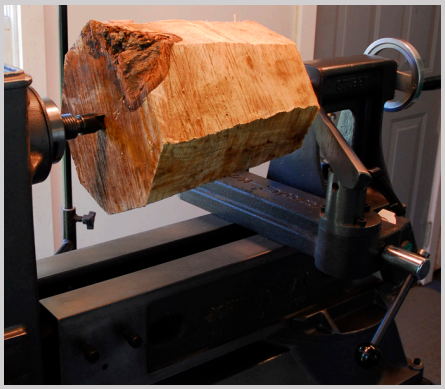

Figure 13.61b John Jordan will transform this wood blank into a work of art on his lathe in his Antioch, TN studio (photograph by Carol Ventura, 2008).

The wood blank is secured between centers with the bottom of the vessel against the tail stock (Figure 13.61c). A sharp tool, supported on a tool rest, and a steady hand transforms the rough blank into a cylinder while rotating at a modest speed, then the bottom is shaped to form a hefty tenon for mounting in a chuck (Figure 13.61d).



Figure 13.61c John Jordan, turns the top of the vessel between centers in his studio in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61d John Jordan, turns the bottom of the vessel between centers in his studio in Antioch, TN (photograph by Carol Ventura, 2008).

After drilling a hole to the finished depth of the inside, Jordan hollows the walls of the vessel with straight and hooked tools that he designs https://www.johnjordanwoodturning.com/hollowing-tools.html, skillfully pivoting them on the tool rest (Figure 13.61e). He stops frequently to clean moisture and shavings out with an air hose. He measures the wall thickness with figure 8 calipers (Figure 13.61).



Figure 13.61e A tool rest supports Jordan's hooked tool as it bites into the inner walls of the rotating vessel in his studio in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61f The gap between the curved ends of the figure 8 calipers shows the wall thickness in Antioch, TN (photograph by Carol Ventura, 2008).

When the walls reach ½ in / 1.27 cm thick (thick enough for carving), the vessel is removed from the lathe, the lip is slipped into a wooden jam chuck, the base is pushed against the live center of the tail stock, then most of the tenon is cut away as it rotates between centers (Figure 13.61g). The last little bit of tenon is removed with a gouge (Figure 13.61h).



Figure 13.61g With the top of the vessel in a jam chuck and the bottom supported by the live center of the tail stock, Jordan turns away the tenon from the base in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61h With the vessel secured between his knees and a padded table, John Jordan carves off the remains of the tenon to create a slightly concave base in Antioch, TN (photograph by Carol Ventura, 2008).

Jordan carves the wood drier than he turns it, so the vessel is placed in a cabinet for a few days before laying out the design with pencil (Figure 13.61i). While supporting the piece between his knees and a carpet-covered table, Jordan begins carving away the pencil lines with a V-cutter tool in a reciprocating tool (Figure 13.61j).



Figure 13.61i Before (left) and after carving a spiral. Jordan marks the design free hand with a pencil in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61j Securing the vessel with his knees and the padded table, Jordan carves away the pencil lines with a reciprocating carver in Antioch, TN (photograph by Carol Ventura, 2008).

Sharp angles are smoothed with a cylindrical cutter in a pneumatic die grinder (Figure 13.61k). The curves are refined with a variety of rasps (Figure 13.61l), sandpaper (Figure 13.61m), saws, knives (Figure 13.61n), and gouges (Figure 13.61o), and files (Figure 13.61p). The vessel is slowly air-dried (because kiln-drying homogenizes the color), then a clear finish is sprayed on to bring out the color of the wood. A more detailed look at John Jordan making this vessel is at https://www.johnjordanwoodturning.com/uploads/9/6/4/2/9642134/amer

ican_woodturner_-_turned_and_carved_hollow_vessel__use_this_one_.pdf.



Figure 13.61k Jordan uses a pneumatic die grinder to smooth ridges in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61l Jordan refines the curves a rasp in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61m John Jordan smooths the surface with pressure sensitive adhesive sandpaper attached to a flexible piece of leather-padded walnut in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61n Jordan shapes the top profile with a knife in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61o John Jordan deepens the groove with a gouge in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61p Jorden refines the groove with a riffler file in Antioch, TN (photograph by Carol Ventura, 2008).



Figure 13.61q John Jordan sands the surface smooth in Antioch, TN (photograph by Carol Ventura, 2008).

International travel and studies with colorist Josef Albers and his wife, Anni Albers (Figure 12.44), greatly influenced Sheila Hicks' (1934-) artistic voice. The wrapped bundles of **linen** placed side by side are reminiscent of the **ikat** dyeing technique (Figures 5.36 and 6.5), except the bindings are left intact in *Rainforest* (Figure 13.62).



Figure 13.62a Sheila Hicks (American, 1934-), *Rainforest*, silk, linen, and cotton, 96 x 270 x 3 in / 243.8 x 685.8 x 7.6 cm, ca. 1975 (Smithsonian American Art Museum, Gift of Bob and Lynn Johnston through Educational Ventures, Inc.). https://americanart.si.edu/artwork/silk-rainforest-77519



Figure 13.62b Sheila Hicks (American, 1934-), *Rainforest* detail, twisted bundles of linen wrapped with silk and cotton thread, ca. 1975 (Smithsonian American Art Museum, Gift of Bob and Lynn Johnston through Educational Ventures, Inc.). https://americanart.si.edu/artwork/silk-rainforest-77519

Sekimachi wove six layers of interconnected monofilament on a twelve-**harness** loom, then opened and arranged the fabric to form *Nagare VII* (Figure 13.63), which explores transparency, space, and movement. Nagare means “river” in Japanese. Always up for a challenge, she challenges the limitations of weaving fiber on a loom.



Figure 13.63 Kay Sekimachi (American, 1926-), *Nagare VII* (and detail), 6 layers of woven nylon monofilament, 80 x 9 x 9 in / 203.2 x 22.8 x 22.8 cm, 1970 (Smithsonian American Art Museum). https://americanart.si.edu/artwork/nagare-vii-22123

Lenore Tawney's (1907-2007) studies under artists Moholy-Nagy and Alexander Archipenko and extensive travel profoundly influenced her work. Living and working in New York City at a time when abstract expressionism was the dominant art style greatly influenced the composition of *Waters Above the Firmament* (Figure 13.64). Like Mark Rothko's large, meditative paintings, the bold circle within a square is contemplative. Tawny wove the warp-faced slit tapestry strips with multiple wefts, then attached torn painted paper over the top half.

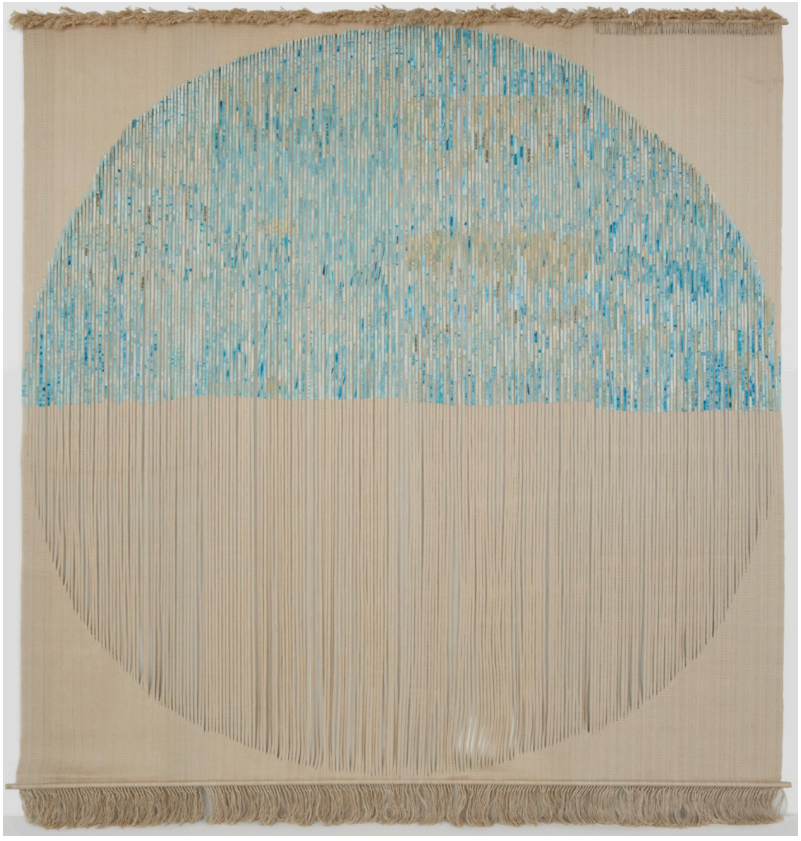

Figure 13.64a Lenore Tawney (American 1907-2007), *Waters Above the Firmament*, warp-faced weft-ribbed linen **plain weave** with **discontinuous wefts**, 18th / 19th century manuscript pages cut into strips, attached, and painted with Liquitex acrylic paint, braided, knotted, and cut warp fringe, 156 ½ x 145 ¼ in / 397.6 x 369 cm, New York, 1976 (Art Institute of Chicago, H. L. and Mary T. Adams, Harriott A. Fox, and Mrs. Siegfried G. Schmidt Endowments; purchased with funds provided by Laurance H. Armour, Jr. and Margot G. Armour Family Foundation, Mrs. William G. Swartchild, Jr., Joan Rosenberg, Joseph W. Fell, and the Textile Society, © Lenore G. Tawney Foundation).
https://www.artic.edu/artworks/109686/waters-above-the-firmament

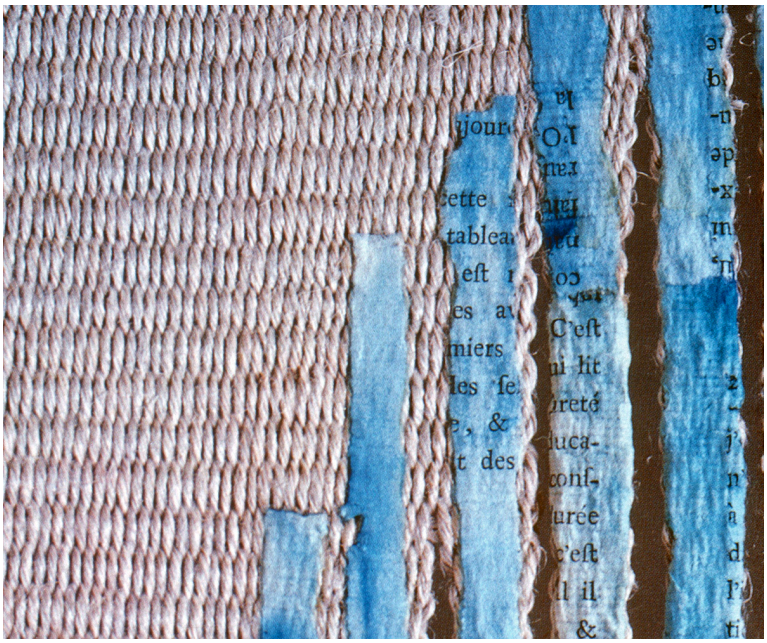

Figure 13.64b Lenore Tawney (American 1907-2007), detail of *Waters Above the Firmament*, warp-faced weft-ribbed linen plain weave with discontinuous wefts, 18th / 19th century manuscript pages cut into strips, attached, and painted with Liquitex acrylic paint, braided, knotted, and cut warp fringe, New York, 1976 (Art Institute of Chicago, H. L. and Mary T. Adams, Harriott A. Fox, and Mrs. Siegfried G. Schmidt Endowments; purchased with funds provided by Laurance H. Armour, Jr. and Margot G. Armour Family Foundation, Mrs. William G. Swartchild, Jr., Joan Rosenberg, Joseph W. Fell, and the Textile Society, © Lenore G. Tawney Foundation). https://www.artic.edu/artworks/109686/waters-above-the-firmament

Archie Brennan (1931-2019) wove his eclectic tapestries on an upright loom, facing the finished side as he wove the image from bottom to top. Inspired by historical tapestries and Pop Art, the subject of his work often commented on popular culture (Figure 13.65). Brennan's enthusiasm for the **medium**, creative energy, leadership in the field, and charismatic teaching helped revive interest in tapestry **weaving.**



Figure 13.65 Archie Brennan (Scottish, 1931-2019), *Muhammad Ali*, tapestry woven, 10 x 30 in / 25.4 x 76.2 cm, Edinburgh, Scotland, 1973. https://museumcrush.org/archie-brennan-forgotten-pop-artist-celebrated-weaver/

The tapestries of Jon Eric Riis (1945-) often address social and political issues. His tapestry-woven coat series was inspired by traditional T-shaped Chinese court robes. *Greed* (Figure 13.66) opens to what appears to be a blood-soaked interior that features a $100 bill surrounded by Swarovski crystals, linking war with profit. https://jonericriis-studio.com/



Figure 13.66a Jon Eric Riis (American, 1945-), *Greed*, tapestry-woven metalized polyester coated threads, glass beads, and Swarovski crystals, 31

¼ x 68 x 3 in / 79.38 x 172.72 x 7.62 cm, 2005 (Indianapolis Museum of Art, © Jon Eric Riis).
https://collections.discovernewfields.org/art/artwork/70119



Figure 13.66b Jon Eric Riis (American, 1945-), *Greed* detail, tapestry-woven metalized polyester coated threads, glass beads, and Swarovski crystals, 2005 (Indianapolis Museum of Art, © Jon Eric Riis).
https://collections.discovernewfields.org/art/artwork/70119

Lia Cook (1942-) was trained as a painter but turned to weaving to better integrate images and structure. Her innovative early work explored textiles as subject and object by combining both interests. *Shadow Frieze* (Figure 13.67) began as an acrylic painting of drapery on a sheet of heavy abaca paper. Cook cut it into thin strips, then inserted them into painted rayon warp on a 32-harness dobby loom to produce a cloth with diamond motifs. The fabric was cut off the loom, soaked in water, then run through an etching press to flatten and integrate the imagery. The shimmering colors and reflective quality of the rayon provide a feeling of motion.

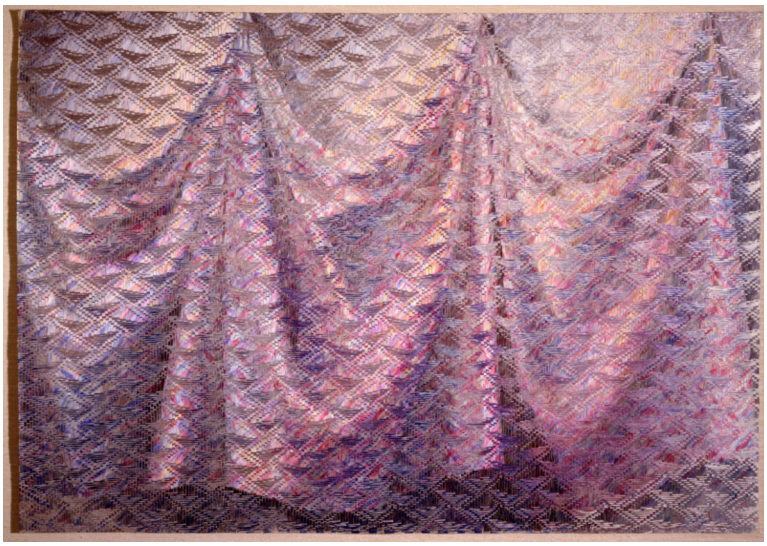

Figure 13.67 Lia Cook (American, 1942-), *Shadow Frieze*, painted, **dyed**, and pressed rayon and abaca woven on a dobby handloom, 48 5/8 x 69 3/8 in / 123.5 x 176.2 cm, 1990 (Fine Arts Museums of San Francisco, Partial gift of Dorothy and George Saxe to the Fine Arts Museums Foundation). https://www.famsf.org/artworks/shadow-frieze

Cook's more recent work was inspired by her collaboration with neuroscientists, who helped her see the connection between textiles, emotion, and the brain. *Mona Lia* (Figure 13.68), woven on Cook's TC1 digital handloom, merges her self-portrait with her own colorful brain scan imagery. She combines weaving with painting, photography, video and digital technology. She explores the sensuality of the woven image and the emotional connections of touch.

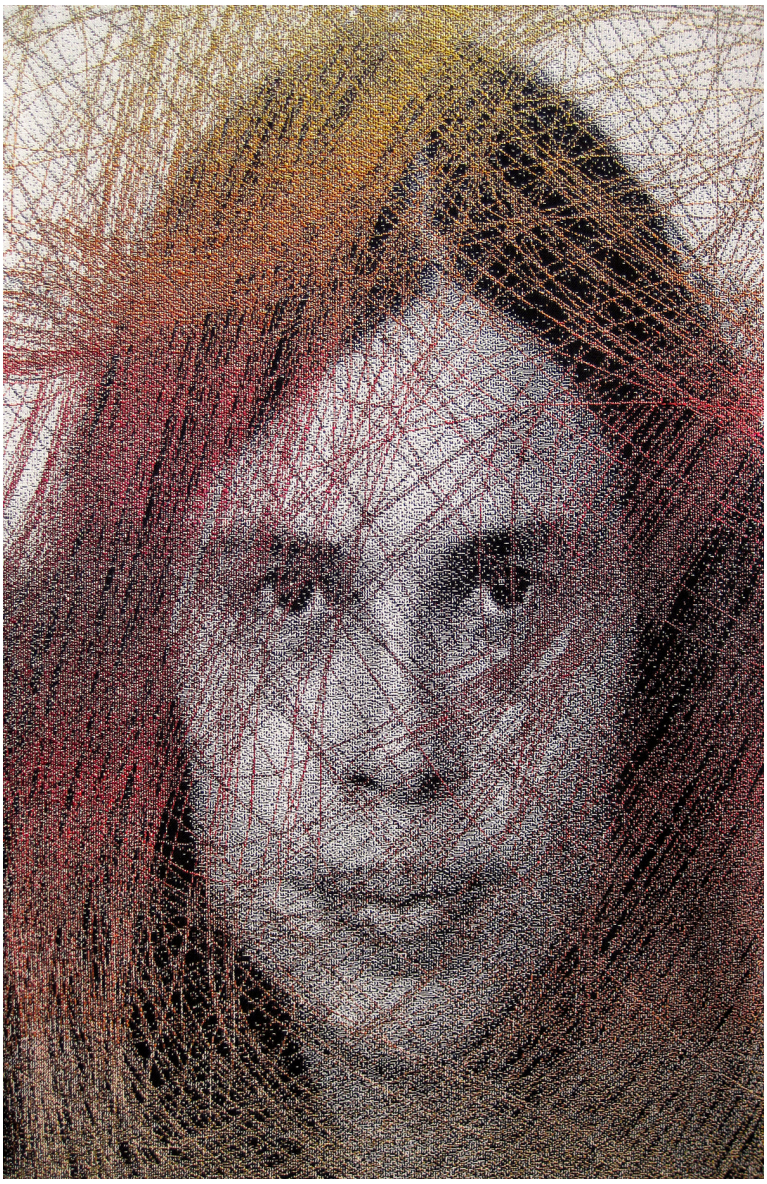

Figure 13.68 Lia Cook (American, 1942-), *Mona Lia*, cotton warp and rayon weft woven on a TC1 digital handloom, 83 x 51 in / 210.82 x 129.54 cm, 2012 (Honolulu Museum of Art, photograph courtesy of Lia Cook). https://www.liacook.com/

The development of electronic **Jacquard looms** revolutionized weaving in the 1970s. Instead of punched cards (Figure 12.13), a computer controls the warp threads. In a workshop led by Cathryn Amidei, the author wove a self-portrait with black warp and white weft on a Thread Controller 2nd generation (TC2) handloom that used a laptop to control the vacuum lift **heddles** (Figure 13.69a).



