Pattern within porcelain

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PATTERN WITHIN PORCELAIN

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DEDICATION

To all those who have inspired, taught, encouraged, and helped me.
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INTRODUCTION

Over the past few years, I have learned to observe nature. Although I was taught to study images in nature in regard to drawing and painting, I did not apply these skills to my work in clay until I started my thesis project. I have come to realize that by studying images, designs, and patterns, I may further develop my artistic skills and my attitudes towards aesthetics as well. An understanding of design and design concepts comes when one learns to perceive nature and apply this knowledge to one's work. The development of this perceptual skill has helped my attitudes to mature, enabling me to develop the work I have done for my thesis.

In choosing an idea to develop, an artist needs to review his or her interests and skills. One must also anticipate that there will be growth in several areas—skills, knowledge of techniques and materials, and aesthetics—from the transformation of the idea into form. This paper will organize my concerns regarding the development of ideas and designs, as well as the technical execution of my thesis work.
Ideas do not evolve from a vacuum; ideas grow from one's previous experiences. I, therefore, intend to examine my interests in porcelain and pattern by drawing from some personal experiences in clay, for it is through these past experiences that my interest in porcelain begins.

During the past few years, I have found a wide variety of visual references, both historical and contemporary, that have stimulated my imagination. In doing the research for this paper, I have been able to find many illustrations to draw inspiration from, but few written references to guide me with this paper. For this reason I shall deal more with visual influences than documented statements.

My interest in porcelain stems from a fascination for working with colored clay bodies. Bright, crisp colors cannot be developed from a standard stoneware body. It is for this reason that a white clay body is used. Since I prefer the vitrified quality of a high-fired stoneware to that of an earthenware body, porcelain remains the logical choice for use as the white body.

I prefer to work with porcelain as opposed to stoneware, because I enjoy porcelain in its plastic
stage. The texture of the clay at this stage is very smooth and finely ground, whereas stoneware is usually abrasive. This is a pleasing texture to work with even though the smoothness of porcelain makes it slightly more difficult to manipulate. This fine-grained quality of porcelain also makes it possible to achieve a smooth, polished surface when the clay is fired.

The essence of porcelain's smooth touch when wet is its texture, which is appreciated by all who use it. In describing the feel of porcelain, ceramists often compare it to cream cheese, butter or putty. When emphasized in modeling, this smoothness also gives porcelain its unique capacity for conveying a sense of softness, fluidity and movement.

In terms of aesthetics, one cannot compare porcelain to any other clay body. Porcelain gives a piece a sense of elegance and specialty that a piece made from stoneware does not necessarily have. Porcelain has a historical mystique associated with it—a sense of refinement, not crude or earthy. This quality made porcelain more precious and valuable than gold during the Renaissance in Europe.

It is hardly surprising that porcelain, this clear, smooth substance formed into objects of refinement and elegance came to be admired almost to the point of worship.
This mystique of porcelain led to its veneration, and some of the most important historical and technological advances in clay.

Being an educator, I have learned to cultivate patience and a sense of order during work. Without these qualities, there would be discord and confusion within the classroom. Similarly, these are the qualities I extend to my work in porcelain. The very nature of porcelain dictates that it be handled with patience, not hurriedly rushed into a work, for porcelain is unforgiving when mistreated.

Pattern allows me to work with a sense of order to my work. Pattern lends a logical progression to the design when used. In Peter Stevens' *Handbook of Regular Patterns*, he outlines the logical progression and control one can have over the development of images into patterns. This book also awakened my imagination to the manipulation of an image in a design or pattern.

When I began my studies at RIT, I decided to limit my work to working with pattern and design as part of the structure of ceramic form. The idea for my thesis grew from experimentation working with these limitations. The idea also grew out of some very
elementary design projects that any art teacher might do with his students. Paper snowflakes and paper stained-glass windows are examples of pieces where the design is part of the structure. I appreciated the symmetry of these designs and often thought of how to produce them in more permanent materials. When I would do these projects with my classes, it occurred to me that these designs would be very elegant if produced in clay.

