Whistler Docent Training Packet - Techniques

Introduction to Printmaking

Printmaking, along with painting and sculpture, is one of the traditional avenues of artistic expression. Many artists that were primarily painters and sculptors also made prints during their careers. One particular appeal of the printmaking process is that it produces multiple original works of art. By making prints, an artist can reach out to a broader audience than in a process such as painting or sculpture that generally produces a one-of-a-kind original.

Printmaking Techniques

Printmaking is divided into three principle categories: *relief, intaglio,* and *planographic*. While each has its own distinguishing features, all share certain characteristics.

-In each category a surface, or *matrix*, is prepared with a design that will hold ink.

-The design must be a mirror image of the desired composition, since the printing process reverses the image.

-After ink is applied to the matrix, it is pressed against a piece of paper or cloth, transferring the design and creating an original print, referred to as an *impression.*

-The surface then can be re-inked and re-printed to create multiple originals.

A matrix may be made of wood, stone, metal, or plastic depending on the technique. The different processes of printmaking are defined by how the surface has been worked, how the design retains ink, and what materials have been used. Different techniques sometimes are combined on a single surface to create a variety of different effects.

An understanding of how a print is made is not necessary to appreciate the beauty or expressive power of an individual work. We can make a parallel with a great dinner; it is not necessary to have detailed recipes to enjoy an excellent meal. Yet, just as the knowledge of the originality, the lengthy preparations and the rare ingredients used to prepare a complex dish can enhance our appreciation of it, so too can an awareness of printmaking techniques enrich our experience of the artist's achievement.

<u>Intaglio Processes</u>

Since Whistler worked predominantly in etching, let's begin with a discussion of the intaglio processes. Engraving and etching and their associated tonal processes are members of the intaglio family of printmaking. With these techniques the artist cuts the design **into** the surface of a plate, creating lines and areas of tone that hold a thick, viscous ink. The way the plate is worked defines the intaglio technique: engraving, drypoint, and their associated processes are produced by manually carving into the surface; in contrast, etchings require acid to eat into the metal and generate the design. Artists often combine different engraving and etching techniques in the same print. Intaglio printmaking uses a metal plate, usually copper, although zinc and different types of synthetic material also are used today.

Slide 1: Martin Schongauer, *Death of the Virgin*, c. 1470/1475, engraving, Gift of W.G. Russell Allen 1943.3.34

In all of the intaglio techniques, ink is forced into the depressions incised in the plate, and excess ink is wiped from the surface. In preparation for printing, paper is soaked and then blotted, making it more malleable and receptive to the ink. Then, the plate is put face up on the moveable bed of a special intaglio press, and the blotted paper is placed over the plate. Blankets of felt are placed over the paper to keep the firm pressure of printing from shearing the paper at the edge of the plate. The bed of the press moves under a heavy roller that forces the paper down into the design where it picks up the ink in the lines. The paper is carefully peeled off the plate, resulting in a single impression of the print. As with the relief processes, the matrix may be re-inked and re-printed numerous times, although each printing results in a flattening of the plate and a slight deterioration of the design. As with the relief processes, the design must be a mirror image of the desired composition, since printing naturally reverses the image.

Slide 2: Abraham Bosse, French, 1602 – 1676, *Etchers and Engravers*, 1642, etching, Rosenwald Collection, 1948.11.35

Engraving

Engraving is the oldest of the intaglio processes. It began in the workshops of goldsmiths and metalsmiths in the early fifteenth century, naturally developing from the decoration of metal surfaces with incised lines. The lines are cut into a metal plate, traditionally copper, using a sharp metal instrument called a *burin* or *graver*. The burin has a diamond-shaped tip set at a forty-five degree angle--the artist can vary the thickness of the lines from thin to thick or vice-versa by changing the angle of the point and the pressure exerted on the burin. Each stroke of the tool removes a thin filament of metal to create a line. When the design is completed, the artist inks, wipes, and prints the plate as described above.

Slide 3: Albrecht Dürer, German, 1471 – 1528, *Saint Jerome in His Study*, 1514, engraving, Gift of R. Horace Gallatin, 1949.1.11
Albrecht Durer was the unsurpassed master of the engraving technique. His virtuoso handling of the burin allowed him to suggest light and shadow, and to convey textures that had never before been captured in printmaking. Note how skillfully Durer modeled the forms of the saint and the lion in *St Jerome in his Study*, and how subtly he used the burin to define the differences in texture between the fur of the lion, the grain of the wood on the ceiling, and the bottle-bottom lead glass windows and their reflections on the wall.