Figure 13.69a TC2 loom with woven fabric, shuttle, pedal, and laptop (photograph by Carol Ventura, 2017).

To weave fabric on a TC2, a photograph or drawing is prepared with special software. Colors are reduced (Figure 13.69b), then weaving patterns without "**floats**" (long threads) are chosen to replace the colors (Figure 13.69c).

A foot petal is pressed to lift the appropriate warp threads of each **shed** for the weft **shuttle** to pass through. The image on the screen of the laptop marks the progress of the weaving.



Figure 13.69b Photograph with reduced color levels (photograph by Carol Ventura, 2017).



Figure 13.69c Digital pattern template of the portrait (photograph by Carol Ventura, 2017).



Figure 13.69d Detail of the self-portrait woven on a TC2 loom (photograph by Carol Ventura, 2017).

Michael James' (1949-) incredible fabric "paintings," publications, and teaching helped found the art **quilt** movement in the 1970s and continue to inspire people around the world. Abstract American quilts lured him away from painting and printmaking and the fact that he could work at home away from toxic paint and printmaking chemicals appealed to him.

Quilts are a sandwich of two fabrics with a fluffy filling, secured together with stitches. The top layer is composed of numerous pieces sewn together (Figure 9.15f). Originally used as blankets, they were historically made with fabric scraps and / or salvageable parts of used clothing. Today they are usually crafted with new materials and hung on walls.

James machine-sews thin strips of commercial cotton and silk fabric together to form long colorful strips, then combines the strips to create dramatic compositions (Figure 13.70). He does not use preliminary drawings but lets the work evolve in its own natural way, sometimes with surprising results. https://michaeljamesstudioquilts.com/

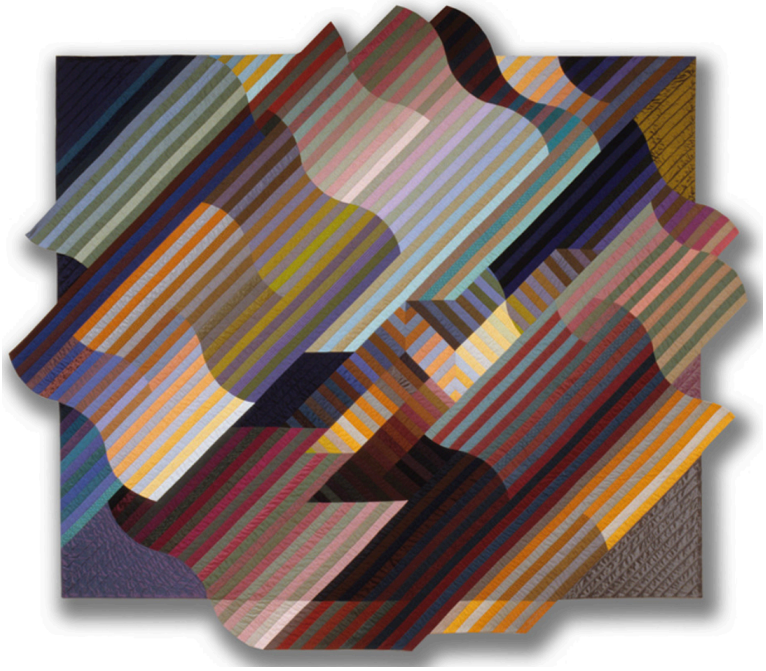

Figure 13.70 Michael James (United States, 1949-), *Waves II: Storm Surge*, 91 x 104 in / 231.14 x 264.16 cm, machine quilted cotton and silk, 1988. Object credit: Museum of Arts and Design, New York; gift of the artist, 1993 Photo credit: Photo by David Caras (MAD does not know the origin of the photo)
https://collections.madmuseum.org/objects/3309/waves-2-storm-surge?ctx=be1ab53c13edf03a0c2def0ccb835e44f565a68a&idx=0

Faith Ringgold (1930-) has been a politically active artist since the 1960s. Inspired by her experiences as a black female artist in a white man's world, Ringgold's "story quilts" combine social commentary, painting, and sewing.

Bitternest Part II: Harlem Renaissance Party (Figure 13.71) developed from a performance that cast Ringgold as Cece, a young woman living in Harlem during the 1920s. Cece stands at the head of the table surrounded by leaders of the Harlem Renaissance, including Alain Locke, Countee Cullen, Langston Hughes, Aaron Douglas, Josephine Baker, and Zora Neale Hurston. Ringgold's quilts were among the first to be exhibited alongside paintings and sculptures in major art museums. https://faithringgold.com/



Figure 13.71 Faith Ringgold (American, 1930-), *Bitternest Part II: Harlem Renaissance Party*, acrylic on canvas with printed, dyed and pieced border, 94 x 83 in / 238.8 x 210.8 cm, 1988 (Smithsonian American Art Museum, Museum Purchase). https://americanart.si.edu/artwork/bitter-nest-part-ii-harlem-renaissance-party-35621

To reflect their African heritage, Bisa Butler (American, 1973-) crafts her dignified life-sized portraits with West African wax-printed fabrics, kente cloth, and Dutch wax prints. Butler's quilt in Figure 13.72 features Frederick Douglass (1818–1895), an escaped slave who became an influential orator, writer, and abolitionist. The title of the portrait is a line from his July 5, 1852, speech that addresses what July 4th means to slaves, ". . . We need the storm, the whirlwind, and the earthquake . . . the hypocrisy of the nation must be exposed; and its crimes against God and man must be proclaimed and denounced . . ."



Figure 13.72 Bisa Butler (American, 1973-), *The Storm, the Whirlwind, and the Earthquake*, cotton, silk, wool, and **velvet** quilted and applique, 93 x 54 x 3/8 in / 236.2 x 137.2 x 1 cm, Brooklyn, New York, 2020 (Toledo Museum of Art, Purchased with funds from the Florence Scott Libbey Bequest in Memory of her Father, Maurice A. Scott). http://emuseum.toledomuseum.org/objects/78984/the-storm-the-whirlwind-and-the-earthquake?ctx=87d9c348-4894-4f8c-87c2-6dd35c85721a&idx=0

The thought-provoking work of Yinka Shonibare (1962-) explores colonialism and post-colonialism by setting up headless mannequins

dressed in period European fashions made from the colorful Dutch wax fabric that was produced in Europe for a West African market (Figure 13.73). https://yinkashonibare.com/



Figure 13.73 Yinka Shonibare (Nigerian-British, 1962-), *How to Blow up Two Heads at Once (Ladies)*, each figure is 63 x 61 x 48 in / fiberglass mannequins, guns, Dutch wax printed cotton, shoes, leather riding boots, 2006 (Davis Museum and Cultural Center, Wellesley College, MA, Museum purchase with funds provided by Wellesley College Friends of Art). https://davis.emuseum.com/objects/10345/how-to-blow-up-two-heads-at-once-ladies?ctx=82267fc4b572526b1d674ffd3a939c82cd7ac412&idx=7#

John McQueen (1943-) is an innovative basket-maker and sculptor. Appropriately, he calls himself a "maker." McQueen gathers his materials locally in New York State, where he lives. McQueen constructed the basket in Figure 13.74 in the field while he was collecting the bristly burdock seed pods. His baskets often include bark and bug marks to show that they were once alive.

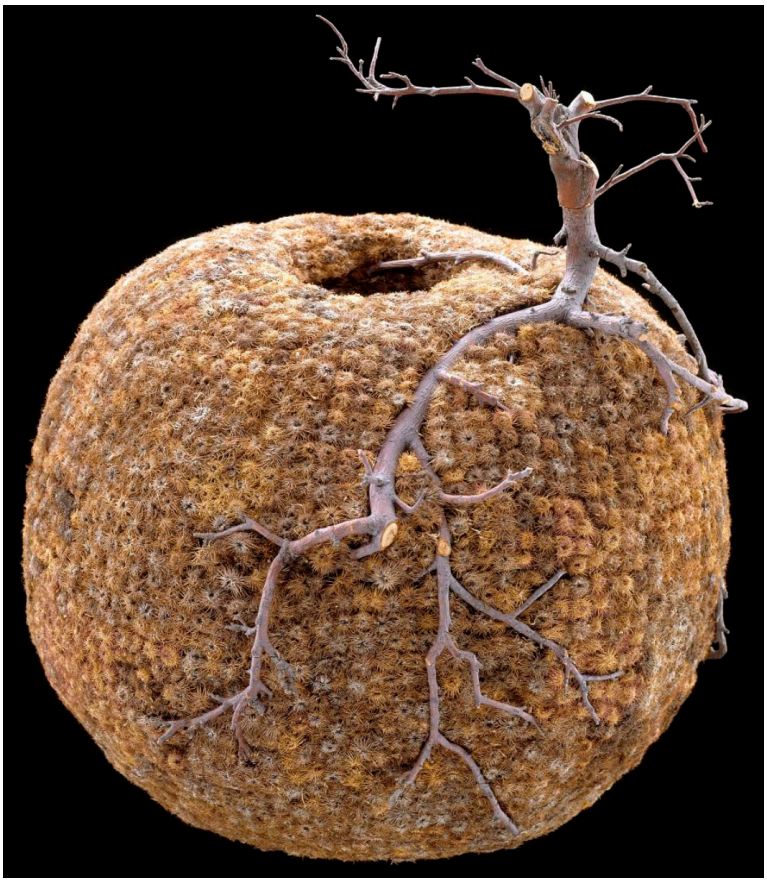

Figure 13.74 John McQueen (American, 1943-), *Untitled #192*, burdock burrs and apple wood, 22 ¼ x 18 x 20 ¾ in / 56.6 x 45.8 x 52.8 cm, 1989 (Smithsonian American Art Museum, Gift of the James Renwick Alliance, © John McQueen). https://americanart.si.edu/artwork/untitled-192-33596

John McQueen's *Four Food Groups* (Figure 13.75) was inspired by dreams about a world where plants have taken over the wastelands of the industrial world and structures are built of sticks held together by twine. This piece appeared in several of his dreams.

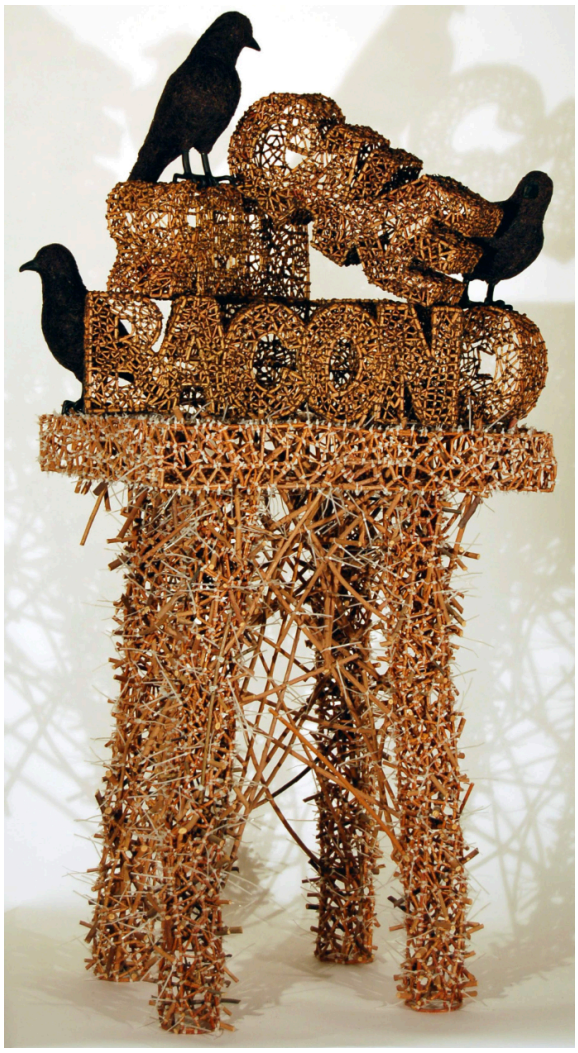

Figure 13.75 John McQueen (American, 1943-), *Four Food Groups,* sticks, string, bundle ties, and hot glue, 70 x 28 x 25 in / 177.8 x 71.12 x 63.5 cm, 2006 (Burchfield Penney Art Center, Buffalo, Purchased with funds from Nancy Belfer and the Art Endowment Fund, 2006). https://burchfieldpenney.org/art-and-artists/artwork/object:2006-017-000-the-four-food-groups/

Norma Minkowitz (1937-) explores line with her thought-provoking drawings and translucent **crocheted** sculptures. She began *Bird Lady* (Figure 13.76) at the top, single crocheting in a spiral around an altered mannequin, increasing stitches to make the fabric expand or skipping them to make it contract. Minkowitz stiffened the finished fabric, cut it to remove the inner support, then camouflaged the seam. http://www.normaminkowitz.com/



Figure 13.76 Norma Minkowitz (American 1937-), *Bird Lady*, crocheted and stiffened cotton thread, 26 ¼ x 12 ½ x 11 in / 66.7 x 31.8 x 27.9 cm, 1993 (de Young / Legion of Honor, Fine Arts Museums of San Francisco, Gift of Sylvia Elsesser). https://www.famsf.org/artworks/bird-lady

Crochet is done with a hook that pulls a loop of fiber through another loop or loops to produce stitches that combine to create fabric (Figure 13.77a). Depending on the type and tightness of the stiches, the result may be solid as woven cloth or open and lacelike (Figure 13.77b).



Figure 13.77a Bead tapestry crochet stitch (photograph by Carol Ventura, 2006).



Figure 13.77b…Crocheted clothing and accessories for sale in Bali, Indonesia, 2007 (photograph by Carol Ventura, 2007).

The earliest reliable references date crochet's origins to the early 1800s, but it might have developed earlier. Looped and knit fabrics are sometimes confused with crocheted fabrics, especially when the stitches are tight. The author suspects that tapestry crochet evolved from **looping** (Figure 13.77c), a much older technique. Looping is time consuming to produce because the entire strand of fiber needs to be pulled all the way through each loop. With crochet, only a small loop is pulled through another loop to create a stitch.

Looped fabrics are less likely to unravel when cut, though, so it is still done today in places like Guatemala.



Figure 13.77c Bag and detail, looped sisal, Guatemala, 1978 (Carol Ventura Collection, photograph by Carol Ventura).

The author tapestry crocheted *Your Choice* (Figure 13.78) with four colored threads (each loaded with one bead color) in a spiral that moved from the center of the bottom outward and upwards towards the rim, like the spiral of life. Switching threads back and forth while placing a bead behind each stitch created the contrasting imagery on the inside and outside. Black and red beads along the rim spell out CV2024 in binary. The author **lost-wax cast** her hand in bronze.

The black words, swastikas, and beads symbolize evil. The brilliant red beads on the inside of the basket represent love, while the drab red thread on the outside is the color of blood. We cannot control everything that life presents, but every choice we make has benefits and consequences. It is your choice to choose a path of love or hate. https://www.tapestrycrochet.com/



Figure 13.78 Carol Ventura, *Your Choice,* lost wax cast bronze hand and tapestry crochet cotton with glass beads, 8 x 8 x 9 in / 20.32 x 20.32 x 22.86 cm, 2024 (Carol Ventura Collection, photograph by Carol Ventura, 2025).

This journey through time and place featured a variety of innovative craftspeople, artists, and designers working with clay, fiber, glass, metal, and wood. Some built on traditions, others rebelled against them, and many blurred the indistinguishable line between craft and art. Hopefully, this survey has inspired, liberated, and empowered the craftsperson, artist, and designer within you to continue the adventure.

Bold Text Glossary

Adinkra – Cloth from Ghana hand-printed with symbolic motifs.
Adire – Yoruba cloth that is resist-dyed in indigo from Nigeria.
Agave / Maguey / Sisal – Bast fiber extracted from the pointed leaves of large succulents native to the Americas.
Albarello – Cylindrical ceramic jar used to store drugs and medicinal ingredients.

Alloy – Two or more metals mixed together while molten.
Amate / Bark "Paper" – Paper-like material made in Mexico by macerating, cooking, then beating the inner bark of certain trees.
Amphora – Double-handled ceramic vessel used to store wine and oil.
Annealer – A kiln used to slowly cool glass.
Anneal (glass) – To cool finished hot-worked glass slowly in a kiln so that the thick and thin parts cool at the same rate to prevent stresses within the glass.
Anneal (metal) – Metal is heated, then cooled to make it more pliable.
Anvil / Stake – A tool used to support metal during raising. Usually made of hard steel, stakes come in a variety of shapes and sizes.
Art Glass – Glass that is decorative and often functional.
Asymmetrical / Persian Knot – Used to create pile in rugs. The right and left sides of the knot are not the same.
Attica / Attic – The region around Athens, Greece.
Backstrap Loom –Warp is tensioned between a stationary object and the weaver's body on this loom.
Barkcloth / Tapa – Fabric made by pounding the inner bark of suitable vines, shrubs, and trees to the desired width and length.
Basse-Taille Enamel – French for "shallow cut." Low relief on metal covered with translucent glass enamel.
Bast – Fiber extracted from the stem of a plant or the inner bark of a tree.
Batik – Wax resist is applied to select areas, then removed after the fabric has been dyed.
Bentwood Lamination – Thin strips of wood are glued, joined together, then clamped to a curved form to produce a strong, curvilinear piece.
Bezel – Rim that holds a cabochon or other media in place.
Bisque / Biscuit – Fired unglazed ceramic that is durable, but absorbent enough for glaze application.
Bit Work – Molten glass sculpted and/or added to other hot glass.
Black Figure – Greek Archaic and Classical terracotta ware that features large black figures on a red background.
Blacksmith – A metalsmith who forges and shapes hot iron and steel.
Blowpipe – Hollow metal tube used for blowing air.
Bobbin Lace – Threads wound around bobbins are moved back and forth around pins (stuck into a pattern mounted on a pillow) to form an

open fabric.