Perhaps the one piece that started my interest in pierced porcelain is a piece illustrated in Thomas Schafer's book *Pottery Decoration* (Plate 2). This is a small Chinese Ming Dynasty bowl with a network of delicately cut lattice. I have marveled at the elegance of the design and the execution of the technique. Thomas Schafer also included the basic technical information I needed to begin my experiments.

As I have said before, there are many visual references to which I have drawn inspiration for my designs. In the next two sections of this paper I will try to relate what I have observed and studied to what I have accomplished. With every new image I see, my understanding of design broadens.
HISTORICAL INFLUENCES

When I began to research the problem I had set for my thesis, I did not realize the scope of possibilities that were feasible solutions of my thesis proposal. Initially, I had preconceived concepts as to the style of solutions that my thesis proposal would generate. I now know that even with the limitations I have set for myself, there is an infinite number of solutions. After researching images, concepts and techniques, the range of possible interpretations seemed boundless. In this section, I intend to examine and discuss the visual references I have found, and the way they have influenced my aesthetic concerns.

Repetition and Multiplication-two simple words. However, the whole world of the senses would collapse into chaos without these two concepts as soon as we lose sight of them, the world seems hopeless and merciless. Everything we love, learn, recognize, accept and put into order we owe to them. The marvellous and mysterious natural laws surrounding us depends on them. The whole world is kept going by them: if they ceased, the universe would fall apart at once.
These are the sentiments of M.C. Escher, who dealt with the concepts of repeating and multiple images in his work. He believed these elements were the unifying forces of his work, as well as nature's. These elements are the integral bonds that hold the composition and rhythm of the world and art together. These elements are also important in my work as the unifying principle. In the illustrations I will survey, I will attempt to show how these elements and multiplication have prompted the variations I have achieved.

In M.C. Escher's work, we can see how an image can be repeated to tesselate an entire surface (Plate 4). To tesselate a surface is to divide a plane in such a way that all of the shapes are identical or the edge of one shape is also the edge of another. We also see in his work that the image repeated is subordinate to the whole. Our eyes tend to group similar images and colors together. This play of images and colors, both positive and negative shapes, create movement around the whole and emphasizes an area.

In Smaller and Smaller (Plate 5), our eyes are drawn into the darkened areas and we follow them in a circular motion around the painting. We are also drawn
into the center of the painting by the gradual reduction of the size of repeating images. In my *Bowl with Paisley* (Plate VI), there is a similarity to the movement M.C. Escher used, if viewed from above. The spiral repetition of the paisley shapes and the use of smaller shapes towards the center, gradually draws the viewer into the center of the pieces. This is also true for some open bowl forms I have made. The repetition of similar shapes moves around the form, causing us to follow. This symmetry is also found in the design of Wycinanki (Plates 6 & 7), Rose Windows (Plate 10) and the mirror images of a kaleidoscope.

Wycinanki is elaborate paper-cutting that originated in Poland, possibly during the first part of the 19th century. They were first made by peasants as, perhaps, wall decorations. There are several different styles of Wycinanki, but the style that intrigues me the most is the Star, or Gwiazdy (Plate 8).

The basic characteristic of paper-cuts is the identity of multi-repetitive motifs, cut out of paper symmetrically and rhythmically composed. This effect is achieved by so incising the specially folded paper as with a single clipping to produce a complete pattern. The technique of paper-cuts is therefore a sort of rationalization, applied with a view to obtaining a decorative composition of an orderly, executed system of rhythmic symmetry, comprising identical motifs.
I am fascinated with the effect the cut areas have on the way we perceive the whole. There is an interesting play between the positive and negative shapes, causing a rhythmic movement around the design. This circular motion is ideal for the design of an open circular form such as a bowl.

From the time that I was young, stained-glass windows, especially rose windows (Plate 10) have been a source of inspiration for me. Placed either above the altar, or above the entry of a church, the rose windows are the focal point of one's attention. The symmetry of these windows is similar to that of the Star Wycinanki. Similar images are repeated around a central point.