Slide 4: Albrecht Dürer, German, 1471 – 1528, *Adam and Eve*, 1504, engraving on laid paper, Gift of R. Horace Gallatin, 1949.1.18

An engraver chooses from a variety of burin strokes--the alphabet of drawing--to create forms on a metal plate. Dots, dashes, tapering lines, and networks of parallel lines called hatching are the

rudimentary building blocks at an artist's disposal. A printmaker can define outlines and contours and light and shadow with these basic elements. Areas of white paper with minimal linework can suggest bright light, while patches of cross-hatching indicate shadow, and areas of multiple-hatching suggest deeper shadows.

Slide 5: Claude Mellan, French, 1598 – 1688, *The Sudarium of Saint Veronica*, 1649, engraving, Rosenwald Collection 1943.3.6144

The artist used the inherent flexibility of the engraved line to create this image of Veronica's Veil from one single, continuous line radiating out from the center of Christ's nose. The illusion of modeled form derives entirely from the swelling and ebbing of the thickness of the engraved line.

Related Intaglio Techniques

Drypoint

Drypoint is a variation of the engraving technique employing a sharp-pointed tool to incise lines into a plate. The drypoint needle creates a furrow by displacing metal along the side of the line rather than removing filaments of metal from the plate. The debris left along the furrow is called *burr*, and holds ink that prints as a soft, velvety line. Artists sometime employ rich drypoint lines to convey the texture of hair or cloth as a contrast to a sharper intaglio line. The burr deteriorates rapidly during the inking, wiping, and printing processes, so that only the first few impressions retain the richness of the freshly incised plate.

Slide 6: Francis Seymour Haden, British, 1818 – 1910, *Mytton Hall (Lancashire)*, 1859, drypoint, Rosenwald Collection , 1943.3.4806. Note the richness of the drypoint lines in the shrubbery on either side of the door.

Etching

Etching is the other major process associated with the intaglio technique. In etching, the corrosive action of acid is substituted for the manual cutting of the metal plate. While the processes of etching and engraving are closely related, they result in images that have a markedly different character.
An artist begins an etching by preparing a metal plate, usually copper or zinc, with an acid-resistant coating called a *ground*. The etcher draws through the ground with an *etching needle*, exposing the metal below but not cutting into the surface. The plate is then placed in an acid bath, where the acid "bites" down into the exposed metal to create lines. The width of a line is dependent on the size of the tip of the needle, the strength of the acid, and the duration of the acid bath. When the ground is removed, the plate is inked and printed in the same manner as other intaglio techniques.

Slide 7: James McNeill Whistler, American, 1834 – 1903, *The Riva, No. I*, 1879/1880, etching, Rosenwald Collection, 1943.3.8524
Slide 8: James McNeill Whistler, American, 1834 – 1903, *The Riva, No.I*, 1879/1880, copper etching plate, Freer Gallery of Art, F1892.15

An artist holds the etching needle in the same way that a draughtsman holds a pen or a pencil. The etcher draws through the ground on the plate with a similar motion as when sketching on paper, producing an image that can have the informal appearance of a drawing as this etching by Whistler demonstrates. Note the sketchy lines Whistler uses to convey the shadows on the buildings on the Riva in Venice.

An etcher can expose a plate to multiple acid baths, protecting lines by covering them with another ground or a *stop-out* made of varnish, while biting other lines more deeply. In this way, lines are produced of different thickness and intensity, allowing the artist greater flexibility in rendering form and depth.

Slide 9: Jacques Callot, French, 1592 – 1635, *The Fair at Impruneta*, 1620, etching, R.L. Baumfeld Collection, 1969.15.60
In Callot's etching the plate was put into the acid in three separate baths: the very faint lines of the hills in the background were exposed to acid for a brief period, while the lines in the middle distance had a longer exposure, and the heavy lines of the foreground were the most deeply bitten.