Bombé – The "blown out" shape of 17th century French Louis XIV Rococo style furniture.

Bone China – A type of white, translucent porcelain containing a high percentage of bone ash.

Boulle Work – Sixteenth, seventeenth, and eighteenth-century marquetry technique using metal (often brass or pewter), wood veneer, and/or tortoise shell; perfected by André-Charles Boulle (1642-1732), the French cabinetmaker of Louis XIV.

Box Joint – Two pieces joined together with interlocking "fingers" cut at right angles.

Bow Drill – A drilling tool consisting of a bow and string.

Brass – An alloy of copper and zinc, sometimes with other trace elements.

Brooch – A woman's ornament worn pinned to clothing at or near her neck.

Brocade – Cloth with decorative discontinuous supplementary weft. The extra weft is inserted into part of the textile as it is woven.

Bronze – An alloy of around 9 parts copper and 1 part tin, sometimes with other trace elements. Bronze is harder than copper and melts at 1742°F / 950°C, a lower temperature than copper.

Burnish – To rub the surface with a hard, smooth object.

Butt Joint – Two pieces joined together along their edges either on the same plane or at a right angle.

Cabochon – Semiprecious stone with a curved, convex face and flat back.

Cage Cup – Roman glass vessel that incorporates an intricately carved free-standing outer layer of glass.

Camelid – Fiber from alpaca, llama, and vicuña used to produce fabrics.

Cameo – Stone, shell, glass, or ceramic with multicolored layers whose top has been selectively removed to create a relief that contrasts in color with the background.

Canting – Batik tool used to draw lines and dots of molten wax resist onto fabric.

Cap – Copper block batik tool used to apply patterns of molten wax resist onto fabric.

Carcass – The framework of a piece of furniture.

Card Weaving / Tablet Weaving – Individual warp threads are inserted into holes punched into the corners of sturdy cards. The warp is

tensioned, then one or more cards are turned to produce the various sheds for the weft to pass through to weave narrow bands of patterned warp faced fabric.

Carnelian – A brownish-red semi-precious stone.

Cartoon – A full-scale preparatory drawing.

Carve – Cutting into a surface to create a pattern.

Cased glass – Glass composed of differently colored glass layers fused together with heat.

Cassapanca – Long wooden Italian bench with a back, sides, and hinged seat that opens for storage, popular during the Renaissance.

Cassone – Carved wooden Italian marriage chest with a hinged lid, popular during the Renaissance.

Casting – The process of filling a hollow mold with molten or flexible media. Once the medium solidifies, the mold is removed to produce the product, called a cast.

Celadon – Greenish high fired stoneware and porcelain glaze of Chinese origin.

Ceramic / Pottery – Clay that has been fired to maturity.

Ceramist / Potter – A person who makes functional and/or non-functional objects with clay.

Champlevé Enamel –French for "to gouge out," recesses in metal filled with opaque or translucent glass enamel.

Chasing – Hammering metal punches into the front side of metal to create or refine textured decorations. Often used in conjunction with repoussé to create a relief.

Chasuble – An ornate sleeveless outer vestment worn by some Christian priests when celebrating Mass.

China Clay / Kaolin – White firing clay that is the essential ingredient of hard paste porcelain.

China Paint / Enamel – A colorful low-fired overglaze.

Chiton – A loosely fitting rectangular linen garment worn in ancient times by Greek men and women.

Chintz – Cotton cloth printed or painted with floral patterns in India.

Cloisonné Enamel – Cloison is French for "cell." Compartments formed by thin metal bands on a metal base filled with opaque or translucent

glass enamel. The exposed tops of the bands add a linear element to the design.

Coil Building (clay) – Clay is squeezed and rolled into long, slender cylinders that are joined together in a spiral, then the joints are smoothed over.

Coil Building (basketry) – A flexible material is wrapped around a core and connected to its neighbor to form a spiraling structure.

Colloidal Fusion Welding / Colloidal Hard Soldering – A mixture of an organic binder (like tragacanth gum) and copper salts is painted where two pieces of metal meet. The piece is then heated to 1634°F / 890°C in a reducing atmosphere, which allows the copper to diffuse into both pieces at the point of contact. No solder is used, so "Colloidal Fusion Welding" is the correct term.

Combing – Manipulating bands of color on the surface of clay or glass with a pointed tool.

Compound Weave – Has more than one set of warp and weft elements, manipulated individually for weaving a patterned textile.

Copper – A reddish-brown colored metal that melts at (1984°F / 1085°C).

Core-Formed Glass – A mixture of clay, sand, and dung was shaped and attached to the end of a metal rod. The dry core was heated, coated with glass, then shaped by rolling on a smooth hard surface. After reheating, it was wrapped with strands of different colored hot glass, the rod and core were removed, then the glass was slowly cooled to produce a small striped vessel.

Cotton – Seed fiber of several *Gossypium* plants grown in shades of white, brown, and green.

Coverlet – Bedcover woven with a loom-controlled pattern.

Crochet – French for "hook." Interlooped fabric made with a hand-held hook.

Damascene – Soft metal inlaid with pressure into hard metal—usually gold, silver, brass, or copper forced into engraved depressions in steel, bronze, or nickel.

Damascus Steel / Wootz – Flattened iron is heated, folded, and forge-welded many times until hundreds of layers are formed. Carbon absorbed while heating converts the metal to wrought iron.

Damask – A monochrome reversible patterned textile made by weaving a single warp and weft together, using warp face and weft face satin

weaves to create the figure and ground.

Depletion Gilding and Silvering – An alloy of copper and gold or silver is bathed in acid to dissolve the copper on the surface, leaving an almost pure layer of gold or silver.

Diamond Point Engraving – Diamond tipped tool used to scratch decorations on the surface of glass.

Die – A mold made of metal, wood, or stone.

Die Forming – Method of shaping metal, plastic or other material into a relief by pressing it into a concave die or between a pair of convex and concave dies.

Ding – Container for cooking, serving and storing food items. When made of clay, they were used for daily cooking, serving, and storing food. Cast bronze dings (Figure 5.1) were used during elite feasting and ceremonies.

Discontinuous Weft – Does not extend across the textile from selvage to selvage.

Dovetail Joint – Two pieces joined together with interlocking "fingers" cut at slight angles.

Drawloom – A loom with harnesses to weave the ground and individual heddles that are raised by draw boy (assistant) to produce a textile with complex imagery.

Dye – Soluble natural or synthetic colorant that soaks into fiber.

Earthenware – Clay that matures at temperatures below 2100°F / 1150°C. This low fired porous ceramic is often glazed to make it more watertight.

Ebony – Very hard, black or extremely dark colored fine-grained wood.

Egyptian Paste / Egyptian Faience – Mixture of ground quartz or sand and natron (a naturally occurring mixture of sodium carbonate and sodium bicarbonate found on dried-out salt lakes in the Nile Delta) that is mixed, molded, dried, and fired. At around 1600°F / 870°C, some of the carbonate migrates to the surface and forms a glaze. Copper, manganese, or iron oxides are added to produce blue or black. It is sometimes used to glaze stone.

Electroforming – Electrodes are attached to source metal and an object (coated with a metallic surface) in the same electrolytic bath, then a

low-voltage current dissolves the source metal to deposit a thick layer on the other piece.

Electroplating – Electrodes are attached to source metal and an object (coated with a metallic surface) in the same electrolytic bath, then a low-voltage current dissolves the source metal to deposit a thin layer on the other piece.

Electrum – Naturally occurring alloy of gold and silver.

Embossing – A soft sheet of metal is placed onto leather (or another yielding surface) or over a mold, then the metal is rubbed with a tool to create a raised line or shape on the other side.

Embroidery – Decorative stitches usually applied to fabric with a threaded needle.

Enamel – Glass fused to the surface of glass or metal with heat.

Enamel / China Paint – In ceramics, it is a colorful overglaze that matures at a relatively low temperature.

Engobe – A clay slip that may be applied before or after bisque firing.

Engrave – To remove part of a surface with a sharp tool or rotating abrasive disk.

Etch – To remove part of a surface with acid.

Ewer – A vessel to hold and pour a liquid, like water or wine.

Fabric – From the Latin word, “fabricare,” to fabricate. Many construction techniques can produce fabric, including bobbin lace, crochet, knitting, needle lace, weaving, etc.

False-Filigree – Thin wax threads are used to create a piece that is transformed into metal through the lost-wax process. These cast pieces are often confused with the fine soldered wirework of true filigree.

Faience (vitreous) – Crushed quartz core covered with ceramic glaze.

Fiber – Plant, animal, or synthetic material capable of being spun into thread or yarn.

Fibula / Fibulae – A decorative Roman or Medieval pin (like a large safety pin) used to fasten clothing.

Filigree – Open or backed delicate pattern made with fine metal wires.

Firing / Fire – Heating clay until it matures and transforms into a hard ceramic.

Fire Gilding / Mercury Gilding – Technique used to deposit a thin layer of gold or silver on the surface of another metal. A mixture of mercury and gold or silver was applied then heated until the mercury evaporated, leaving only the precious metal.

Flamework / Lampwork – Glass worked with a torch.

Flashed Glass – A clear or tinted piece of glass fused to one or more thin layers of colored glass.

Flax – The stem of this plant is processed to produce fiber to make linen.

Float – A warp or weft thread that passes unbound over or under two or more of the opposite elements.

Flux (clay and glass) – Ingredient that lowers the melting temperature.

Flux (metal) – Applied to metal components to be joined together to prevent oxidation during fusing, soldering, and welding. Clean surfaces are essential during these processes. Different fluxes are used with different metals.

Foot Loom / Treadle Loom – Foot-operated harnesses control the warp while weaving a textile.

Forge – A blacksmith's workshop. A furnace used to heat metal with solid or gas fuel.

Forge Welding – Hammering together two or more fluxed pieces of metal heated to just below the melting temperature.

Forging / Forged – Forming or shaping cold or hot metal by placing it against a hard surface, then stretching or compressing it with a hammer or press.

Furnace – An oven / kiln that can achieve the high temperatures needed to melt glass or metal.

Fuse / Fusing (glass and metal) – Two or more materials joined together or melted together with heat.

Gaffer – The glassblower who does the most critical steps when working glass on a blowpipe or pontil.

Gather – In glassblowing, the blob of molten glass on the end of the pipe.

Ghiordes / Turkish / Symmetrical Knot – Used to create pile in rugs; the right and left sides of the knot are the same.

Gilding / Gilded – Applying a very thin layer of gold or silver to the surface of an object. Techniques vary, according to the medium (see Depletion Gilding, Leaf, Luster, and Mercury Gilding).

Glass – Made by melting together silica (sand or crushed quartz), flux (soda ash), and a stabilizer (lime) at temperatures around 2400°F / 1316°C. It is worked cold (room temperature), warm (around 1251°F / 677°C), and hot (2000°F / 1093°C).

Glassblowing – Air is blown through the mouthpiece of a hollow metal blowpipe to inflate a bubble of molten glass on the other end.

Glass Cane – A slender rod of glass.

Glaze – A glassy mixture applied to the surface of clay, then fired. Various ingredients determine the color and melting temperature and whether it will be glossy, matte, or clear.

Gold – A lustrous yellow metal that does not easily corrode. Pure gold is expensive and soft, so it is often mixed with another metal to make it less expensive and more durable. The final color of the alloy depends on the type and quantity of metal added; the most popular being yellow, white, pink, and green.

Granulation – A small piece of gold or silver is heated until it melts and forms a ball, then it is cooled. Multiple balls are arranged in a decorative pattern on another piece of metal, then heated to fuse them to the surface without solder.

Greenware – Dry clay object before it has been fired.

Handbuilding – Forming clay by hand without the use of a potter's wheel.

Hard-Paste – European term for true porcelain.

Harness / Shaft – A frame that holds a group of heddles on a loom.

Heddle – A warp thread is held by a heddle on a loom. Heddles are moved up and down to weave cloth.

High Fired – Kiln temperatures between 2192°F / 1200°C and 2552°F / 1400°C used to mature stoneware and porcelain.

Huipil – A traditional blouse worn by Indigenous women in Guatemala and Mexico made with one or more pieces of fabric joined together into a rectangular shape then folded in half with a head opening in the center. The sides are usually sewn together, leaving openings for the arms.

Hydria – A three-handled Greek vessel used to hold water.

Ikat / Kasuri / Jaspe – Sections of warp and/or weft are wrapped to resist dye. The wrapping is removed after the thread has been dyed, then the threads are woven to produce a patterned cloth.

Interlace – Decorative, intertwined linear elements.

Intarsia / Inlay – From Italian for inlay, “intarsiare,” some of the surface is removed, then filled with decorative stone, wood, ivory, metal, shell, etc.

Iron – A gray hard metal that turns melts at 2800°F / 1538°C.

“Istoriato” – The Italian word for “history,” features colorful figurative scenes painted with glaze onto 16th century Italian ceramics.

Ivory – From animal teeth and tusks; elephant ivory being the most common.

Jacquard Loom – Invented by Jacquard in 1804, a mechanized loom with ground cloth harnesses and punched cards that control individual warp heddles for producing textiles with complex imagery.

Kaolin / China Clay – Essential high fire clay ingredient of porcelain.

Kente – Strip cloth woven in Ghana.

Kilim / Kelim – A sturdy weft faced slit tapestry woven from Eastern Europe.

Kiln – An insulated chamber that is heated to fire clay or to fuse, slump, or cast glass.

Kline – Greek and Roman reclining couch or bed.

Klismos – A curvy wooden chair that developed in 5th century Greece; the back and front legs curve in the opposite direction.

Knit – Interlooped fabric made with a pair of hand-held knitting needles or a knitting machine.

Krater / Crater – Large Greek and Roman ceramic bowl, often with a tall foot.

Lamination – Several thin layers joined together.

Lampas – A double layered cloth with a reversible pattern that was first woven in 11th century Iran on a drawloom with two sets of warp and weft; each set of warp and weft of the same color.

Lampwork / Flamework – Glass worked with a torch.

Lapidary – Cutting and polishing precious and semi-precious stones.

Lapis Lazuli – A blue semi-precious stone mined in Afghanistan for more than eight thousand years.

Lathe – Machine that rotates a workpiece on a horizontal axis.

Leaded Glass – Clear pieces of flat glass held together with strips of lead.

Leaf – A very thin piece of metal.

Leather-Hard – Clay that is dry enough to be stiff, but damp enough to work.

Lekythos – Slender Greek ceramic vessel used to hold oils and perfumes.

Linen – Fiber and fabric made from flax.

Loom – Weaving device that holds warp in sequence and under tension so that weft may be inserted to produce a textile.

Looping – A strand is crossed over itself, leaving an opening for the free end and full length to pass through.

Lost-Wax Casting – A wax model is covered with plaster or clay to create a mold. The mold is heated to melt out the wax, molten metal or glass is poured or melted into the cavity, then the mold is removed to reveal the casting.

Low Fired – Kiln temperature below 2100°F / 1150°C used to mature earthenware and overglaze.

Luster – Metal oxides painted onto the surface of cold glass or clay, then fired to create a metallic appearance.

Maiolica / Majolica / Faience – Earthenware with bright colors over a white tin-based opaque glaze; originally made to imitate porcelain.

Marquetry – Geometric patterns or pictorial compositions created with contrasting colors of veneer or other thin media fitted together and glued to the surface of a support.

Medium / Media (plural) – Raw material.

Mercury Gilding / Fire Gilding – Mercury is mixed with gold, then applied to the surface of a piece to be gilded. The object is heated to evaporate the mercury, leaving a thin layer of gold.

Mesoamerica – Geographical area bounded by Central Mexico in the north and Honduras and El Salvador in the south that was home to many Pre-Columbian people (including the Maya and Aztec) that shared cultural traits.

Mesopotamia – The valley between the Tigris and Euphrates rivers corresponding to modern-day Iraq, southwestern Iran, Kuwait, northeast Syria and southeastern Turkey.

Miter / Mitre – Joint formed by abutting two 45 degree-angled surfaces at right angles.

Mokumé Gane – Japanese metalworking technique; alternating layers of non-ferrous metals are forge-welded, then manipulated to create

patterns.

Mold – Negative impression that is used to replicate a positive three-dimensional form.

Mold-Blown Glass – Molten glass on a blowpipe is inserted into a mold, then inflated.

Mordant – French for “to bite,” it is used to fix dye to fabric. Mordants help dyes “bite” into cloth to keep the colors from washing out.

Mortise and Tenon Joint – Formed with a tongue (tenon) inserted into a hole of the same shape (mortise).

Mosaic Glass / Millefiori – Italian for “thousand flowers,” murrini or slices of a multicolored bundle of fused glass are placed closely together, then fused with heat to form a single piece.

Murrini – Small colorful glass cylinders and cubes made by cutting cross-sections of cane.

Needle Lace – Made by stitching with a needle and thread over a pattern.

Niello – Black inlay on metal made by filling depressions on metal with a mixture of ground silver, lead, copper, and sulphur. It is fused to the surface with heat, cooled, then polished.

Overglaze / Enamel – A colorful glaze that cannot be high fired is applied to the surface of a ceramic piece that has already been glazed and fired. The piece is then fired at a low temperature.

Oxidation – Firing with an oxygen-rich atmosphere.

Paper – Made with macerated pulp mixed with water, strained, and dried.

Papyrus – Laminated fabric made by slicing papyrus reed into strips, then aligning, layering, and pounding them together.

Parquetry / Parquet – Pieces of wood arranged in repeating geometric patterns on furniture or floors.

Pâte de Verre – French for “glass paste,” it is produced by pressing a mixture of glass granules, a binder and flux into a mold. The filled mold is left to dry, fused with heat, cooled, then cleaned.

Patina – Coloration that forms on a surface as it reacts to environmental elements.

Pectoral – A large ornament worn on the chest.

Penannular Brooch – Used to fasten clothing, it consists of a long sliding pin attached to a C-shaped metal ring.

Peplos – A long, rectangular woolen garment folded at the top and gathered at the waist, worn by Greek women.

Pigment – Insoluble coloring agent that adheres to the surface.

Pile – Decorative loops or tufts formed by hand-knotting or with supplementary warp that protrude above the surface of a textile.

Pithos / Pithoi (plural) – Large Minoan ceramic storage vessel(s).