There are other aspects to the design of stained-glass windows that have helped me in creating designs. When we view a stained-glass window, we are drawn into the colored areas. Yet there is one element that holds the glass together, that we hardly notice. The lead veins around the glass and the tracery, the stonework that supports the glass panels, could be interpreted in clay. The glass shapes become the pierced spaces and the lead veins and tracery remains as the clay of the vessel. The arrangement of the stained-glass panels would create interesting negative spaces thus becoming a valuable resource for ideas.
When I first began to pierce bowls, I would lay a paper stencil on the form so that the design would radiate away from the center of the form (Plate VII). Since I was interested in rose windows as a source for ideas and designs, I purchased Painton Cowen's book *Rose Windows*. This book has provided me with a rich resource for designs, but there was one window that changed my interpretation of how to partition a circle (Plate II). This window is divided by rotation, causing the design to spiral around the window, rather than moving in rings or rays around the center. By using this configuration, I could create implied movement within my forms (Plates VIII and XIV).

**KALEIDOSCOPE**

Its colors are sparks from rainbows
Dancing, darting with endless surprise
Its patterns vibrate rhythmic motion
Unveiling magic before our eyes.

Sparkling colors chase one another
Round and round in a circle of light
Symmetrical patterns of geodetic design
Mirror mandalas of image in flight.

The kaleidoscope speaks silently
Whispering secrets to man's inner space
Color infuse the psyche with joy
As synchronized pattern spin into place.

Just as the rose windows changed my perception of the division of a circle, kaleidoscopes changed my concepts of pattern and repeating images. With a kaleidoscope, I can easily see images, both simple and complex, re-
flected and repeated. Since I began my thesis, I have collected several different, contemporary kaleidoscopes. These have helped me to seek new interpretations of pattern.

I attended a workshop by Sonia Forseth, who was working on her Doctorate in Mathematics, on the use of mathematical principles used to generate designs and patterns. On a numbered graph that demonstrated a mathematical principle, she would substitute geometrical images for the numbers on the graph (Plate 12a). She would then mirror-image the graph four times around a central point (Plate 12b). This would create movement in the form of a rhombus. By varying the size of the squares in the graph, other interesting movements could be achieved, such as a circle, oval, or a concave four-pointed star (Plates 12 c & d). Her designs are structured similarly to those of M.C. Escher and Victor Vasarely (Plates 13 a & b). Both used mathematical and geometrical progression to create visual movement.

Her work also made me aware of the innovative use of design through pattern. In Yellow Cluster (Plate IX), I applied her principles when I designed the stencil I used to cut this piece. The curves and points of the rim were made by linking together short, straight lines at different angles. Each individual
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repeat was also a repetition of a mirror image around a central point.

Mathematical principles similar to those of Sonia Foresth's work were applied to the creation of Islamic designs (Plates 14 & 15). In these designs a complex image is repeated rhythmically by using geometrical principles around a central point. No longer do we see individual shapes as a separate unit, but as a necessary and important link in joining the whole. We can also see that our eyes will link short, straight lines of different angles into circle motifs radiating from a central point.

Pattern has a sense of order and refinement that has been interpreted in various styles by different cultures. The Chinese pierced porcelains of the Ming Dynasty, brought pattern to a quiet elegance.

Perforation was frequent in some categories of Ming pottery. The most surprising technique, inaugurated under Wan-li and continued long after, consisted in cutting out the wall of bowls or boxes into a sort of geometric lace of perfect regularity (Plate 3)...This work was done when the clay had dried to a hardness like leather and seems to defy the capabilities of human hands. It was called ling-lung ('fine perforations') and also kuei-kung ('devil's work').

Although this technique could be an important design
element by itself as in Plates 2, 3, and 16, it was often combined with color as in Plates 17 and 18. This made the pierced shapes less important to the design, thus losing the effect of positive and negative spaces. Yet the elegance of these pieces inspired other cultures to create works with open-cut shapes. The illustrations on the next pages are but a few examples of the influences these Chinese cut-porcelains must have had on other cultures.