Aquatint

Aquatint is the tonal process associated with etching. It was invented in the eighteenth century to simulate the effects of washes and watercolor in intaglio printmaking. The artist begins with a standard etching plate, designating areas of the plate to receive tone. Portions of the image that remain unetched are masked with varnish or another acid resistant substance. Traditionally, a fine layer of resin was applied to the exposed plate manually, and heated to adhere to the surface. Today, a spray varnish often is used. The plate is then placed in an acid bath. In either technique, a multitude of particles stick to the plate, allowing the acid to bite around the particles, creating areas of tone. Various gradations of tone can be created by progressive masking and multiple acid baths. The plate is then inked and printed in the normal intaglio way. Aquatint may also be scraped and burnished in a similar fashion to mezzotint. Whistler never utilized aquatint or mezzotint (the tonal process associated with engraving), preferring either a network of hatching or a veil of printed ink to convey tone. (see below)

Slide 10: Francisco de Goya, *Asta su abuelo (And So Was His Grandfather),* c. 1799, aquatint, Rosenwald Collection, 1943.3.4711.mm. Goya rendered this satirical image attacking the Spanish obsession with lineage exclusively in layers of aquatint tone.

Etching, engraving, drypoint, aquatint and other intaglio techniques can be combined on one plate to produce rich images of great tonal variety. In the nineteenth century, Felix Buhot

created images of contemporary Paris using multiple different intaglio techniques to enrich the surface of his plates, as seen in this print.
Slide 11: Félix-Hilaire Buhot, French, 1847 – 1898, *L'Hiver à Paris (Winter in Paris)*, 1879, etching, aquatint, spit-bite etching, soft-ground etching, drypoint, and scraping on light green laid paper, Rosenwald Collection, 1943.3.1260 Buhot conveyed the effects of a winter storm on both the fashionable upper classes of Paris, as seen in the dominant central image, and the working class and their animals, as seen in the peripheral border illustrations.

Selective Wiping and Monotype

In addition, an artist can create areas of tone in an image by either selectively wiping the ink from the surface, or by applying a thin veil of ink onto the plate. This type of surface inking allows the artist to create numerous variations of the original cleanly wiped print.

Slides 12 and 13: James McNeill Whistler, *Nocturne*, 1879/1880, etching in brown, Rosenwald Collection, 1943.3.8517 **and** *Nocturne*, 1879/1880, etching and drypoint in dark brown, Rosenwald Collection, 1943.3.8518
Whistler applied differing amounts of viscous ink to the surface of the plate in these two variant impressions of the same etching, deliberately creating two clearly different images of the Venetian lagoon. In the lighter impression he conveyed the natural light prior to dusk, whereas in the darker impression, Whistler invests the image with the dim light of twilight.
An artist can create a related type of print by painting with ink on the surface of a blank plate. The ink on the plate can be worked and reworked until the artist is satisfied with a design, and then printed on an intaglio press. This image is called a *monotype*, since only one vivid impression can be made from the design on the plate.
Though this process is at odds with the traditional function of prints, which is to make multiples, it is one of the most popular techniques of printmaking in the United States today. Monotype is particularly adept at capturing the effects of dark interiors and nocturnal illumination, as illustrated in this scene of a ballet rehearsal.

Slide 14: Edgar Degas, executed in collaboration with Vicomte Ludovic Napoléon Lepic, French, 1839 – 1889, Edgar Degas French, 1834 – 1917, *The Ballet Master (Le maître de ballet)*, c. 1874, monotype heightened and corrected with white chalk or wash, Rosenwald Collection, 1964.8.1782

Planographic Processes

Lithography, the earliest *planographic process*, was invented at the end of the eighteenth century. The earlier printmaking processes were based on designs that were printed from a surface that had been physically altered, whether by cutting in the case of woodcut and engraving, or by acid in the case of etching. In the planographic processes of lithography and silkscreen the image is created directly on the surface, and printed by exploiting the chemical

properties of the materials used. As in the older printmaking techniques, the design must be a mirror image of the desired composition, since printing naturally reverses the direction of the image.

Slide 15: Benjamin West, American, 1738 – 1820, *Angel of the Resurrection*, 1801, pen-and-tusche lithograph, Rosenwald Collection, 1947.7.135
West was one of the first painters to experiment with the new process of lithography at the beginning of the nineteenth century. Here he reproduced the effect of a traditional pen and ink drawing rather than exploring the new tonal possibilities of the lithographic process.