Plain Weave / Tabby – A balanced weave made by passing a single weft over one then under one warp, reversing the sequence in each row. Both the warp and weft are visible on the finished cloth.

Plaiting – Diagonal interlacing of two or more elements, often used to produce baskets and fabrics.

Ply – Number of spun fibers twisted together.

Porcelain / Hard Paste – Ceramic developed in China that becomes vitreous, nonporous, white, and translucent when fired to between 2192°F / 1200°C and 2552°F / 1400°C.

Potter's Wheel – A disk on a vertical rotating shaft that enables a potter to form a cylindrical clay object with both hands.

Potter / Ceramist – A person who uses clay to make functional or non-functional objects.

Pottery / Ceramic – Clay that has been fired to maturity.

Press Molding Clay – Soft clay is pressed into a decorative mold.

Press Molding / Pressed Glass – Molten glass is poured into a patterned metal mold, followed by a plunger, to quickly forms a decorative glass object.

Punty / Pontil – Solid metal rod that supports the bottom of a molten glass piece after it has been removed from the blowpipe.

Quilt – A top fabric composed of many pieces is sewn to a backing fabric, usually with a layer of batting in between. Decorative stitches secure the layers.

Raising – A technique that transforms a flat sheet of metal into a three-dimensional form by hammering the surface into a hollow form or against an anvil or stake.

Raku – Originally a Japanese firing method; red-hot glazed ceramics are removed from the kiln and cooled quickly.

Red Figure Ware – Greek Classical Period terracotta that features large red figures on a black background.

Reduction – Firing with an oxygen-starved atmosphere.
Reliquary – Container for a relic.
Repoussé – Hammering or pressing into the reverse side of metal to shape the form or to raise the surface on the front. Often followed by chasing to refine the details. From the French word, “repousser,” which means, “to push back.”
Resist – Applied to a surface before glazing, printing, or dying to prevent absorption in the covered area.
Rhyton – Cylindrical drinking vessel that usually includes a sculpted head on the bottom.
Saggar – Ceramic container used to protect delicate clays and glazes in a kiln during firing.
Sagging / Slumping – Glass is placed over a mold in a kiln, then heated until the glass is flexible enough to collapse into / onto the mold.
Salt Glaze – Sodium chloride introduced into the kiln at its maximum temperature vaporizes and combines with silica on the surface of high fired clay to form a textured glaze.
Sandblasting – Sand is forcibly sprayed onto a surface to remove the outer layer.
Sarong – Traditional cloth worn wrapped around the lower body of Malay men and women.
Satin – Smooth, glossy textile with intermittent warp floats on one side and weft floats on the other side.
Sgraffito / Scraffito – From Italian “graffiare” (to scratch); a sharp tool cuts through an unfired layer of slip or glaze to reveal the contrasting clay below.
Selvedge / Selvage – Finished edge of a textile where the warp or weft turns around.
Shard / Sherd – A broken piece of fired clay.
Shed – Temporary opening created by raising or lowering select portions of warp for passage of the weft while weaving on a loom.
Shibori – Japanese resist dye technique for cloth using stitches, gathering, folding, binding, and/or twisting.
Shuttle – Holds the weft and passes it through the shed during weaving.
Silk – Strong protein filament produced by a silkworm while making its cocoon used to produce fabrics.

Silver – A lustrous white metal that tarnishes to black. Fine silver is 99.9% silver, but too soft for most applications. Sterling silver is alloyed with 7.5% copper to make it stronger.

Slab Building – Clay is rolled into a flat slab, cut, then joined together while still soft or leather-hard.

Slag – A glass-like by-product of smelting.

Slip – Fine clay suspended in water, sometimes colored, used for mold casting, for joining together pieces of clay, or for decorating damp clay surfaces.

Slow Wheel – Base with a moveable disk on top that is rotated by hand; used by a potter to produce symmetrical clay vessels. A stone example from Mesopotamia (dating to 3500 BCE) has a central shaft on the bottom that fits into a hole in the base. Another type, consisting of two convex ceramic disks placed curve to curve, is utilized in Coyotepec, Mexico, to make earthenware vessels.

Slumping / Sagging – Glass is placed over a mold in a kiln, then heated until the glass is flexible enough to collapse into / onto the mold.

Smelting – Extracting metal from ore in a furnace.

Soda Glaze – Sodium carbonate and water mixture sprayed into the hot kiln at the end of the firing vaporizes and combines with silica on the clay surface to form a glaze.

Soft Paste Porcelain – Low fired European white translucent ware made to imitate porcelain.

Solder – An alloy used to join hot metal together. Solder melts at a lower temperature than the metals it is uniting.

Songket – Brocade fabric hand woven in Indonesia (and some neighboring countries) with real or synthetic gold and silver threads on a silk, rayon, or cotton base cloth.

Spindle (fiber) – A notched shaft with a weight towards one end that is rotated to twist loose fiber, transforming it into yarn or thread. A drop spindle spins freely in the air.

Spindle Whorl – The circular weight placed towards the bottom of a spindle to help maintain momentum and keep the spun yarn from sliding off the bottom.

Spinning (fiber) – The process of twisting loose fibers together to produce a continuous strand.

Sprang – Warp is fixed at both ends and crossed over one another, twisting the top and bottom elements then securing the central part.

Sprig Mold – Mold made of fired clay, plaster, or other material, with a decorative concave surface. Damp clay is pressed into the mold then removed and attached to leather-hard clay.

Stained Glass – Colored and painted window glass held together with strips of metal.

Stake / Anvil – A tool used to support metal during raising. Usually made of hard steel, stakes come in a variety of shapes and sizes.

Stamping – A patterned punch or stamp is hammered into a surface to impress or print a decoration.

Steel – A gray-colored alloy of iron, carbon, and other elements.

Stippling – A pattern of dots that forms a picture.

Stoneware – Ceramic that developed in China that becomes vitreous, nonporous, and stone-like when fired between 2192°F / 1200°C and 2372°F / 1300°C in a kiln.

Supplementary Warp / Supplementary Weft – Non-structural warp or weft used to embellishment a textile during the weaving process. If this extra warp / weft is removed, the ground cloth is still intact.

Symmetrical / Ghiordes / Turkish Knot – Used to create pile in rugs; the right and left sides of the knot are the same.

Tabby / Plain Weave – Textile with a single weft passing over a single warp then under a single warp, reversing the sequence with each pass of the weft.

Tablet Weaving / Card Weaving – Individual warp threads are inserted into holes punched into the corners of sturdy cards. The warp is tensioned, then one or more cards are turned to produce the various sheds for the weft to pass through to create warp faced fabric.

Tapestry – Patterned textile of weft faced tabby or twill weave with multiple colors of discontinuous wefts.

Tapa / Barkcloth – Fabric made by pounding the inner bark of suitable vines, shrubs, and trees to the desired width and length.

Terracotta – Latin for “baked earth” so it is both the raw clay and fired clay. A type of porous earthenware that matures around 1000°F / 538°C. The high iron content lowers the melting temperature and colors the body red orange to brown.

Terra Sigillata – Glossy terracotta ceramic made by applying highly refined slip, then burnishing and polishing the slipped surface before firing.

Textile – From the Latin word, "texere," to weave, it specifically refers to cloth that has been woven on a loom. Although all textiles are fabrics, the reverse is not true.

Throwing – Clay is centered on the head of a spinning potter's wheel, then formed by hand.

Torc – A metal neck ring with a front opening worn by high-ranking tribal men in Europe from the 8th century BCE through the 3rd century CE.

Treadle Loom / Foot Loom – Foot-operated harnesses / shafts control the warp while weaving a textile.

Turkish / Ghiordes / Symmetrical Knot – Used to create pile in rugs; the right and left sides of the knot are the same.

Twill Weave – Textile with diagonally aligned floats, formed by passing the weft over two or more warp elements, then under one or more warp elements in sequence, moving over one or more warp elements with each pass.

Twining – Two or more wefts pass in front and behind warp and then twist together between the warp to produce a basket or fabric.

Underglaze – Colorful oxides applied to clay, then covered with a transparent glaze.

Velvet – As it is being woven, wires are inserted into the open shed to form loops of supplementary warp over all or part of the surface of a fabric. Cut velvet is produced by cutting the loops before removing the wire.

Veneer – Thin slices of decorative wood glued to the surface of less expensive, more stable wood.

Vitrify – Transform into glass.

Vitreous – Glass like and not porous.

Volute – A spiral or "S" curved ornament.

Wabi-Sabi – Japanese aesthetic of imperfection.

Warp – Lengthwise elements held in tension on a loom.

Warp Faced – Warp placed close together to mostly or completely cover the weft of the textile.

Washi – Hand-made Japanese paper.

Wax resist – a protective layer of wax is applied to protect a cloth, ceramic, or other material, from being dyed, glazed, or painted. The original surface is revealed when the wax is removed.

Weaving – Interlacing warp and weft elements at right angles to each other to produce a textile.

Wedging Clay – Kneading or pounding clay until it has a uniform consistency and air pockets have been removed.

Weft – Crosswise elements inserted over and under the warp to produce a textile.

Weft Faced – Weft placed close together to mostly or completely cover the warp of the textile.

Woodturning – Cutting wood on a horizontal axis while it is spinning on a lathe.

Wool – Protein fiber shorn from sheep used to produce fabrics.

Bibliography

Adams, Blair, *Craft: The Art of Work,* Austin: Colloquium Press, 1996.

Adams, Elizabeth Bryding, *The Dwight and Lucille Beeson Wedgwood Collection at the Birmingham Museum of Art,* Birmingham, AL: Birmingham Museum of Art, 1992.

Adamson, Glenn, editor, reprint, *The Craft Reader,* London: Bloomsbury Visual Arts, 2010/2019.

_____, *Thinking Through Craft,* London: Bloomsbury Visual Arts, 2007/2020.

_____, *The Invention of Craft,* London: Bloomsbury Visual Arts, 2013/2020.

_____, *Craft: An American History,* London: Bloomsbury Visual Arts, 2021.

Adler, Pete, and Nicholas Barnard, *African Majesty: The Textile Art of the Ashanti and Ewe,* London: Thames and Hudson, 1992.

Agrawal, Yashodhara, reprint, *Silk Brocades,* India: Roli Books, 2003/2004.

Agricola, Georius, translated by Herbert Clark Hoover and Lou Henry Hoover, *De Re Metallica*, New York: Dover Books, 1556/1950.

Ahlberg Yohe, Jill, and Teri Greeves, *Hearts of Our People: Native Women Artists,* Seattle: University of Washington Press, 2019.

Albers, Annie, edited by Brenda Danilowitz, *Anni Albers: Selected Writings on Design,* Hanover: University Press of New England, 2000.

Albers, Annie, *On Weaving,* new expanded edition, Princeton, NJ: Princeton University Press, 1965/2017.

Allen, Elsie, *Pomo Basketmaking,* Happy Camp, CA: Naturegraph Publishers, 1972.

Altman, Patricia B., and Caroline D. West, *Threads of Identity: Maya Costume of the 1960's in Highland Guatemala,* Los Angeles: Fowler Museum of Cultural History, 1992.

Alva, Walter, and Christopher B. Donnan, *Royal Tombs of Sipan,* Los Angeles: Fowler Museum of Cultural History, 1993.

Alvarez, Nilda Callañaupa, *Weaving in the Peruvian Highlands,* Cuzco, Peru: Center for Traditional Textiles, 2007.

_____, *Secrets of Spinning, Weaving, and Knitting in the Peruvian Highlands,* Loveland: Thrums Books, 2017.

Alvic, Philis, *Weavers of the Southern Highlands,* Lexington: University of Kentucky Press, 2003.

Anawalt, Patricia Rieff, *Indian Clothing Before Cortés: Mesoamerican Costumes from the Codices,* Norman: University of Oklahoma Press, 1981.
Anderson, June, *Return to Tradition: The Revitalization of Turkish Village Carpets,* Seattle: University of Washington Press, 1998.
Anderson, Marilyn, *Guatemalan Textiles Today,* New York: Watson-Guptill Publications, 1978.
Anderson, Ross, and Barbara Perry, *The Diversions of Keramos, 1925-1950,* Syracuse: Everson Museum of Art, 1983.
Andrews, Jack, *Samuel Yellin: Metalworker,* Ocean City, MD: SkipJack Press, 1992.
Anton, Ferdinand, *Ancient Peruvian Textiles,* English edition, New York: Thames and Hudson, 1984/1987.
Arnold, Denise Y., and Elvira Espejo, *The Andean Science of Weaving,* New York: Thames and Hudson, 2015.
Arnold, Janet, editor, *Queen Elizabeth's Wardrobe Unlock'd,* Leeds, Great Britain: Maney, 2000.
Arnow, Jan, *By Southern Hands: A Celebration of Craft Traditions in the South,* Birmingham, AL: Oxmoor House, 1987.
Arroyo Ortiz, Leticia, *Tintes Naturales Mexicanos: Su Applicación en Algodón, Henequén, y Lana,* Mexico: Universidad Nacional Autónoma de México, 2014.
Asamoah-Yaw, Ernest, and Osei-Bonsu Safo-Kananka, *Kente Cloth: History and Culture,* NY: Matchstick Literary, 2019.
Aslan, Chris, *Unraveling the Silk Road: Travels and Textiles in Central Asia,* UK: Icon Books, 2023/2024.
Asturias de Barrios, Linda, *Xomalapa: Native Dress and its Significance,* Guatemala: The Ixchel Museum of Indian Dress of Guatemala, 1985.
Atasoy, Dr. Nurhan, *Splendors of the Ottoman Sultans,* Memphis, TN: Wonders, 1992.
Atwater, Mary Meigs, reprint, *Byways in Hand-weaving: An Illustrated Guide to Rare Weaving Techniques,* New York: Macmillan, 1954/1973.
Ayensu, Edward S., *Ashanti Gold,* London: Marshall Editions, 1997.
Baines, Patricia, *Linen Hand Spinning and Weaving,* London: B. T. Batsford, 1989.

_____, reprint, *Spinning Wheels, Spinners, and Spinning,* London: B. T. Batsford, 1977/1991.
Baker, Hollis S., *Furniture in the Ancient World: Origins and Evolution, 3100-475 B.C.*, New York: Macmillan, 1966.
Baker, Patricia, *Islamic Textiles,* London: British Museum Press, 1995.
Banks, George, *Peruvian Pottery,* Aylesbury, England: Shire Publications, 1989.
Barber, E. J. W., *Prehistoric Textiles: The Development of Cloth in the Neolithic and Bronze Ages with Special Reference to the Aegean,* Princeton, NJ: Princeton University Press, 1991.
_____, *Women's Work: The First 20,000 Years: Women, Cloth and Society in Early Times*, New York: W. W. Norton and Company, 1994.
Barley, Nigel, *Smashing Pots: Feats of Clay from Africa,* London: British Museum Press, 1994.
Barnard, Nicholas, *Arts and Crafts of India,* London: Conran Octopus, 1993.
Battie, David, and Simon Cottle, editors, *Sotheby's Concise Encyclopedia of Glass*, London: Conran Octopus, 1995.
Beckerdite, Luke, editor, *American Furniture,* Hanover: University Press of New England, 2003.
Bell, Nicholas R., *A Revolution in Wood: The Bresler Collection,* Washington, DC: Renwick Gallery of the Smithsonian American Art Museum, 2010.
Bennett, Anna Gray, *Five Centuries of Tapestry from the Fine Arts Museums of San Francisco,* revised edition, San Francisco: Chronicle Books, 1976/1992.
Benson, Jonathan, *Woodworker's Guide to Bending Wood,* East Petersburg, PA: Fox Chapel Publishing Company, 2008.
Berlo, Janet C., and Ruth B. Phillips, *Native North American Art,* Oxford: Oxford University Press, 1998.
Bernsted, Anne-Marie Keblow, *Early Islamic Pottery: Materials and Techniques,* London: Archetype Publications, 2003.
Bernstein, Bruce, and Gerald McMaster, editors, *First American Art: The Charles and Valerie Diker Collection of American Indian Art,* Seattle: University of Washington Press, 2004.
Bernstein, David J., *The Mystery of the Bayeux Tapestry,* London: Weidenfeld and Nicholson, 1986.

Berrin, Kathleen, editor, *The Spirit of Ancient Peru: Treasures from the Museo Arqueológico Rafael Larco Herrera,* New York: Thames and Hudson, 1997.
Black, David, editor, *The Atlas of Rugs and Carpets,* third edition reprint, London: Tiger Books International, 1985/1996.
Blake-Roberts, Gaye, *Wedgwood Jasperware,* Botley, Oxford: Shire Publications, 2011.
Blandino, Betty, *The Figure in Fired Clay,* Woodstock, NY: The Overlook Press, 2001.
Bhanddari, Vandana, *Costumes, Textiles, and Jewellery of India: Traditions in Rajasthan,* London: Mercury Books, 2005.
Bliss, Anne, *North American Dye Plants,* Loveland: Interweave Press, 1993.
Blondel, Nicole, and Tamara Préaud, *La Manufacture Nationale de Sévres,* Charenton, France: Flohic Editions, 1996.
Blumer, Thomas John, *Catawba Indian Pottery,* Tuscaloosa: The University of Alabama Press, 2004.
Boardman, John, *Athenian Black Figure Vases,* London: Thames and Hudson, 1974.
Bolton, Eileen, *Lichens for Vegetable Dyeing,* US edition, McMinnville, OR: Robin and Russ Handweavers, 1960/1972.
Bonar, Eulalie H., editor, *Woven by the Grandmothers: Nineteenth-Century Navajo Textiles from the National Museum of the American Indian,* Washington, DC: Smithsonian Institution Press, 1996.
Boulay, Anthony du, *Chinese Porcelain,* London: Octopus Books, 1973.
Bowman, Leslie Greene, *American Arts and Crafts: Virtue in Design,* Boston, MA: Bullfinch Press, 1997.
Brack-Kaiser, Carol Leigh, *Nature Provides Dyes for Rainbows: A Workshop Approach,* Naples, FL: Whitehall Printing Company, 2016.
Brennan, Archie, and Brenda Osborn, *Archie Brennan,* Atglen PA: Schiffer Publishing, 2021.
Breward, Christopher, *Fashion,* Oxford: Oxford University Press, 2003.
Bridenbaugh, Carl, *The Colonial Craftsman,* reprint, New York: Dover Publications, 1950/1990.
Brincard, Marie-Therese, editor, *The Art of Metal in Africa,* New York: The African American Institute, 1982.

Brody, J. J., Catherine J. Scott, Stephen A. LeBlanc, and Tony Berlant, *Mimbres Pottery: Ancient Art of the American Southwest,* New York: Hudson Hills Press, 1983.