The pierced porcelains made at Serves in France (Plates 19 and 20) during the 19th century represent some of the most elaborate uses of open spaces that I have seen. These pieces are double-wall forms which provide a functional aspect to their design. Not long ago, The Copper-Hewitt in New York displayed Cabaret (Plate 19) at an exhibition of articles related to the service of tea. I was fortunate to see this piece and study it closely. Each piece of the service is a precious gem. The technical execution of this piece is amazing, for one can see the extent to which piercing can be incorporated into a design. Plates 21 through 27 are examples of how different cultures incorporated piercing. When these pieces were meant to be functional, the cut spaces were limited to small lattice work.
There are a few contemporary artists in porcelain who are investigating the design possibilities piercing can create. Irene Sims creates positive and negative spaces as she incises her landscapes (Plate 28). The very simple forms she uses offer contrast to the elaborate and delicate interplay of positive and negative spaces. Sandra Black's work (Plate 29) and Jacqueline Poncelet's work (Plate 30) used various sized dots to create the designs. Even with the use of these simple cut shapes, these pieces have a gracefulness that makes them small, precious treasures. In a similar manner, Alan Whittaker uses wavy lines etched through simple porcelain forms (Plate 31a).

Even though Molly Cowgill, Curtis Benzle, and Rudolf Staffel use solid forms (Plates 32, 33a and 33b respectively), they explore the effects of light and shadows (positive and negative) in their work. All rely on the translucent quality of porcelain when creating their work. Molly Cowgill carves delicate designs into very thin porcelain. Rudolf Staffel uses a special composition of porcelain to control the translucency of the clay. By varying the thickness of the wall of the pot, he creates areas of contrast. Curtis Benzle incorporates opaque, colored porcelain with the translucency of porcelain. All these craftsmen
play with the effects light has on their forms. Light is a very important design element, for it adds drama to these pieces, whether they are pierced or translucent.

Other artists use pattern to create interest. Dorothy Feibelman, Jane Peiser and Tom Hoadley as well as Curtis Benzle use pattern to create movement, balance, rhythm and unity in their work (Plates 34, 35, 36, and 33a respectively). These artisans also play with the contrast of lights and darks, and positive and negative shapes. With the repetition of an image, that image is no longer seen as a separate unit, but as a very important part of the whole. The effect that is obtained is similar to that of other usage of pattern. Each individual shape joins together to complete the image. Because of this repetition, one senses movement around the vessel.

I do not remember when I saw the Scarab Vase (Plate 37) or other works by Adelaide Alsop Robineau for the first time. What I do remember is how impressed I was with her skill as a crafts-person and artist. Many times, we are so impressed by the technical prowess of a person that the design becomes coincidental. This is not the case with Adelaide, for she had a marvellous sense of aesthetic design.
After seeing the retrospective exhibit of her work at the Everson Museum in Syracuse, New York in 1981, I became aware of the versatility she had achieved. After reading Peg Weiss's biography, about Mrs. Robineau, I also realized she had to withstand many of the prejudices of several of her colleagues, even though she was a master craftsperson. Eventually she received the recognition she deserved.

Surprisingly, she was self-taught in the art of china painting.

Adelaide...had early begun to despair of the limitations imposed by the repetition of rote pattern on commercially produced forms...Already by 1900, she longed to create new forms herself.

With the help of friends and the support of her husband, Adelaide experienced the excitement of creating in porcelain.

Although she was greatly influenced by nature, she was inspired by the Chinese pierced porcelain as well. This can be seen in the comparison of the Chinese lantern (Plate 38) and her lantern (Plate 39). This influence may also be seen in the delicately carved, pierced, and egg-shell thin bowl she made. She also used piercing as a decorative element on other pieces. This type of work required an extraordinary
amount of patience and control, yet this quality appears in all of her works. It is inspiring to know that even though she might experience several failures, she would persevere, even attempting more difficult techniques, until she succeeded.

A nonperfect pot rarely left the studio. If Robineau didn't like the glaze, but felt the shape was redeemable, she would reglaze it... Some pieces are reported to have as many as six or seven glazes on them. Undoubtedly, many of her unusual colors and interesting textures were achieved in this manner.