Lithography

Lithography is based on the mutually repellant quality of grease and water. An artist begins by drawing a design with a greasy crayon or wash on a porous surface, traditionally limestone, but now often a prepared metal plate. The image is then chemically fixed to the surface. The entire surface is sponged with water, the porous stone or metal plate absorbing water wherever no ink has been used. An ink charged roller is applied to the surface depositing a thin layer of ink on the greasy drawing; the lithographic ink is repelled by the areas of the surface that retain water. The stone is placed face up on the bed of a special lithographic press, paper is laid over the image, and a *scraper bar* applies pressure to transfer the ink to the paper, creating a lithograph. The inking and printing can be repeated almost indefinitely without any deterioration of the design or the image on the stone.

Slide 16: Théodore Gericault, French, 1791 – 1824, *Adelphi Wharf*, 1821, lithograph in black on wove paper, Gift of Ruth B. Benedict, 1994.60.20
Gericault exploited the wide range of lithographic tones available, from bright, white areas through gradations of gray, to the rich blacks of the shadows in the tunnel of the background.

Transfer Lithography

Artists also can use *transfer paper* to draw their compositions, a smooth, waxy paper that can be pressed onto the surface of a stone or plate, transferring the image in reverse. Two obvious advantages of using transfer paper are its portability as compared to the cumbersome quality of stones and plates, and that it allows the artist to draw directly from nature without having to take the normal reversal in printing into account. The action of transferring the design from paper to stone naturally reverses the image so that it reverses back to the original direction in the printmaking stage.

Slide 17: James McNeill Whistler, American, 1834 – 1903, *Confidences in the Garden*, 1894, lithograph, Rosenwald Collection, 1943.3.8720

Relief Processes

Slide 18: Albrecht Dürer, German, 1471 – 1528, *The Rhinoceros*, 1515, woodcut, Rosenwald Collection, 1964.8.697

Woodcut

Relief was the earliest form of printmaking in Western civilization, beginning in central Europe in the late fourteenth-century. At that time, wood blocks were cut with designs that could be inked and printed as decoration on cloth. Later, artists began to design blocks specifically to be printed on newly available, inexpensive paper. The basic principles have remained constant: an artist draws a design on a wood block; the artist or a trained craftsman then cuts away the blank areas of the composition, leaving the lines "raised" above the rest of the surface; ink is applied to the raised lines; the inked block is impressed on a sheet of paper using a specially designed press. As with the other traditional printmaking techniques, the design on the block is a mirror image of the printed composition, since the printing process naturally reverses the original design. Woodcut became the dominant early technique for book illustration since movable type is printed in a similar way. Rubber stamps and typewriter keys are other examples of relief printing.

Slide 19: Albrecht Dürer, German, 1471 – 1528, *The Birth of the Virgin*, c. 1503/1504, woodcut, Rosenwald Collection, 1943.3.3577

A woodcutter uses the same graphic vocabulary as a draughtsman-- dots, dashes, lines and hatchings to create the illusion of three-dimensional form in a composition. In Durer's woodcut, the broad white areas in the clouds, the curtains, and in the women's outfits are sections of the woodblock that have been carved away to allow the white of the paper to show. Networks of parallel lines, called *hatching*, create the illusion of shadows on the floor, walls, and draperies. While the woodcut produces an image of striking black-and-white contrasts and suggesting forms modelled by light and tone, it retains a strong, two-dimensional decorative quality because of the relatively consistent width of the lines throughout the composition.

Wood Engraving

Thomas Bewick first developed wood engraving in the 1790s. The wood engraver works on the end grain rather than on the plank side of the wood. The tight end grain allows for greater detail and tonal variation than the traditional woodcut. The wood engraver was particularly adept at reproducing the tonalities of paintings in print. Wood engraving became the dominant form of magazine and book illustration in the nineteenth century, since the blocks could be printed in relief alongside the moveable relief type.

Slide 20: Auguste Lepère, French, 1849 – 1918, *Paris under Snow, View from St.-Gervais (Paris sous la neige, vu du haut de St.-Gervaais)*, 1890, wood engraving, Rosenwald Collection, 1943.3.5599

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