Brose, David S., James A. Brown, and David W. Penney, *Ancient Art of the American Woodland Indians,* New York: Harry N. Abrams, 1985.

Broudy, Eric, *The Book of Looms: A History of the Handloom from Ancient Times to the Present,* Hanover: University Press of New England, 1979.

Brown, Diedre, *Maori Arts of the Gods,* Auckland, Australia: Reed Books, 2005.

Brown, Robin C., *The Crafts of Florida's First Peoples,* Sarasota: Pineapple Press, 2003.

Brown, Sarah, and David O'Connor, *Glass Painters: Medieval Craftsmen,* London: British Museum Press, 1991.

Brown, Sarah, *Stained Glass: An Illustrated History,* New York: Crescent Books, 1992.

Brunello, Franco, *The Art of Dyeing in the History of Mankind,* American edition, Vicenza: Neri Pozza Editore, 1968/1973.

Brunhammer, Yvonne, *The Jewels of Lalique,* Paris: Flammarion, 1998.

Buchanan, Rita, *A Weaver's Garden,* Loveland: Interweave Press, 1987.

_____, *A Dyer's Garden,* Loveland: Interweave Press, 1995.

Bühler, Alfred, Eberhard Fischer, and Marie-Louise Nabholz, *Indian Tie-Dyed Fabrics,* vol. IV, Historic Textiles of India at the Calico Museum, Ahmedabad, India: 1980.

Bunzel, Ruth L., *The Pueblo Potter: A Study of Creative Imagination in Primitive Art*, reprint, New York: Dover Books, 1929/1972.

Burgard, Timothy Anglin, *The Art of Craft: Contemporary Works from the Sax Collection,* San Francisco: Fine Arts Museums of San Francisco, 1999.

Burnard, Joyce, *Chintz and Cotton: India's Textile Gift to the World,* Kenthurst, Australia: Kangaroo Press, 1994.

Burnham, Dorothy K., *Warp and Weft: A Textile Terminology,* Toronto: Royal Ontario Museum, 1980.

Burrison, John A., *Global Clay: Themes in World Ceramic Traditions,* Bloomington: Indiana University Press, 2017/2020.

Busby, Sharon, *Spruce Root Basketry of the Haida and Tlingit,* Seattle: Marquand Books, 2003.

Buss, Chiara, editor, *Silk Gold Crimson: Secrets and Technology at the Visconti and Sforza Courts,* Milan: Silvana Editoriale, 2009.
Cahlander, Adele, and Suzanne Baizerman, *Double-Woven Treasures from Old Peru,* St. Paul, MN: Dos Tejedoras, 1985.
Calderón, Cándida Fernández de, Alberto Sarmiento, Victoria Fuentes de Álvarez, editors, *Great Masters of Mexican Folk Art,* México, D. F: Fomento Cultural Banamex, 1998.
Calderón, Cándida Fernández de, *Grandes Maestros del Arte Popular de Oaxaca,* México, D. F: Fomento Cultural Banamex, 2011.
Campbell, Marian, *Decorative Ironwork,* New York: Harry N. Abrams, 1997.
Camusso, Lorenzo, and Sandro Bortone, editors, *Ceramics of the World,* New York: Harry N. Abrams, 1991.
Cantor, Jay E., reprint, *Winterthur: The Foremost Museum of American Furniture and Decorative Arts,* New York: Harry N. Abrams, 1985/1986.
Carboni, Stefano, and David Whitehouse, *Glass of the Sultans,* New York: The Metropolitan Museum of Art, 2001.
Cardew, Michael, *Pioneer Pottery,* reprint, London: A and C Black, 1969/2002.
Carvalho, Pedro de Moura, editor, *The World of Lacquer: 2000 Years of History,* Lisbon: Calouste Gulbenkian Museum, 2001.
Chambers, Letitia, *Clearly Indigenous: Native Visions Reimagined in Glass,* Santa Fe: Museum of New Mexico Press, 2020.
Chandler, Deborah, and Teresa Cordón, *Traditional Weavers of Guatemala: Their Stories, Their Lives,* Loveland: Thrums Books, 2015.
Chapman, S. D., and S. Chassagne, *European Textile Printers in the Eighteenth Century: A Study of Peel and Oberkampf,* London: Heinemann Educational Books, 1981.
Charbonneau, Diane, editor, *Chihuly,* Munich: DelMonico Books, 2013.
Cheminée, Matthieu, *Legacy: Jewelry Techniques of West Africa,* Brunswick, ME: Brynmorgen Press, 2014.
Chishti, Rta Kapur, and Rajul Jain, *Handcrafted Indian Textiles: Tradition and Beyond,* New Delhi: Roli Books, 2011.
Chung, Young Yang, *Painting with a Needle,* New York: Harry N. Abrams, 2003.
Clare, Claudia, *Subversive Ceramics,* London: Bloomsbury Academic, 2016.

Clark, Andrew J., Maya Elston, and Mary Louise Hart, *Understanding Greek Vases: A Guide to Terms, Styles, and Techniques,* Los Angeles: The J. Paul Getty Museum, 2002.
Clark, Garth, *American Ceramics, 1876 to the Present,* New York: Abbeville Press, 1979.
Coe, Michael D., and Stephen Houston, *The Maya,* ninth edition, New York: Thames and Hudson, 2015.
Cohen, Beth, *The Colors of Clay: Special Techniques in Athenian Vases,* Los Angeles: The J. Paul Getty Museum, 2006.
Cohen, David, and Catherine Hess, *Looking at European Ceramics: A Guide to Technical Terms,* Malibu: The J. Paul Getty Museum, 1993.
Collingwood, Peter, *The Techniques of Sprang; Plaiting on Stretched Threads,* New York: Watson-Guptill Publications, 1974.
_____, *The Maker's Hand: A Close Look at Textile Structures,* Asheville: Lark Books, 1987.
_____, *Rug Weaving Techniques: Beyond the Basics,* Loveland: Interweave Press, 1990.
Conn, Richard, *Native American Art in the Denver Art Museum,* Seattle: University of Washington Press, 1979.
Constantine, Mildred, and Jack Lenor Larson, *The Art Fabric: Mainstream,* Tokyo: Kodansha International, 1985.
_____, and Jack Lenor Larson, reprint, *Beyond Craft: The Art Fabric,* Tokyo: Kodansha International, 1973/1986.
Conway, Kelly A., and Lindsy R. Parrott, *Tiffany's Glass Mosaics,* Corning: Corning Museum of Glass, 2017.
Conway, Susan, *Thai Textiles,* London: British Museum Press, 1992.
Cooke, Edward S, Jr., reprint, *New American Furniture: The Second Generation of Studio Furnituremakers,* Boston: Museum of Fine Arts, 1989/1990.
_____, *Global Objects; Toward a Connected Art History,* Princeton: Princeton University Press, 2022.
Cooper, Emmanuel, *Ten Thousand Years of Pottery*, Philadelphia: University of Pennsylvania Press, 2000.
Cooper, Wendy A., *Classical Taste in America, 1800 – 1840,* New York: Abbeville Press, 1993.

Cordry, Donald, and Dorothy Cordry, third printing, *Mexican Indian Costumes,* Austin: University of Texas Press, 1968/1978.
Corkhill, Thomas, *The Complete Dictionary of Wood,* New York: Dorset Press, 1979.
Couldrey, Vivienne, *The Art of Louis Comfort Tiffany,* London: Grange Books, 1996.
Coutinho, Maria Isabel Pereira, *18th Century French Furniture,* Lisbon: Calouste Gulbenkian Museum, 1999.
Cumming, Elizabeth, *The Arts and Crafts Movement,* New York: Thames and Hudson, 1991.
Daly, Greg, *Lustre,* Philadelphia: University of Pennsylvania Press, 2012.
Darbyshire, Lydia, editor, *Furniture: A Visual Celebration of the World's Great Furniture-Making Traditions,* Edison, NJ: Chartwell Books, 1996.
Davenport, Millia, *The Book of Costume,* volume 1, New York: Crown Publishers, 1948.
Davies, Lucy, and Mo Fini, *Arts and Crafts of South America,* San Francisco: Chronicle Books, 1995.
Davis, Susan Schaefer, *Women Artisans of Morocco: Their Stories, Their Lives,* Loveland: Thrums Books, 2018.
Dayan, Ruth, and Wilburt Feinberg, *Crafts of Israel,* New York: Macmillan, 1974.
Degl'Innocenti, Daniela, and Mattia Zupo, *Seta ad Art, Storia e tecniche dell'eccellenza Toscana / The Art of Silk: A History of Silk Manufacturing in Tuscany,* Florence: Edizioni Firenze, 2010.
Del Río y Dueñas, Ignacio, *Grana Fina Cochinilla: Regalo de México para el Mundo,* Oaxaca, Mexico: Instituto Estatal de Ecología de Oaxaca, 2006.
Denamur, Isabelle, *Moroccan Textile Embroidery,* Paris: Flammarion, 2003.
Desai, Chelna, *Ikat Textiles of India,* San Francisco: Chronicle Books, 1988.
Deuss, Krystyna, *Indian Costumes from Guatemala,* Twickenham, Great Britain: Paladin Graphics, 1981.
Dhamija, Jasleen, and Jyotindra Jain, editors, *Handwoven Fabrics of India,* Ahmedabad, India: Mapin Publishing, 1989.
D'Harcourt, Raoul, *Textiles of Ancient Peru and Their Techniques,* Seattle: University of Washington Press, 1962.
Diran, Richard K., *The Vanishing Tribes of Burma,* London: Seven Dials, 1997/1999.

Dockstader, Frederick J., *Weaving Arts of the North American Indian,* revised edition, New York: Harper Collins, 1978/1993.
Doellah, H. Santosa, *Batik: The Impact of Time and Environment,* Java, Indonesia: Danar Hadi, 2002.
Domestici, Fiamma, *Della Robia: A Family of Artists,* Florence, Italy: Scala, 1992.
Donnan, Christopher B., *Ceramics of Ancient Peru,* Los Angeles: Fowler Museum of Cultural History, 1992.
Dormer, Peter, *The Culture of Craft: Status and Future*, Manchester, UK: Manchester University Press, 1997.
Draper, James David, *French Terracottas,* New York: The Metropolitan Museum of Art, 1992.
Drewal, Henry John, and John Mason, *Beads, Body, and Soul: Art and Light in the Yoruba Universe,* Los Angeles: Fowler Museum of Cultural History, 1998.
Dubin, Lois Sherr, *North American Indian Jewelry and Adornment: From Prehistory to the Present,* New York: Harry N. Abrams, 1999.
_____, *Glittering World: Navajo Jewelry of the Yazzie Family,* Washington, DC: National Museum of the American Indian, 2014.
Duncan, Alastair, *Louis Majorelle: Master of Art Nouveau Design,* New York: Harry N. Abrams, 1991.
Dunnewold, Jane, *complex Cloth: A Comprehensive Guide to Surface Design,* Bothell, WA: Fiber Studio Press, 1996.
Dunsmore, Susi, *Nepalese Textiles,* London: British Museum Press, 1993.
Edwards, Eiluned, *Textiles and Dress of Gujarat,* Ahmedabad, India: Mapin Publishing, 2011.
_____, *Imprints of Culture: Block Printed Textiles of India,* New Delhi: Niyogi Books, 2016.
Eiseman, Fred B., Jr., *Ulat-ualatan: Traditional Basketry in Bali,* Bangkok, Thailand: White Lotus Press, 1999.
Elliot, Inger McCabe, *Batik: Fabled Cloth of Java,* Singapore: Periplus Editions, 1985/2004.
Elsdon, Sheila M., *Later Prehistoric Pottery in England and Whales,* Aylesbury, England: Shire Publications, 1989.
Emery, Irene, *The Primary Structures of Fabrics*, London: Thames and Hudson, 2009.

Emmerich, André, *Sweat of the Sun and Tears of the Moon,* New York: Hacker Art Books, 1984.
Evans, Angela Care, *The Sutton Hoo Ship Burial,* revised edition, London: British Museum Press, 1986/1995.
Evans, Jane A., *A Joy Forever: Latvian Weaving, Traditional and Modified Uses,* Saint Paul: Dos Tejedoras Fiber Arts Publications, 1991.
Evans, Miriam, and Ranui Ngarimu, *The Art of Maori Weaving,* Wellington, New Zealand: Huia Publishers, 2005.
Evans, Nancy Goyne, *American Windsor Chairs,* NY: Hudson Hills Press, 1996.
_____, *American Windsor Furniture, Specialized Forms,* NY: Hudson Hills Press, 1997.
_____, *Windsor-Chair Making in America: From Craft Shop to Consumer,* Hanover: University Press of New England, 2006.
Ezra, Kate, *Royal Art of Benin: The Perls Collection,* New York: The Metropolitan Museum of Art, 1992.
Falick, Melanie D., reprint, *Knitting in America: Patterns, Profiles and Stories of America's Leading Artisans,* New York: Artisan, 1996/1997.
Faraday, Cornelia, Bateman, *European and American Carpets and Rugs,* new edition, Suffolk, England: Antique Collectors' Club, 1929/1990.
Fariello, M. Anna, *Cherokee Basketry: From the Hands of Our Elders,* Charleston, SC: The History Press, 2011.
_____, *Cherokee Pottery: From the Hands of Our Elders,* Charleston, SC: The History Press, 2009/2013.
_____, *Cherokee: Images of America,* Charleston, SC: Arcadia Publishing, 2018.
_____, and Paula Owen, editors, *New Perspectives on Art and Craft,* Lanham, MD: Scarecrow Press, 2004.
Faulkner, Rupert, *Japanese Studio Crafts: Tradition and the Avant-Garde,* London: Laurence King, 1995.
Fee, Sarah, editor, *Cloth that Changed the World: The Art and Fashion of Indian Chintz,* New Haven: Yale University Press, 2019.
Feest, Christian F., *Native Arts of North America,* updated edition, New York: Thames and Hudson, 1980/1992.
Feng, Zhao, Sandra Sardjono, and Christopher Buckley, editors, *A World of Looms: Weaving Technology and Textile Arts,* China: Zhejiang University

Press, 2019.
Ferreira, Maria Teresa Gomes, *Sala Lalique,* Lisbon: Museu Calouste Gulbenkian, 1997.
Fine, Ruth, *William Daley: Ceramic Artist,* Atglen, PA: Schiffer Publishing, 2013.
Fisch, Arline M., *Textile Techniques in Metal*, Asheville: Lark Books, 1996.
Fisher, Nora, editor, reprint, *Mud, Mirror and Thread: Folk Traditions of Rural India,* Ahmedabad, India: Mapin Publishing, 1996/2006
Fitzhugh, William W. and Elisabeth I. Ward, editors, *Vikings: The North Atlantic Saga,* Washington, DC: Smithsonian Institution Press, 2000.
Fleming, John, and Hugh Honor, *The Penguin Dictionary of Decorative Arts,* revised edition, London: Penguin, 1977/1989.
Forrest, Tim, *The Bullfinch Anatomy of Antique Furniture: An Illustrated Guide to Identifying Period, Detail, and Design,* Boston: Bullfinch Press, 1996.
Frank, Isabelle, editor, *The Theory of Decorative Art: An Anthology of European and American Writings 1750-1940,* New Haven: Yale University Press, 2000.
Fraser, David W., *A Guide to Weft Twining and Related Structures with Interacting Wefts,* Philadelphia: University of Pennsylvania Press, 1989.
Fraser-Lu, Sylvia, *Handwoven Textiles of South-East Asia,* Singapore: Oxford University Press, 1988.
Friedman, Florence Dunn, editor, *Gifts of the Nile: Ancient Egyptian Faience*, Providence: Rhode Island School of Design, 1998.
Fuchs, Ronald W. II, and David S. Howard, *Made in China: Export Porcelain from the Leo and Doris Hodroff Collection at Winterthur,* Winterthur, DE: Winterthur Publications, 2005.
Fundaburk, Emma Lila, and Mary Douglas Fundaburk Foreman, *Sun Circles and Human Hands,* Fairhope, AL: Southern Publications, 1985.
Gable, Carl I., *Murano Magic: Complete Guide to Venetian Glass, Its History and Artists,* Atglen PA: Schiffer Publishing, 2004.
Galloway, Patricia, editor, *The Southeastern Ceremonial Complex: Artifacts and Analysis,* Lincoln: University of Nebraska Press, 1989.
Gänsicke, Susanne, and Markowitz, Yvonne J., and, *Looking at Jewelry: A Guide to Terms, Styles, and Techniques,* Los Angeles: J. Paul Getty Museum, 2019.

Garrard, Timothy F., *Gold of Africa: Jewellery and Ornaments from Ghana, Cote d'Ivoire, Mali, and Senegal in the Collection of the Barbier-Mueller Museum,* Geneva: Prestel-Verlag, 1989.
Garrett, Valery M., *Chinese Clothing: An Illustrated Guide,* New York: Oxford University Press, 1994.
Geijer, Agnex, *A History of Textile Art,* London: Sotheby Parke Bernet, 1979.
Gettinger, Mattiebelle, *Master Dyers to the World,* Washington, DC: The Textile Museum, 1982.
Gettys, Marshal, editor, *Basketry of Southeastern Indians,* Idabel, OK: Museum of the Red River, 1984.
Ghose, Madhuvanti, editor, *Vanishing Beauty: Asian Jewelry and Ritual Objects from the Barbara and David Kipper Collection,* Chicago: The Art Institute of Chicago, 2016.
Gianturco, Paola, and Toby Tuttle, *In Her Hands: Craftswomen Changing the World*, New York: The Monacelli Press, 2000.
Gibbon, Kate Fitz, and Andrew Hale, *Ikat: Splendid Silks of Central Asia,* London: Laurence King Publishing, 1997.
Gibson, Alex, *Neolithic and Early Bronze Age Pottery,* Aylesbury, England: Shire Publications, 1986.
Gillow, John, *Printed and Dyed Textiles from Africa,* Seattle: University of Washington Press, 2001.
_____, *African Textiles,* San Francisco: Chronicle Books, 2003.
_____, and Nicholas Barnard, *Indian Textiles*, revised edition, London: Thames and Hudson, 1991/2008.
_____, and Bryan Sentance, *World Textiles*, London: Thames and Hudson, 1999.
Ginsburg, Madeleine, editor, *The Illustrated History of Textiles,* New York: Portland House, 1991.
Gittinger, Mattiebelle, *Splendid Symbols: Textiles and Tradition in Indonesia,* updated edition, Singapore: Oxford University Press, 1979/1991.
Gloag, John, *A Social History of Furniture Design from B.C. 1300 to A.D. 1960,* New York: Bonanza Books, 1966.
Glob, P. V., reprint, *The Bog People: Iron Age Man Preserved,* Ithaca: Cornell University Press, 1969/1988.
Goffen, Rona, *Museums Discovered: The Calouste Gulbenkian Museum,* Greenwich, CT: New York Graphic Society, 1982.