Since 1980, many companies are now producing products that incorporate piercing in their designs. Lenox China of the United States is now producing a series of porcelain vessels with pierced images around the rim of these pieces. A new stationary company has developed a method of piercing very delicate images in paper by using a laser (Plate 1 and 40). Lasercraft developed this technique and now Hallmark Cards is also introducing cards made by using this technique. Corning Glass has developed an "advance technology allowing original works of art to be photographically reproduced in intricate glass...". Onieda Silver has made pierced Christmas ornaments. These are just a few examples of how piercing is being used in commercial products.
Potter, George Mason, while touring in India, began to experiment with abstract paper-cutting. He blended cut, abstract shapes with traditional, pierced patterns, thus creating very interesting designs. Since then, he uses painted paper, through which he cuts his designs and then layers these designs between sheets of glass. This layered effect is similar to the cluster of bowls I have made (Plates VII, IX, X, XI). Although, I have only seen a few examples of his work, I was inspired by his innovative use of cut images in his designs.

How can one begin to discuss all of the diverse experiences that have influenced the growth and aesthetics of an individual? A particular element of an event might catch one's attention, but through careful observation, all of the unique properties of the event will come to light. I have listed only a few of the influences that have affected my work. With every new experience, there will be new ideas and information to analyze and assimilate, and with this there will be growth and change.
AESTHETIC CONCERNS

What shapes a given idea into a particular form?

Any artist working with a given medium develops an intimacy with, even loyalty to, that material. Nevertheless, artists may choose to defy the tradition and inherent quality of their medium as they search for new forms of expression.

A thesis problem only sets limitations and ask questions, but does not offer clear cut solutions. Researching historical influences only helps to elaborate ideas, but again, they do not suggest solutions. What questions does one ask himself to guide one's self to an acceptable and satisfying solution? There is an infinite variety of directions one can move with an idea, yet there is one basic concept that will guide an idea to a successful body of work. Although it may change constantly, one's aesthetic sense dictates his likes and dislikes, which will govern his work.

I have already discussed why I preferred to work with porcelain, yet there are also aesthetic concerns for choosing porcelain. In terms of my aesthetics, I
felt my work should reflect a feeling of lightness and delicacy. Being white, porcelain conveys a sense of lightness, because white is a color that has very little visual weight. This helps to suggest a feeling of lightness.

White reflects light. A white surface also forms a background against even the faintest shadows create dark contrast. Porcelain's whiteness is ideal as an empty stage for the interplay of light and shadow. Shadows provide clues to an object's surface, volume, and form; furthermore, as the rhythms of light and shadow change, movement is created within the work.

The color of stoneware does not lend itself to this feeling as well as porcelain. Stoneware, even when thin and light in color, still has more visual weight because of its color. I have seen several different styles of pierced stoneware, and although these pieces are quite elegant, they do not suggest the sense of lightness that porcelain gives to a piece. Porcelain's white color has a cleanness and crispness that stoneware does not have.

The whiteness of porcelain also accommodates the feeling of openness I have tried to achieve with the cut spaces I have made in each piece. This helps to suggest airiness as well. With so many cuts, there is a great deal of interplay of light passing through the
cut spaces, thus creating fanciful shadows on the piece, as well as on the surface on which it is placed. This play of shadow is an important effect on the repetition of pattern and design. This adds to the rhythm and movement around the piece.

The color white has many different connotations associated with it, most of them delicate and elegant. Snowflakes are white, and some have suggested that my pieces are porcelain snowflakes. When I think of something delicate, the image of white lace comes to mind. The cut spaces imply the delicate and elegance of lace. Although, I do not want my piece to read "porcelain snowflakes" or "clay lace", I do want the association to be there, and porcelain allows this to happen.

Another quality that porcelain gives to my piece is the effect it has when dark colored glazes are placed against a white surface.

The singularity of porcelain's whiteness is attested to by the fact that ceramists past and present, have often left the clay body unadorned or have covered it only with a clear glaze. Porcelain's whiteness however has a unique luminosity that is evident even when covered by a dark opaque glaze...the piece made from white porcelain have a brilliant quality while the other will be dull by comparison.

When a dark glaze is applied to my pieces, the glaze
will become thin on the edges of the cut shapes, thus creating contrast between the darkness of the glaze, and the lightness of the porcelain (Plates V and XII). Here, too, there is an interplay between lights and darks with this contrast enhancing the design.

Most people think of white as a neutral color. On the contrary: as Winkelmann, the eighteenth century art historian, pointed out, white is not the absence of color, but the blending of all colors of the spectrum. Furthermore, white can take on coolness or warmth, dullness or brightness relative to its context.

The form of a piece could also enhance this feeling of lightness. I have chosen the use of simple forms, such as bowls and vases, to work my designs. The open bowl forms tend to lessen the visual weight as opposed to closed bottle forms. Open forms enclose less space than closed ones. This has helped to give my pieces an airy look.

I also felt that using simple forms would help to eliminate any conflict there might be between the use of complex forms and the intricate patterns I would use. Most of the examples of pierced forms I have surveyed limited the complexity of the design to the cut spaces, rather than the form. The few that used more complex forms are, perhaps, too overwhelming and gaudy (Plates 3 and 26). Alan Whittaker and Irene Sims
use the contrast of simple forms and elaborate pierced designs to create graceful and elegant forms (Plates 28 and 31a). This harmonious balance between simplicity of form and complexity of design is what I wish to achieve in my work.

Lori Gottlieb uses simple forms to create light, classical works (Plate 41). She varies her form to gently curved bowls, open vases and elliptical cylinders; yet each allows the form to contrast with the graceful play of lines. These lines create fluid movement. The slipped-cast vases of James Johnston (Plate 42) are more complicated forms than those of Lori Gottlieb, yet he also employs gentle curves in his simple forms. Forms similar to these would integrate well with pierced designs. Both have proof that good design does not have to be complicated.

With each piece there are pleasant surprises. Through experimentation, I have learned to control certain effects, yet until each piece was finished, I could not envision what design the pierced patterns would create. Three repeats would create a triangular rim: four repeats—squares, rhombuses, or four-pointed stars (Plate XIII); five repeats—pentagons or five-pointed stars; six repeats—hexagons or six-pointed stars (Plates VII and IX). Angular placement of the
pattern would create spirals (Plates VIII and XIV), and so on.

The number and position of the repeats reflected the shape of the rim with the shape of the solid uncut areas of the pot. For example, in the Yellow Cluster (Plate IX), there is a solid yellow star enscribed within a six-pointed star. In some pieces, the pierced pattern are rim designs (Plates XII, XV, and XVI), while in others the piercing is an integral part of the design (Plates V, X, and XIV). Yet in either case, there is an interesting play between the positive and negative spaces. The outline of the cut patterns creates an imaginary line between the cut negative spaces and the solid, positive areas of the vessel.

Delicate means beautifully fine in texture and workmanship and is pleasing in the lightness. I want my pieces to exhibit these qualities. My work is to be more decorative than functional, like fine china, cut glass (Plate 43) or silver. In the home, these pieces are considered to be more decorative than functional for these pieces are normally used only on special occasions. One thinks of these items as precious heirlooms and are often displayed in special places in the home. One does not hide the design or the delicate nature of these pieces by placing objects inside of
them. This permits the viewer to see the design without any obstacles. I realize that once a piece leaves my possession, I have no control over how it will be displayed or used. Yet if I make my pieces intricate enough, the design of the vessel will dictate my intention.

One of the experiments I tried was to combine different size bowls, with similar patterns, by placing them together one inside each other (Plates VII, IX, X, and XI). I call these pieces "cluster" since they are a set grouped together. These are taking the concept of repeating patterns on a single surface and making it three-dimensional. I also like the effect of one form nesting inside another, creating a layered effect. This layered effect of rims and open spaces lets hints of what is underneath come through. There is also the effect of one shape duplicating a similar shape enscribed within another shape. Clusters become more sculptural, thus making them strictly decorative. This adds to the preciousness of the piece.

The initial work I did dealing with the use of pattern within the structure of clay, was to experiment with the use of neriage techniques. I had chosen to limit myself to the use of pattern then because I was just beginning to understand the design possibilities
that repeating images would have. The work I was doing, prior to my entrance at the School for American Craftsmen, dealt with the incorporation of neriage images with ceramic necklaces. Each slab-bead of the necklace uses a repetition of the same image. I became intrigued by the way my eyes would group similar colors of each bead together. With grouping of dark and light colors together, interesting positive and negative spaces were created. This caused movement and rhythm around the necklace. The design was symmetrical, suggesting a more formal balance. Intrigued with these possibilities, I choose to work within this format but within vessel forms.