Goldstein, Sidney M., Leonard S. Rakow, and Juliette K. Rakow, *Cameo Glass: Masterpieces from 2000 Years of Glassmaking,* Corning: The Corning Museum of Glass, 1982.
Goodwin, Jill, *A Dyer's Manual,* Hessle, England: Ashmans Publications, 1982.
Gordon, Beverly, *Textiles: The Whole Story,* New York: Thames and Hudson, 2011.
Gordon, John Stewart, *American Glass: The Collections at Yale,* New Haven: Yale University Press, 2018.
Goswamy, B. N., *Indian Costumes in the Collection of the Calico Museum of Textiles,* third edition, Ahmedabad, India: Calico Museum, 1992/2010.
Graham-Campbell and James Dafydd Kidd, *The Vikings,* New York: Tabard Press, 1980.
Graves, Margaret S., et al, *Ceramic Art,* Princeton: University of Princeton Press, 2023.
Green, Kevin, *Roman Pottery,* Berkeley: University of California Press, 1992.
Greenbaum, Toni, *Messengers of Modernism: American Studio Jewelry 1940-1960,* Paris: Flammarion, 1996.
Greenhalgh, Paul, *Ceramic Art and Civilisation,* London: Bloomsbury, 2021.
Grierson, Su, reprint, *The Color Cauldron: The History and Use of Natural Dyes in Scotland,* Perth, Scotland: Mill Books, 1986/1989.
Groneman, Isaäc, *The Javanese Kris,* Leiden, the Netherlands: C. Zwartenkot Art Books, 2009.
Grose, David Frederick, *Early Ancient Glass,* New York: Hudson Hill Press, 1989.
Gruber, Alain, editor, *The History of Decorative Arts: The Renaissance and Mannerism in Europe,* New York: Abbeville Press, 1994.
Gusler, Wallace B., reprint, *Furniture of Williamsburg and Eastern Virginia 1710-1790,* Williamsburg: The Colonial Williamsburg Foundation, 1979/1993.
Gutarp, Else Marie, *Medieval Manner of Dress: Documents, Images, and Surviving Examples of Northern Europe, Emphasizing Gotland in the Baltic Sea,* Gotland, Sweden: Gotlands Fornsal, 2001.
Guy, John, *Woven Cargoes: Indian Textiles in the East,* New York: Thames and Hudson, 1998.

Hall, Barry, *From Mud to Music: Making and Enjoying Ceramic Musical Instruments,* Westerville, OH: The American Ceramic Society, 2015.
Hall, Rosalind, reprint, *Egyptian Textiles,* Aylesbury, England: Shire Publications, 1986/1990.
Hald, Margrethe, *Ancient Danish Textiles from Bogs and Burials,* Denmark: The National Museum of Denmark, 1980.
Hamer, Frank, and Janet Hamer, *The Potters Dictionary of Materials and Techniques,* sixth edition, London: Herbert Press, 1975/2024.
Harden, Donald B., *Glass of the Caesars,* Milan: Olivetti, 1987.
Harris, Jennifer, editor, *5,000 Years of Textiles*, Washington, DC: Smithsonian Books, 2011.
Harrod, Tanya, *The Crafts in Britain in the 20th Century,* New York: Bard Graduate Center, Yale University Press, 1999.
_____, editor, *Craft,* Cambridge: MIT Press, 2018.
Harvey, Janet, *Traditional Textiles of Central Asia,* London: Thames and Hudson, 1997.
Haslam, Jeremy, *Medieval Pottery,* second edition, Aylesbury, England: Shire Publications, 1978/1989.
Hauser-Schäublin, Brigitta, Marie-Louise Nabholz-Kartaschoff, and Urs Ramseyer, *Balinese Textiles,* Singapore: Periplus Editions, 1997.
Hecht, Ann, *The Art of the Loom: Weaving Spinning and Dyeing across the World,* New York: Rizzoli, 1989.
Hedlund, Ann Lane, *Reflections of the Weaver's World,* Denver: Denver Art Museum, 1992.
Heinrich, Tanya, editor, *Lenore Tawny: Mirror of the Universe,* Chicago: The University of Chicago Press, 2019.
Heisinger, Kathryn B., *Porcelain,* Philadelphia: Philadelphia Museum of Art, 1984.
Held, Shirley E., *Weaving: A Handbook of the Fiber Arts,* third edition, Belmont, CA: Thomson Wadsworth, 1973/1999.
Herald, Jacqueline, *World Crafts,* Asheville: Lark Books, 1992.
Harvey, Nancy, *Tapestry Weaving: A Comprehensive Guide,* Loveland: Interweave Press, 1991.
Heringa, Rens, and Harmen C. Veldhuisen, et. al., *Fabric of Enchantment: Batik from the North Coast of Java,* Los Angeles: Weatherhill, 1996.

Herodotus, *The History*, translated by David Greene, Chicago: University of Chicago Press, 440 BCE/1988.
Hess, Catherine, editor, *The Arts of Fire: Islamic Influences on Glass and Ceramics of the Italian Renaissance,* Los Angeles: The J. Paul Getty Museum, 2004.
Hewitt, Mark, and Nancy Sweezy, *The Potter's Eye: Art and Tradition in North Carolina Pottery,* Chapel Hill: University of North Carolina Press, 2005.
Heyl, Norbert, and Cristina Gregorin, *Venice Master Artisans,* Italy: Edizioni Grafiche Vianello, 2003.
Hill, Sarah H., *Weaving New Worlds: Southeastern Cherokee Women and their Basketry,* Chapel Hill: University of North Carolina Press, 1997.
Hirschstein, Joshua, and Maren Beck, *Silk Weavers of Hill Tribe Laos,* Loveland: Thrums Books, 2017.
Hitchcock, Michael, *Indonesian Textile Techniques,* Aylesbury, England: Shire Publications, 1985.
Hodges, Henry, *Technology in the Ancient World,* NY: Barnes and Noble Books, 1970/1992.
Hoffmann, Marta, reprint, *The Warp-Weighted Loom,* Oslo, Norway: Robin and Russ Handweavers, 1964/1974.
Holyoke, Julie, *Digital Jacquard Design*, London: Bloomsbury, 2013.
Holm, Bill, *Northwest Coast Indian Art: An Analysis of Form*, 50th Anniversary edition, Seattle: University of Washington Press, 1962/2015.
Hope, Colin, *Egyptian Pottery,* Aylesbury, England: Shire Publications, 1987.
Holcomb, Melanie, editor, *Jewelry: The Body Transformed,* New Haven: Yale University Press, 2018.
Horton, Elizabeth T., "Ancient Innovations: Rivercane Basketry from Cobb Cave," *Artifact of the Month*, October, 2019, https://archeology.uark.edu/artifacts/cobbcavebasketry/
Horn, Robyn, *Living with Form: The Horn Collection,* Little Rock: Arkansas Arts Center and Bradley Publishing, 1999.
Hurst, Ronald L., and Jonathan Prown, *Southern Furniture 1680-1830: The Colonial Williamsburg Collection,* New York: Harry N. Abrams, 1997.
Jackson, Anna, editor, *Kimono: Kyoto to Catwalk,* London: Victoria and Albert Museum, 2022.

Jain, Rahul, *Mughal Patkas, Ashavali Saris, and Indo-Iranian Metal-Ground Fragments in the Collection of the Calico Museum of Textiles and the Sarabhai Foundation,* Ahmedabad, India: Sarabhai Foundation, 2008.
_____, *Rapture: The Art of Indian Textiles,* New Delhi: Niyogi Books, 2011.
_____, *Mughal Velvets in the Collection of the Calico Museum of Textiles,* Ahmedabad, India: Sarabhai Foundation, 2011.
_____, *Textiles and Garments at the Jaipur Court,* New Delhi: Niyogi Books, 2016.
Jaitly, Jaya, *Crafts Atlas of India,* New Delhi: Niyogi Books, 2012.
_____, *Woven Textiles of Varanasi,* New Delhi: Niyogi Books, 2014.
Jefferies, Janis, editor, *The Handbook of Textile Culture,* London: Bloomsbury Visual Arts, 2016.
Jenkins, David, editor, *The Cambridge History of Western Textiles*, Cambridge: Cambridge University Press, 2003.
Jernigan, W. Wesley, *Jewelry of the Prehistoric Southwest,* Santa Fe: School of American Research, 1978.
Johnston, Meda Parker, and Glen Kaufman, *Design on Fabrics,* New York: Reinhold Publishing Corporation, 1967.
Jonaitis, Aldona, *Art of the Northwest Coast,* Seattle: University of Washington Press, 2006.
Jones, Julie, *The Art of Pre-Columbian Gold: The Jan Mitchell Collection,* Boston: Little, Brown and Company, 1985.
Jordan, John, "Turned and Carved Hollow Vessel" in *American Woodturner*, https://www.johnjordanwoodturning.com/uploads/9/6/4/2/9642134/american_woodturner_-_turned_and_carved_hollow_vessel__use_this_one_.pdf, Spring 2009: 52-63.
Jørgensen, Lise Bender, *North European Textiles until AD 1000,* Aarhus, Denmark: Aarhus University Press, 1992.
Kaeppler, Adrienne L., *The Pacific Arts of Polynesia and Micronesia,* Oxford: Oxford University Press, 2008.
Kalter, Johannes, *The Arts and Crafts of Turkestan,* London: Thames and Hudson, 1984.
Kangas, Matthew, John Perreault, Edward S. Cooke, Jr., and Tran Turner, *Expressions in Wood: Masterworks from the Wornick Collection,* Seattle: University of Washington Press, 1996.

Kangas, Matthew, *Craft and Concept: The Rematerialization of the Art Object,* New York: Midmarch Arch Press, 2006.
Kardon, Janet, editor, *The Ideal Home: The History of Twentieth Century American Craft, 1900-1920,* New York: Harry N. Abrams, 1993.
_____, editor, *Revivals! Diverse Traditions: The History of Twentieth Century American Craft, 1920-1945, African-American, Appalachian, Colonial Revival, Hispanic, Native American,* New York: Harry N. Abrams, 1994.
_____, editor, *Craft in the Machine Age: The History of Twentieth Century American Craft, 1920-1945,* New York: Harry N. Abrams, 1995.
Karmason, Marilyn G., and Joan B. Stacke, *Majolica: A Complete History and Illustrated Survey,* New York: Harry Abrams, 1989.
Kartiwa, Suwati, *Kain Songket Indonesia: Songket-Weaving in Indonesia,* third edition, Jakarta, India: Penerbit Djambatan, 1989/1996.
Katz.Marshall P., and Robert Lehr, *Palissy Ware: Nineteenth Century French Ceramists from Avisseau to Renoleau,* London: The Athlone Press, 1996.
Kelsey, John, editor, *Fine Woodworking on Bending Wood,* Newtown, CT: Taunton Press, 1985.
Kent, Kate Peck, *Pueblo Indian Textiles: A Living Tradition,* Santa Fe: School of American Research Press, 1983.
Kerlogue, Fiona, *Batik: Design, Style and History,* London: Thames and Hudson, 2004.
Khatri, Ismail, Judy Frater, and Latha Tummuru, *The Art of the Dyer in Kutch: Traditional Block Printed Textiles: Culture and Technique,* Middletown, DE: Kindle Direct Publishing, 2021.
King, Brenda M., *The Wardle Family and its Circle: Textile Production in the Arts and Crafts Era,* Woodbridge, England: The Boydell Press, 2019.
Kingery, W. David, and Pamela B. Vandiver, *Ceramic Masterpieces: Art, Structure, Technology,* New York: The Free Press, 1986.
Kirkham, Pat. and Susan Weber, editors, *History of Design: Decorative Arts and Material Culture, 1400-2000,* New York: Bard Graduate Center, 2013.
Klein, Dan, and Ward Lloyd, editors, *The History of Glass*, London: McDonald and Co, 1991.
Klein, Kathryn, editor, *The Unbroken Thread: Conserving the Textile Traditions of Oaxaca,* Los Angeles: The Getty Conservation Institute, 1997.

Knöpfli, Hans, *Crafts and Technologies: Some Traditional Craftsmen of the Western Grasslands of Cameroon,* London: British Museum, 1997.
_____, *Sculpture and Symbolism, Crafts and Technologies: Some Traditional Craftsmen of the Western Grasslands of Cameroon, Part 2: Woodcarvers and Blacksmiths,* Limbe, Cameroon: Presbook, 1998.
_____, *Grasland: Eine Afrikanische Kultur,* Wuppertal, Germany: Peter Hammer Verlag, 2008.
Koeninger, Kay, Mary Davis MacNaughton, and Martha Drexler Lynn, *Revolution in Clay: The Marer Collection of Contemporary Ceramics,* Seattle: University of Washington Press, 1994.
Koeppe, Wolfram, editor, *Making Marvels: Science and Splendor at the Courts of Europe,* New Haven: Yale University Press, 2019.
Kopf, Silas, *A Marquetry Odyssey: Historical Objects and Personal Work,* Manchester, VT: Hudson Hills Press, 2008.
Koplos, Janet, and Bruce Metcalf, *Makers: A History of American Studio Craft,* Chapel Hill: The University of North Carolina Press, 2010.
Kumar, Ritu, reprint, *Costumes and Textiles of Royal India,* Suffolk: Antique Collectors' Club, 1999/2006.
Kuo, Susanna, *Katagami: Japanese Textile Stencils in the Collection of the Seattle Art Museum,* Seattle: Seattle Art Museum, 1985.
Laing, Lloyd and Jennifer Laing, *The Art of the Celts,* London: Thames and Hudson, 1992.
Lamb, Venice, *West African Weaving,* London: Duckworth, 1975.
_____, and Judy Holmes, *Nigerian Weaving,* Hertingfordbury, Great Britain: Roxford Books, 1980.
_____, and Alastair Lamb, *Au Cameroun: Weaving – Tissage,* Hertingfordbury, Great Britain: Roxford Books, 1981.
Langsner, Drew, *The Chairmaker's Workshop: Handcrafting Windsor and Post-and-Rung Chairs,* Asheville: Lark Books, 1997.
Lauria, Jo, and Steve Fenton, *Craft in America,* New York: Clarkson Potter, 2007.
Larson, Jack Lenor, *The Dyers Art: Ikat, Batik, Plangi,* New York: Van Nostrand Reinhold, 1977.
Lavalle, José Antonio de, *Cobre del Antiguo Peru, The Copper of Ancient Peru,* Lima, Perú: AFP Integra, 1998.

Laver, James, *Costume and Fashion: A Concise History,* revised edition, New York: Thames and Hudson, 1969/1995.
Leach, Bernard, *Kenzan and His Tradition: The Lives and Times of Koetsu, Sotatsu, Korin and Kenzan,* New York: Transatlantic Arts, 1966/1967.
_____, *Hamada Potter,* Tokyo: Kodansha International, 1975.
_____, *A Potter's Book,* edited reprint, London: Unicorn Press, 1940/2015.
Lee, Dayna Bowker, and H. F. Gregory, editors, *The Work of Tribal Hands: Southeastern Indian Split Cane Basketry,* Natchitoches, LA: Northwestern State University Press, 2006.
Lee, Lawrence, George Seddon, and Francis Stephens, *Stained Glass,* Secaucus: Chartwell Books, 1976/1989.
LeFree, Betty, *Santa Clara Pottery Today,* Albuquerque: University of New Mexico Press, 1975.
Leftwich, Rodney L., *Arts and Crafts of the Cherokee,* Cherokee, NC: Cherokee Publications, 1970.
Legge, Margaret, *Three Centuries of Wedgwood: Art, Industry, and Design*, Melbourne: National Gallery of Victoria, 1995.
Levey, Santina M., *Lace: A History*, London: Victoria and Albert Museum, 1983.
Levin, Elaine, *The History of American Ceramics: From Pipkins and Bean Pots to Contemporary Forms,* New York: Harry N. Abrams, 1988.
Levine, Marc N., "Ceramic Molds for Mixtec Gold: A New Lost-Wax Casting Technique from Prehispanic Mexico," in *Journal of Archaeological Method and Theory*, June 2019, 26: 423-456.
Lin, Zhang, *The Qin Dynasty Terra-Cotta Army of Dreams,* Xi'an, China: Xi'an Press, 2005.
Litto, Gertrude, *South American Folk Pottery,* New York: Watson-Guptill Publications, 1976.
Livingstone, Andrew, and Kevin Petrie, editors, *The Ceramics Reader,* London: Bloomsbury, 2017.
Lopez, Ana M., *Metalworking Through History,* Westport, CT: Greenwood Press, 2009.
Lucas, A., and J. R. Harris, *Ancient Egyptian Materials and Industries,* revised fourth edition, London: Histories and Mysteries of Man Ltd, 1926/1989.
Lucero, Helen R., and Suzanne Baizerman, *Chimayó Weaving: The Transformation of a Tradition,* Albuquerque: University of New Mexico

Press, 1999.
Lucie-Smith, Edward, *The Story of Craft: The Craftsman's Role in Society*, New York: Van Nostrand Reinhold Company, 1981/1984.
_____, Edward, *Furniture: A Concise History*, London: Thames and Hudson, 1985.
_____, *The Art of Albert Paley: Iron, Bronze, Steel,* New York: Harry N. Abrams, 1996.
Lynggaard, Finn, *Pottery: Raku Technique,* translated from Danish by Joan Bulman, New York: Van Nostrand Reinhold, 1970/1973.
Lynn, Martha Drexler, *Clay Today: Contemporary Ceramists and Their Work,* San Francisco: Chronicle Books, 1990.
Mack, John, *Malagasy Textiles,* Aylesbury, England: Shire Publications, 1989.
Mackie, Louise W., *Symbols of Power: Luxury Textiles from Islamic Lands, 7th-21st Century,* New Haven: Yale University Press, 2015.
MacNaughton, Mary Davis, *Revolution in Clay: The Marer Collection of Contemporary Ceramics,* Seattle: University of Washington Press, 1994.
Mallett, Marla, *Woven Structures: A Guide to Oriental Rug and Textile Analysis,* Atlanta: Christopher Publications, 1998.
Mallon, Sean, *Samoan Art and Artists: O Measina a Samoa,* Honolulu: University of Hawaii Press, 2002.
Manginis, George, *China Rediscovered: The Benaki Museum Collection of Chinese Ceramics,* London: Haus Publishing, 2016.
Manners, Errol, *Ceramics Source Book: A Visual Guide to a Century of Ceramics,* London: Grange Books, 1997.
Markowitz, Yvonne J., and Susanne Gänsicke, *Beyond Adornment: Jewelry and Identity in Art,* Los Angeles: J. Paul Getty Museum, 2025.
Matos, Maria Antónia Pinto de, and João Pedro Monteiro, *Oriental Influence on 17th Century Portuguese Ceramics,* translated by Elizabeth Plaister, Lisbon, Portugal: Electa, 1994.
Mau, August, translated by Francis Kelsey, *Pompeii, Its Life and Art*, Project Guttenberg eBook, 1902/2013, https://www.gutenberg.org/files/42715/42715-h/42715-h.htm#fig167
Maxwell, Robyn, *Textiles of Southeast Asia: Tradition, Trade and Transformation,* revised edition, Singapore: Periplus Editions, 1990/2003.
_____, *Sari to Sarong: Five Hundred Years of Indian and Indonesian Textile Exchange,* Canberra: National Gallery of Australia, 2003.