After trying to develop forms that I could use to support these vessels, I began to experiment with cutting patterns instead of using the neriage technique. I had still wanted to work with pattern within the structure of the vessel, and piercing still allowed me this opportunity. Cutting patterns changed the rim of the vessel, for no longer were they straight, but followed the outline of the pattern. What you would see of the top related to what you would see from the side. Wayne Higby plays with the ambiguity of the inside and outside of his vessels. When viewed from the side, the design on the inside
flows to the outside of the pot. Carolyn Brice Brooks also plays with the inside of the bowl to the outside (Plate 44). She uses techniques similar to neriage to create positive and negative designs. In her pieces she plays with color and pattern to flip the viewer from the inside of the piece to the outside, and vice-versa. I want the viewer to see inside and outside at the same time. Breaking the cut of the rim and opening spaces allows this to happen.

I have already discussed the positive and negative effects of the tracery of rose windows and Wycinanki; the rhythmic and symmetrical design of the above; the intricacy of Kuei-Kung (Chinese devil's work) and other influences that have shaped my designs. These have all incorporated pattern or images within the structure of their forms. There are many more possibilities and influences I have yet to discover, but whatever they are, they will continue to change my aesthetic concerns and thus change the direction of my work.
CONCLUSIONS

At one of his workshops, Ken Ferguson made a comment about how the more he studied and observed objects in nature, the more he needed to translate these images into his work. This need created a desire within himself to produce more works of art. At the time, I thought how appropriate his sentiments were to the way I was feeling about my own way of working. It now seems that the more I become aware of the diversity in nature, the more possibilities there are in creating new approaches to one's art.

A thesis should be a culmination of ideas and information learned by which one reaches a certain conclusion. Instead, I am finding it increasingly difficult to reach any resolutions about my art, since with every new idea, question, or image, I see enormous potential.

The knowledge that I have gained from the research I have done for my thesis has brought about a freedom of creativity of design.

The freedom I seek is not one that lets me do what I want to do, but rather a freedom that equips me to be able to do what I need to do.
Comprehension of all that I have learned, has given me the skills to become a more articulate person and artist.
APPENDIX-TECHNICAL INFORMATION

When I began to work with porcelain, the recipe I was given was one used by Judy Cornell. This was also the recipe that Jane Peiser used with her work with colored clay bodies. This clay body has a smooth, workable texture and works well for creating a wide range of colors for use in neriage. This was my initial reason for working with this body. Although, I did not use neriage techniques in my final work, I was familiar with this porcelain body's possibilities and limitations. Since I had a limited amount of time to complete my work, I felt that I would accomplish more if I stayed with a familiar porcelain body.

Now that I have completed the preliminary work, I feel that there are changes that I need to make with the clay body. First, that I should slip-cast the blank forms, so that I could produce these forms more quickly. Second, that I should work with a lower temperature porcelain body. There would also be other advantages to slip-casting the pieces. With slip-casting the pieces I could control the evenness and thickness of the blanks. By press-molding the
pieces, there is a tendency for the pieces to become distorted during a high-fired bisque. Hopefully, slip-casting would eliminate these problems.

Working with the first few pieces, I tried to achieve a transparent quality. Because of the size of the pieces and their cut sections, this quality became an unrealistic expectation for me to achieve. Not only were the pieces extremely fragile to handle in all stages of production, they also warped in all directions during a Cone 9 firing. Lowering the temperature to Cone 6 did not solve this problem. It was therefore necessary for me to give up trying to achieve transparency. This was only a minor set back. By making the walls of the pieces an eighth of an inch thick, limiting the size of the cut openings, and firing them in saggar supports, the warpage problem was solved.

The making of the pieces is quite simple when the skills of working with porcelain are mastered. Large, thin slabs of porcelain are pressed and molded against the sides of one-piece molds (bisqued clay or plaster). Once the surface was smoothed, the blank form is allowed to dry to a point nearing leather-hardness. Timing is important; for if the piece is too wet, there
is the possibility that the piece will stick to the mold, or, that the removal of the cut sections of clay would be difficult and messy. If the clay is too dry, cutting the piece with even a very sharp X-acto knife would crack the pot.