McFadden, Davie Revers, et al, *Elegant Fantasy: The Jewelry of Arline Fisch*, San Diego: Arnoldshe Art Publishers, 1999.
McGrath, Jinks, *The Encyclopedia of Jewelry-Making Techniques*, Philadelphia: Running Press, 1995.
McKay, Mary Terrence, and Lisa Trujillo, *The Centinela Weavers of Chimayo: Unfolding Tradition,* Chimayo, NM: Centinela Traditional Arts, 1999.
McKinnon, Jean, *Vessels of Life: Lombok Earthenware,* Bali, Indonesia: Saritaksu, 1996.
McCreight, Tim, *Complete Metalsmith,* Portland, ME: Brynmorgen Press, 2004.
Medley, Margaret, *The Chinese Potter,* third edition, New York: Phaidon Press, 1976/2001.
Meisch, Lynn A., editor, *Traditional Textiles of the Andes: Life and cloth in the Highlands,* London: Thames and Hudson, 1997.
Mera, H. P., *Spanish-American Blanketry: Its Relationship to Aboriginal Weaving in the Southwest,* Santa Fe: School of American Research Press, 1987.
Meyer, Marilee Boyd, and David Acton, *Inspiring Reform: Boston's Arts and Crafts Movement,* New York: Harry N. Abrams, 1997.
Miller, Mary Ellen, *Maya Art and Architecture,* second edition, London: Thames and Hudson, 2014.
_____, T*he Art of Mesoamerica,* sixth edition, London: Thames and Hudson, 2019.
Mindling, Eric Sebastian, *Oaxaca Stories in Cloth: A Book about People, Belonging, Identity, and Adornment,* Loveland: Thrums Books, 2016.
Mirza, Villoo, and Vinutha Mallya, editors, *Handloom and Handicrafts of Gujurat,* Ahmedabad, India: Mapin Publishing, 2012.
Mohanty, Bijoy Chandra, K. V. Chandramouli, and H. D. Naik, *Natural Dyeing Processes of India,* Ahmedabad, India: Calico Museum of Textiles, 1987.
_____, *Ikat Fabrics of Orissa and Andhra Pradesh,* second revised edition, Ahmedabad, India: Calico Museum of Textiles, 1974/2003.
Monroe, Michael W., *The White Collection of American Crafts,* New York: Harry N. Abrams, 1995.
Montupet, Janine, and Ghislaine Schoeller, *Lace: The Elegant Web,* New York: Harry N. Abrams, 1990.

Moraga, Vanessa Drake, *Weaving Abstraction: Kuba Textiles and the Woven Art of Central Africa,* Washington, DC: The Textile Museum, 2011.
Morley, John, *The History of Furniture: Twenty-Five Centuries of Style and Deign in the Western Tradition,* Boston: Bullfinch Press, 1999.
Morrell, Anne, *The Techniques of Indian Embroidery,* London: B. T. Batsford Ltd, 1994.
Morley-Fletcher, Hugo, editor, *Techniques of the World's Great Masters of Pottery and Ceramics,* Edison: Chartwell Books, 1997.
Morris, Kathleen M., *The Art of Iron: Objects from the Musée Le Secq des Tournelles, Rouen, Normandy,* New Haven: Yale University Press, 2018.
Morris, Walter F., Jr., *Living Maya,* New York: Harry Abrams, 1987.
_____, Alfredo Martínez, Janet Schwartz, and Carol Karasik, *Guía Textil de los Altos de Chiapas / A Textile Guide to the Highlands of Chiapas,* Loveland: Thrums Books, 2011.
_____, and Carol Karasik, *Maya Threads: A Woven History of Chiapas,* Loveland: Thrums, 2015.
Munsterber, Hugo and Marjorie, *World Ceramics from Prehistory to Modern Times,* New York: Penguin Studio Books, 1998.
Murphy, Veronica, and Rosemary Crill, *Tie-Dyed Textiles of India,* New York: Rizzoli, 1991.
Muthesius, Anna, "From Seed to Samite: Aspects of Byzantine Silk Production, *Textile History,* 20 (2), 135-49, 1989.
Nash, June, editor, *Crafts in the World Market: The Impact of Global Exchange on Middle American Artisans,* Albany: State University of New York Press, 1993.
Needleman, Carla, *The Work of Craft: An Inquiry into the Nature of Crafts and Craftsmanship,* NY: Kodansha International, 1993.
Neel, David, *The Great Canoes: Reviving a Northwest Coast Tradition,* Seattle: University of Washington
Neri, Antonio, translated by Christopher Merrett, Michael Cable, editor, *The Art of Glass,* The Society of Glass Technology, 1662/2006.
Nestor, Sarah, editor, *Spanish Textile Tradition of New Mexico and Colorado,* Santa Fe: Museum of New Mexico Press, 1979.
Newberry, Percy E., *Beni Hasan, Part 1,* London: Archaeological Survey of Egypt, 1893.

Newton, Douglas, *The Pacific Islands, Africa, and the Americas,* New York: The Metropolitan Museum of Art, 1987.
Nicholson, H. B., and Alana Cordy-Collins, *Pre-Columbian Art from the Land Collection,* San Francisco: California Academy of Science, 1979.
Nicholson, Paul T., *Brilliant Things for Akhenaten: The Production of Glass, Vitreous Materials and Pottery at Amarna Site O45.1,* London: Egypt Exploration Society, 2007.
Noble, Joseph Veach, *The Techniques of Painted Attic Pottery,* revised edition, New York: Thames and Hudson, 1965/1988.
Nosan, Gregory, editor, *Clothed to Rule the Universe: Ming and Qing Dynasty Textiles at the Art Institute of Chicago,* Seattle: University of Washington Press, 2000.
Ogden, Jack, *Jewellery of the Ancient World,* London: Trefoil Books, 1982.
_____, *Diamonds: An Early History of the King of Gems,* New Haven: Yale University Press, 2018.
Olney, Judith, *Choctaw Diagonal Twill Plaiting: A Workshop with Claude Medford, Jr.,* Westland, MI: MKS Publications, 1990.
Orsi Landini, Roberta, and Bruna Niccoli, *Moda a Firenze 1540-1580 / Florentine Style 1540-1580,* Florence, Italy: Edizioni Polistampa, 2005.
Osborne, Harold, editor, *The Oxford Companion to the Decorative Arts,* Oxford: Oxford University Press, 1991.
Osborne, Lilly de Jongh, *Indian Crafts*, Norman: University of Oklahoma Press, 1975.
Pachas, Ulla Holmquist, *Museo Larco: Treasures from Ancient Peru,* Lima, Peru: Asociación Rafael Larco Hoyle, 2010.
Padilla, Carmella, and Barbara Anderson, editors, *A Red Like No Other: How Cochineal Colored the World: An Epic Story of Art, Culture, Science, and Trade,* New York: Skira Rizzoli, 2015.
Page, Jutta-Annette, *The Art of Glass: Toledo Museum of Art,* Toledo: Toledo Museum of Art, 2006.
Paludan, Liz, *Crochet: History and Technique,* English edition, Loveland: Interweave Press, 1986/1995.
Parker, Mary S., *The Folkwear Book of Ethnic Clothing: Easy Ways to Sew and Embellish Fabulous Garments from Around the World,* New York: Lark Books, 2002.

Parker, Rozsika, *The Subversive Stitch: Embroidery and the Making of the Feminine,* London: Bloomsbury Visual Arts, 2010/2021.
Parry, Linda, *William Morris Textiles,* London: Weidenfeld and Nicolson, 1983.
Pasztory, Esther, *Pre-Columbian Art,* Cambridge: Cambridge University Press, 1998.
Pausanias, translated by Peter Levi, *Guide to Greece,* Volume 2, London: Penguin Books, 2nd century/1979.
Paydar, Niloo Imami, and Ivo Grammet, *The Fabric of Moroccan Life,* Seattle: University of Washington Press, 2002.
Paz, Octavio, *In Praise of Hands, Contemporary Crafts of the World,* Greenwich, CT: New York Graphic Society, 1974.
Peck, Amelia, editor, *Interwoven Globe: The Worldwide Textile Trade, 1500-1800,* New Haven: Yale University Press, 2013.
Pellatt, Apsley, C*uriosities of Glass Making*, London: David Bogue, 1849.
Pete, Lynda Teller, and Barbara Teller Ornelas, *Spider Woman's Children: Navajo Weavers Today,* Loveland: Thrums Books, 2018.
_____, and Barbara Teller Ornelas*, How to Weave a Navajo Rug and Other Lessons from Spider Woman,* Loveland: Thrums Books, 2020.
Peterson, Susan, *Shoji Hamada: A Potter's Way and Work,* New York: Weatherhill, 1974/1995.
Petiot, Fabien, and Chloé Braunstein-Kriegel, *Crafts: Today's Anthology for Tomorrow's Crafts,* Paris: Editions Norma, 2018.
Pevsner, Nikolaus, *Pioneers of Modern Design: From William Morris to Walter Gropius,* fourth edition, New Haven: Yale University Press, 1936/2005.
Phillips, Clare, *Jewelry*, London: Thames and Hudson, 1996.
Phipps, Elena, *The Peruvian Four-Selvaged Cloth: Ancient Threads – New Directions,* Los Angeles: Fowler Museum at UCLA, 2013.
Piatkiewicz-Dereniowa, Maria, *Delft Faience in the Collections of the Wawel Royal Castle,* Kraków, Poland: Malopolska Poligrafia, 1996.
Piccolpasso, Cipriano, translated by Ronald Lightbrown and Alan Caiger-Smith, *The Three Books of the Potter's Art / Li Tre Libri dell'Arte del Vasaio,* London: Scolar Press, 1557/1980.
Pickett, Barbara, "Rahul Jain's Reimagined Velvet Drawloom" in *The Social Fabric - Deep Local to Pan Global: Textile Society of America 16th Biennial*

Symposium Proceedings, Vancouver, Canada, September 2018, https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2103andcontext=tsaconf

Picton, John, and John Mack, *African Textiles,* New York: Harper and Row, 1989.

Piepenburg, Robert, *Raku Pottery,* New York: Collier Books, 1972.

Pillsbury, Joanne, Miriam Doutriaux, Reiko Ishihara-Brito, and Alexandre Tokovinine, editors, *Ancient Maya Art at Dumbarton Oaks,* Washington, DC: Dumbarton Oaks Research Library and Collections, 2012.

Piña, Leslie, *Furniture in History: 3000 B.C.-200 A.D.,* New Jersey: Prentice Hall, 2010.

Piponnier, Françoise, and Perrine Mane, second English reprint, *Dress in the Middle Ages,* New Haven: Yale University Press, 1995/2000.

Pitelka, Morgan, *Handmade Culture: Raku Potters, Patrons, and Tea Practitioners in Japan,* Honolulu: University of Hawaii Press, 2005.

Pliny the Elder, translated by Henry T. Riley (Henry Thomas), *The Natural History / Naturalis Historia,* London: H. G. Bohn, 1855. https://catalog.perseus.org/catalog/urn:cts:latinLit:phi0978.phi001.perseus-eng1

Poli, Doretta Davanzo, *The Spirit of Tradition: Eight Centuries of Venetian Velvets at the Tessitura Bevilacqua,* Venice: Cicero Editore, 2004.

Postrel, Virginia, *The Fabric of Civilization: How Textiles Made the World,* New York: Basic Books, 2020.

Potter, Annie Louise, *A Living Mystery: The International Art and History of Crochet,* United States of America: A. J. Publishing International, 1990.

Power, Susan C., *Early Art of the Southeastern Indians,* Athens, GA: University of Georgia Press, 2004.

Preu, Nancy, editor, *Defining Craft,* New York: American Craft Museum, 2000.

Prior, Katherine, and John Adamson, *Maharajas' Jewels,* New York: Vendome Press, 2000.

Pritchard, Frances, editor, *Crafting Textiles: Tablet Weaving, Sprang, Lace and other Techniques from the Bronze Age to the Early 17th Century*, Oxford: Oxbow Books, 2021.

Proctor, Richard M., and Jennifer F. Lew, second printing, *Surface Design for Fabric,* Seattle: University of Washington Press, 1984/1985.

Puma, Richard Daniel De, *Etruscan Art in the Metropolitan Museum of Art,* New Haven: Yale University Press, 2013.
Raizman, David, *History of Modern Design,* Upper Saddle River, NJ: Prentice Hall, 2004.
Raku Museum, translated by Junko Ando, Turin, Italy: Umberto Allemandi, no date.
Ranjan, Aditi, and M. P. Ranjan, *Handmade in India: A Geographical Encyclopedia of Indian Crafts,* New York: Abbeville Press, 2007.
Rathbun, William Jay, *Beyond the Tanabata Bridge: Traditional Japanese Textiles,* New York: Thames and Hudson, 1993.
Raymond, Pierre, *Marquetry,* revised English edition, Los Angeles: The J. Paul Getty Museum, 1978/2002.
Raymond, Robert, *Out of the Fiery Furnace: The Impact of Metals on the History of Mankind,* University Park: The Pennsylvania State University Press, 1986.
Rawson, Philip, *Ceramics,* fifth printing, Philadelphia: University of Pennsylvania Press, 1971/1984.
Regensteiner, Else, *The Art of Weaving,* New York: Van Nostrand Reinhold Company, 1970.
Rehren, Thilo, and Ian C. Freestone, "Ancient Glass: From Kaleidoscope to Crystal Ball," in *Journal of Archaeological Science*, April 2015, 56: 233-241.
Rhodes, Daniel, *Kilns,* Philadelphia: Chilton Book Company, 1968.
Ribeiro, Maria Queiroz, *Louças Iznik Pottery,* Lisbon, Portugal: Museu Calouste Gulbenkian, 1996.
Ricardo do Espírito Santo Silva Foundation, second edition, Lisbon: Printer Portuguesa, 1995/2002.
Richter, Anne, *The Jewelry of Southeast Asia,* New York: Harry N. Abrams, 2000.
Riley, Noël, *A History of Decorative Tiles,* London: Grange Books, 1987.
Risatti, Howard, *A Theory of Craft: Function and Aesthetic Expression,* Chapel Hill: The University of North Carolina Press, 2007.
Rivard, Paul E., *A New Order of Things: How the Textile Industry Transformed New England,* Hanover: University Press of New England, 2002.
Rodgers, Susan, Anne Summerfield, and John Summerfield, *Gold Cloths of Sumatra: Indonesia's Songets from Ceremony to Commodity,* Leiden,

Netherlands: Kitlv Press, 2007.
Ronald, Emma, *Ajrakh: Patterns and Borders,* Jaipur, India: Anokhi Museum of Hand Printing, 2007.
_____, *Balotra: The Complex Language of Print,* Jaipur, India: Anokhi Museum of Hand Printing, 2007.
Ross, Doran H., *Wrapped in Pride: Ghanaian Kente and African American Identity,* Los Angeles: UCLA Fowler Museum of Cultural History, 1998.
Roth, H. Ling, *Ancient Egyptian and Greek Looms,* Halifax, England: Bankfield Museum, 1913. https://www.google.com/books/edition/Ancient_Egyptian_and_Greek_Looms/yiv0CdA4iaoC?hl=en&gbpv=1&pg=PA3&printsec=frontcover
Rowe, Ann Pollard, *Warp-Patterned Weaves of the Andes,* Washington, DC: The Textile Museum, 1977.
_____, *A Century of Change in Guatemalan Textiles,* New York: The Center for Inter-American Relations, 1981.
_____, *Costumes and Featherwork of the Lords of Chimor: Textiles from Peru's North Coast,* Washington, DC: The Textile Museum, 1984.
_____, *Costume and Identity in Highland Ecuador,* Washington, DC: The Textile Museum, 1998.
_____, and John Cohen, *Hidden Threads of Peru: Q'ero Textiles,* London: Merrell, 2002.
Rowland-Warne, L., *Costume,* New York: Alfred A. Knopf, 1992.
Saltzman, Ellen Lewis, *Overshot Weaving,* New York, Van Nostrand Reinhold Company, 1983.
Samuels, Cheryl, *The Chilkat Dancing Blanket*, Seattle: Pacific Search Press, 1982.
_____, *The Raven's Tail,* Vancouver: University of British Columbia Press, 1987.
Sandberg, Gösta, *Indigo Textiles: Technique and History,* English edition, London: A and C Black, 1986/1989.
Sarabhai, Mrinalini, and Jasleen Dhamija, reprint, *Patolas and Resist Dyed Fabrics of India,* Ahmedabad, India: Mapin Publishing, 1988/1989.
Sawyer, Alan R., *Ancient Peruvian Ceramics from the Kehl and Nena Markley Collection,* University Park, PA: Museum of Art, 1975.
Sayer, Chloë, *Costumes of Mexico,* Austin: University of Texas Press, 1985.

Schevill, Margot Blum, *Maya Textiles of Guatemala: The Gustavus A. Eisen Collection, 1902,* Austin: University of Texas Press*,* 1993.
Schlein, Alice, and Bhakti Ziek, second printing, *The Woven Pixel: Designing for Jacquard and Dobby Looms Using Photoshop,* Greenville, SC: Bridgewater Press, 2006/2007.
Schoeser, Mary, *World Textiles: A Concise History,* London: Thames and Hudson, 2003.
Schreiber, Toby, *Athenian Vase Construction: A Potter's Analysis,* Malibu: The J. Paul Getty Museum, 1999.
Scott, Philippa, *The Book of Silk*, London: Thames and Hudson, 1993.
Secretan, Thierry, reprint, *Going into Darkness: Fantastic Coffins from Africa,* London: Thames and Hudson, 1994/1995.
Seiler-Baldinger, Annemarie, *Textiles: A Classification of Techniques*, Washington, DC: Smithsonian Institution Press, 1994.
Selk, Karen, *In Search of Wild Silk: Exploring a Village Industry in the Jungles of India,* Atglen, PA: Schiffer Publishing, 2022.
Sembach, Klaus-Jürgen, Gabriele Leuthäuser, and Peter Gössel, *Twentieth-Century Furniture Design,* Germany: Taschen, 1991.
Sennett, Richard, *The Craftsman,* New Haven: Yale University Press, 2008.
Sentance, Bryan, *Wood*: *The World of Woodwork and Carving*, London: Thames and Hudson, 2003.
_____, *Ceramics*: *A World Guide to Traditional Techniques*, London: Thames and Hudson, 2004.
Shadbolt, Doris, *Bill Reid,* Seattle: University of Washington Press, 1998.
Shales, Ezra, *The Shape of Craft,* London: Reaktion Books, 2017.
Shapiro, H. Alan, Carlos A. Picón, and Gerry D. Scott, III, editors, *Greek Vases in the San Antonio Museum of Art,* San Antonio: San Antonio Museum of Art, 1995.
Sherr Dubin, Lois, *Glittering World: Navajo Jewelry of the Yazzie Family,* Washington, DC: National Museum of the American Indian, 2014.
Shortland, Andrew, *Lapis Lazuli from the Kiln: Glass and Glassmaking in the Late Bronze Age,* Leuven, Belgium: Leuven University Press, 2012.
Skidmore, Suki, reprint, *Sanganer: Traditional Textiles - Contemporary Cloth,* Jaipur, India: Anokhi Museum of Hand Printing, 2009/2013.
_____, *Hand Blockopedia*, Jaipur, India: Anokhi Museum of Hand Printing, 2014.

Smayda, Norma, Gretchen White, Jody Brown, and Katherine Schelleng, *Weaving Designs by Bertha Gray Hayes; Miniature Overshot Patterns,* Atglen, PA: Schiffer Publishing, 2009.
Sober, Marion Burr, *Chair Seat Weaving for Antique Chairs,* Manchester, Ct: Finestkind Books, 1964.
Sonntag, Hans, translated by Victor Dewsbery*, Meissen in Meissen,* third edition, Germany: Edition Leipzig, 2000/2007.
Sparke, Penny, *An Introduction to Design and Culture,* fourth edition, London: Routledge, 1986/2020.
Sperlich, Norbert, and Elizabeth Katz Sperlich, *Guatemalan Backstrap Weaving,* Norman: University of Oklahoma Press, 1980.
Spivey, Richard L. *The Legacy of Maria Povenka Martinez,* Santa Fe: Museum of New Mexico Press, 2003.
Spring, Christopher, *African Textiles,* Wakefield, RI: Moyer Bell, 1997.
St Clair, Kassia, *The Golden Thread,* London: John Murray, 2018.
Staniland, Kay, *Medieval Craftsmen Embroiderers,* London: British Museum Press, 1991.
Steel, Hillary, *Ikat Traditions: The Mexican Jaspe Rebozo,* Hillary Steel, 2024.
Stevenson, alic, editor, *The Petrie Museum of Egyptian Archaeology: Characters and Collections,* London: UCL Press, 2015.
Stewart, Hilary, *Cedar: Tree of Life to the Northwest Coast Indians,* Seattle: University of Washington Press, 1884.
Stern, E. Marianne, and Birgit Schlick-Nolte, *Early Glass of the Ancient World, 1600 B.C. – A.D.50*, Germany: Verlag Gerd Hatje, 1994.
Stone, Michael A., *Contemporary American Woodworkers,* Salt Lake City: Gibbs M. Smith, 1986.
Stone-Miller, Rebecca, *To Weave for the Sun: Ancient Andean Textiles in the Museum of Fine Arts, Boston,* New York: Thames and Hudson, 1982.
Strickler, Carol, *American Woven Coverlets,* Loveland: Interweave Press, 1987.
Sullivan, Donna Lee, *Weaving Overshot: Redesigning the Tradition,* Loveland: Interweave Press, 1996.
Taber, Barbara, and Marilyn Anderson, *Backstrap Weaving: Step-by-Step Techniques on one of the Oldest and Most Versatile Looms,* New York: Watson-Guptill Publications, 1975.
Tait, Hugh, editor, *Glass: 5,000 Years*, New York: Harry N. Abrams, 1991.

_____, editor, *Jewelry: 7,000 Years*, New York: Harry N. Abrams, 1991.
Tanavoli, Parviz, *Persian Flat Weaves: A Survey of Flatwoven Floor covers and Hangings and Royal Masnads,* Woodbridge, England: Antique Collectors' Club Ltd, 2002.
Tarlo, Emma, *Clothing Matters: Dress and Identity in India,* Chicago: University of Chicago Press, 1996.
Tate Museum, *Faith Ringgold: In Conversation – Tate Talks,* London, 2018, https://www.youtube.com/watch?v=g5tbIjNwyrg
Teague, Ken, *Metalcrafts of Central Asia,* Princes Risborough, England: Shire Publications, 1990.
Teague, Lynn S., *Textiles in Southwestern Prehistory,* Albuquerque, University of New Mexico Press, 1998.
Terraroli, Valerio, *Skira Dictionary of Modern Decorative Arts 1851-1942,* Milan: Skira, 2001.
Thomas, Nicholas, *Oceanic Art,* second edition, London, England: Thames and Hudson, 2018.
Thompson, Paul, *The Works of William Morris,* third edition, Oxford: Oxford University Press, 1967/1993.
Thurman, Christa C. Mayer, *Textiles in the Art Institute of Chicago,* Chicago: Art Institute of Chicago, 1992.
Tomita, Jun, and Noriko Tomita, *Japanese Ikat Weaving,* London: Routledge and Kegan Paul, 1982.
Torgenrud, Heather, *Norwegian Pick-Up Bandweaving,* Atglen, PA: Schiffer Publishing, 2014.
Toso, Gianfranco, *Murano: A History of Glass,* Italy: Arsenale Editrice, 2000/2007.
Trapp, Kenneth R., and Howard Risatti, *Skilled Work: American Craft in the Renwick Gallery,* Washington, DC: Smithsonian Institution Press, 1998.
Treasures of Tutankhamun, New York: Metropolitan Museum of Art, 1976.
Trench, Lucy, editor, *Materials and Techniques of the Decorative Arts: An Illustrated Dictionary,* Chicago: University of Chicago Press, 2000.
Tsunoyama, Yyukihiro, editor, *Textiles of the Andes: Catalog of Amano Collection,* English edition, San Francisco: Heian International, 1977/1979.
Tunis, Edwin, *Colonial Craftsmen and the beginning of American Industry,* Baltimore: The Johns Hopkins University Press, 1965.

Turok, Marta, *Cómo Acercarse a la Artesanía,* Mexico: Plaza y Valdes, 1988.
_____, "Un Acercamiento al Significado de El Huipil Ceremonial de Magdalenas, Chiapas," presentation, November 5, 2015, https://www.youtube.com/watch?v=AWxM3NC1rfc
_____, editor, reprint, *El Caaracol Púrpura: Una Tradicón milenaria en Oaxaca,* Mexico: Ediciones Corunda, 1988/2003.
Tylecote, R. F., *A History of Metallurgy,* second edition, London: Maney Publishing, 1976/2002.
Ulmer, Sean M. *Uncommon Threads: Contemporary Artists and Clothing,* Ithaca, NY: Herbert F. Johnson Museum of Art, 2000.
Untracht, Oppi, *Metal Techniques for Craftsmen,* Garden City, New York: Doubleday and Company, 1968.
_____, *Jewelry Concepts and Technology,* Garden City, New York: Doubleday and Company, 1982.
Van Duuren, David, *The Kris,* Wijk en Aalburg, the Netherlands: Pictures Publishers, 1998.
Van Lemmen, Hans, *5000 Years of Tiles,* Washington, DC: Smithsonian Books, 2013.
Van Roojen, Pepin, *Batik Design,* Boston: Shambhala, 1997.
Van Stralen, Trudy, *Indigo, Madder, and Marigold: A Portfolio of Colors from Natural Dyes,* Loveland: Interweave Press, 1993.
Ventura, Carol, "Sisal Production in Highland Guatemala," *FiberArts, M*arch/April 1987: 44-45.
_____, "Guatemalan Cotton Spinners," *Shuttle Spindle and Dyepot,* Winter 1988/1989: 47-49.
_____, "Sisal: Its History and Production in Jacaltenango, Guatemala," *Ars Textrina,* 1989, 11: 107-152.
_____, "A Traditional Mayan Corn Strainer," *Ceramic Review,* July/August 1989: 32-34.
_____, "Choctaw Cane Baskets," *Shuttle Spindle and Dyepot,* Summer 1990: 56-58.
_____, "Native American Paper, Pottery, Spinning, Weaving, and Printing" essay, illustrations, and catalog entries included in *Testimony of Images: Pre-Columbian Art*, Donald McVicker, editor, Miami University Art Museum, Oxford, OH, 1992: 124-140, 173-200.

_____, “Pre-Columbian Spindle Whorls,” *Shuttle Spindle and Dyepot,* Fall 1994: 45-48.
_____, “Pre-Columbian Press Molds,” *Ceramics Monthly,* November 1994: 12-16.
_____, “The Interrelationship of Weaving with Fertility in Mesoamerica,” *Ars Textrina*, June 1994, 21: 179-221.
_____, *More Tapestry Crochet,* Carol Ventura, Cookeville, TN, 2002.
_____, “An Ongoing Haida Tradition: Cedar-Bark Hats,” *Shuttle Spindle and Dyepot,* Spring 2002: 40-45.
_____, *Maya Hair Sashes Backstrap Woven in Jacaltenango, Guatemala / Cintas Mayas Tejidas con el Telar de Cintura en Jacaltenango, Guatemala,* Carol Ventura, Cookeville, TN, 2003.
_____, “A Maya Ceramics Tradition Survives in the Yucatan,” *Ceramics Monthly,* December 2003: 64-65.
_____, “Raphia-Palm Basketmaking in Western Cameroon, Africa,” *Shuttle Spindle and Dyepot,* Winter 2003/2004: 21-24.
_____, “Traditions of the Haida Gwaii,” *Woodcarving Magazine,* May/June 2004, 78:56-59.
_____, “Women’s Hair Sashes of Mesoamerica” chapter included in *Berg Encyclopedia of World Dress and Fashion: Latin America and the Caribbean,* Vol. II, Margot Blum Schevill, volume editor, Berg, Oxford, 2010: 208-214.
_____, “The Twenty-first Century Voices of the Ashanti Adinkra and Kente Cloths of Ghana,” in *Textiles and Politics: Textile Society of America 13th Biennial Symposium Proceedings*, Washington, DC, September 2012, http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1750andcontext=tsaconf
_____, “A Trip to Dye For: Purpura Patula Pansa Mollusks in Oaxaca, Mexico,” *Shuttle Spindle and Dyepot*, Summer 2019: 37-41.
Verlet, Pierre, Michel Florisoone, Adolf Hoffmeister, and François Tabard, *The Book of Tapestry: History and Technique,* New York: Vendome Press, 1965.
Villechenon, Marie-Noëlle Pinot de, *Sévres Porcelain from the Sévres Museum: 1740 to the Present day*, translated by John Gilbert, London: Lund Humphries Publishers, 1993/1997.

Vincent, Gilbert T., *Masterpieces of American Indian Art from the Eugene and Clare Thaw Collection,* New York: Harry N. Abrams, 1995.
Von Neuman, Robert, *The Design and Creation of Jewelry,* third edition, Philadelphia: Chilton Book Company, 1982.
Wada, Yoshiko, Mary Kellogg rice, and Jane Barton, *Shibori: The Inventive Art of Japanese Shaped Resist Dyeing, Tradition, Techniques, Innovation,* Tokyo: Kodansha International Ltd, 1983.
Wade, Edwin L., *The Arts of the North American Indian: Native Traditions in Evolution*, New York: Hudson Hill Press, 1986.
Ward, Rachel, *Islamic Metalwork,* London: British Museum Press, 1993.
Wardropper, Ian, and Lynn Springer Roberts, *European Decorative Arts in the Art Institute of Chicago*, Chicago: Art Institute of Chicago, 1991.
Wasserspring, Lois, *Oaxacan Ceramics,* San Francisco: Chronicle Books, 2000.
Watson, Aldren A., *Country Furniture,* New York: Thomas Y. Crowell Company, 1974.
Weiner, Annette B., and Jane Schneider, editors, *Cloth and Human Experience,* Washington, DC: Smithsonian Institution Press, 1989.
Weinstein, Laura, *Ink, Silk, and Gold,* Boston: Boston Museum of Fine Arts, 2015.
Weisberg, Gabriel P., *Art Nouveau Bing, Paris Style 1900,* New York: Harry N. Abrams, 1986.
Weltge, Sigrid, *Bauhaus Textiles: Women Artists and the Weaving Workshop,* London: Thames and Hudson, 1993.
Wescoat, Bonna D., *Poets and Heroes: Scenes of the Trojan War,* Atlanta, GA: Emory Museum of Art and Archaeology, 1987.
Westphal, Katerine, et al., *The Surface Designer's Art: Contemporary Fabric Printers and Dyers,* Asheville: Lark Books, 1993.
Wheat, Joe Ben, *Blanket Weaving in the Southwest,* Tucson: University of Arizona Press, 2003.
Whitehouse, David, *Glass of the Roman Empire,* Corning: The Corning Museum of Glass, 1988.
Whitaker, Francis, and Gary Mansfield, *My Life as an Artist Blacksmith,* Boise: LithoCraft, 1995.
Whitford, Frank, *Bauhaus,* reprint, London: Thames and Hudson, 1984/1991.

Williams, Dyfri, and Jack Ogden, *Greek Gold: Jewelry of the Ancient World,* London: British Museum Press, 1994.
Wilson, Gillian, *Selections from the Decorative Arts in the J. Paul Getty Museum,* Malibu: The J. Paul Getty Museum, 1983.
Wilson, John, *Making Wood Tools,* third edition, Charlotte, MI: Home Shop Books, 2021.
Wilson, John, *Shaker Oval Boxes,* Volumes 1-3, Charlotte, MI: Home Shop Books, 2014-2019.
Wilson, Kathleen Curtis, *Textile Art from Southern Appalachia: The Quiet Work of Women,* Johnson City, TN: The Overmountain Press, 2001.
Wilson, Kax, *A History of Textiles,* Boulder: Westview Press, 1979.
Wilson, Timothy, *Ceramic Art of the Italian Renaissance,* London: British Museum Publications, 1987.
_____, *Maiolica: Italian Renaissance Ceramics in the Ashmolean Museum,* second edition, Oxford: Ashmolean Museum, 1989/2003.
Winter, Mark, and Thomas McCormick, *Saltillo Serapes, A Survey: 1850-1920,* Chicago: McCormick Gallery, 2011.
Wissinger, Joanna, *Arts and Crafts Pottery and Ceramics,* San Francisco: Chronicle Books, 1994.
Wood, Donald A., Teruhisa Tanaka, and Frank Chance, *Echizen: Eight Hundred Years of Japanese Stoneware,* Birmingham: Birmingham Museum of Art, 1994.
Wood Turning in North America Since 1930, Philadelphia: Wood Turning Center, 2001.
Woodward, Arthur, *Navajo Silver: A Brief History of Navajo Silversmithing,* Flagstaff: Northland Press, 1975.
Wright, Robin K., *Northern Haida Master Carvers,* Seattle: University of Washington Press, 2001.
Xun, Zhou, and Gao Chunming, English reprint, *5000 Years of Chinese Costume,* China: The Commercial Press, 1984/1988.
Yanagi, Soetsu, *The Beauty of Everyday Things,* UK: Penguin Books, 2017/2018.
Yang, Sunny, and Rochelle M. Narasin, *Textile Art of Japan,* Tokyo: Shufunotomo, 1989/2000.
Yarwood, Doreen, reprint, *The Encyclopedia of World Costume,* New York: Bonanza Books, 1978/1986.

Yohe, Jill Ahlberg, and Teri Greeves, *Hearts of Our People: Native Women Artists,* Seattle: University of Washington Press, 2019.
Zerwick, Chloe, *A Short History of Glass*, Corning: Corning Museum of Glass, 1990.
Zicafoose, Mary, *Ikat: The Essential Handbook to Weaving with Resists,* New York: Interweave, 2020.

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Professor Carol Ventura taught the Paleolithic through twenty-first century art surveys, Mesoamerican art, and craft history at Tennessee Technological University until her retirement in 2021.

In addition to a PhD in Art, she has an MA in Ceramics and an MFA in Printmaking, Papermaking and Book Arts. Her award-winning ceramics, fiber art, glass, jewelry, and photographs have been included in more than a hundred invitational and juried exhibitions. Carol has also taught batik, ceramics, photography, printmaking, silversmithing, cloisonné enameling and weaving on the college level. Her studio background adds an extra dimension to her teaching and writing because she understands how crafts and art are made and includes that information in her classes and publications.

Carol worked with a weaving cooperative in Guatemala as a Peace Corps volunteer from 1976-80. She later wrote *Maya Hair Sashes Backstrap Woven in Jacaltenango/Cintas mayas tejidas con el telar de cintura en Jacaltenango*, Guatemala, a bilingual book based on her dissertation. Carol also authored three books about tapestry crochet, a craft she learned while in Guatemala.

Carol has interviewed and photographed craftspeople around the world – some of which are included in this book. More may be found on the web pages linked to her home page at https://www.carolventura.com/. She has presented papers at international conferences, including the 47 th International Congress of Americanists, The 6th Annual Conference on Textiles, The Handweavers Guild of America International Conference, and the College Art Association.

Her numerous scholarly papers and articles have been included in both refereed journals and the popular press, including the *Berg Encyclopedia of World Dress and Fashion*, *Bloomsbury Encyclopedia of World Textiles, Testimony of Images: Pre-Columbian Art* books and *American Lutherie, Anvil's Ring, Ars Textrina, Ceramics Monthly, Ceramic Review, Crochet Traditions, FiberArts, Handwoven*, *Interweave Crochet, Ornament, Piecework, Shuttle Spindle and Dyepot, Vogue Knitting Crochet, Whispering Wind,* and *Woodcarving* magazines.



Carol Ventura surrounded by first millennium Mochica portrait vessels at the Larco Museum in Lima, Peru, 2017.