After the blank form had dried sufficiently, the designs were cut through the clay, by using an X-acto knife to trace a paper stencil of the design desired (Plate 45 a & b). After the designs were incised, the cut sections were removed with a needle tool. I found that if the cut areas were removed as I cut, the pot would dry unevenly. This could cause the clay to crack. Any areas of the pot that I was not working on at that time had to be covered with a damp cloth to prevent the piece from drying too rapidly and forming cracks.

With the use of the paper stencil, cutting and repeating the pattern was easy to do, particularly against the side of the mold. Cutting against the mold helped me to avoid cutting too deeply and slipping with the knife. Cracks and slips of the knife could be repaired either by using a mixture of Elmer's Glue-all and powder bisqued porcelain grog, or a product from Duncan Ceramics called "Patch-a-Tatch" (repairs with
either mixture could be made even after the pot was vitrified).

Once the pot had stiffened enough to retain its form, it had to be flipped out of the mold. This procedure required steady nerves. To remove the piece from the mold, the mold was flipped upside down, gently catching the piece with a foam cushion. Perfecting this tricky maneuver required the help of a friend who turned the mold upside down while I held the piece against the mold until it could slip from the mold without damage. This was a bit tricky, for if too much pressure was used when holding the piece in place, the piece could easily break or become distorted.

After the piece was removed from the mold, all cut edges had to be cleaned and smoothed with either a damp sponge, a damp, soft-hair brush, or very fine steel wool. This was done to remove any rough areas or marks made when cutting and removing the excess clay.

To allow for easier handling and further refinement, a bisque firing was done, followed by a high-fired bisque to Cone 7-8. This allowed the clay body to mature, but it was not hot enough to prompt warpage of the piece. Wide bowls had to be fired in clay saggars to prevent distortion of their forms.
Fortunately, vase forms were able to support themselves with little distortion evident at high-firing temperatures.

With the bowl being fired in saggars, glaze could not be applied for high temperature firings. For this reason, I chose to do Cone 05-04 glaze firing. This required searching for glaze recipes of a clear and white glazes to which colored oxides and commercial stains could be added. There were other considerations which I had to be concerned with in choosing the glazes I would use. A main concern of mine in choosing glaze recipes was the application of the glaze to the pot. Since the pieces were already vitrified, the only way the glaze could be applied was by spraying; for this reason, I wanted the chemical composition of the glaze to be non-toxic. In a low-fire glaze, this meant looking for glaze recipes that did not use lead as a flux. This limited the effects I could achieve, but even so, I was able to achieve a wide range of colors including pinks, yellows, deep green, blues, brown, and blacks.

Spraying the glazes was a time-consuming process. In order for the glaze to adhere to the piece, the pot had to be heated in the kiln and then sprayed. This
process had to be repeated several times until the desired thickness of glaze had been applied. Occasionally, a colored slip was sprayed on a piece to create a variegated effect (Plate VII). Then a clear glaze was applied over the slip. Once the piece was covered with glaze, it was refired at Cone 05-04 in an oxidation atmosphere. Although, I did try a series of test glazes in a low-fire reduction firing (which produced some interesting effects), I did not have the opportunity to try the results on any of my pieces.

There were a few problems with the fit of the glaze to the pot when fired at low-temperature. The clay body, being vitrified, does not allow the glaze to fuse to the clay body. Most of the glazes I used had a tendency to become fluid and drip to the bottom of the pot. This extra glaze had to be ground from the pot. After reading about Adelaide Alsop Robineau's experiences, I did not feel badly since she mentioned having this problem with her glazes. Usually, lowering the firing temperature was enough to solve this problem.

I have read about many different ways of cutting and piercing porcelain. Dorothy Feibelman of England says she works her pieces painstakingly when the clay

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is bone dry. She gently rotates a very sharp knife from both sides until she only has vein-work left (Plate 46). Even though her pieces are small, she loses many throughout the procedure.\textsuperscript{21} Alan Whittaker, on the other hand, takes vitrified porcelain forms and sandblasts his designs thru the wall of the pot. This is a very time-consuming and laborious technique, often taking several hours to cut through.\textsuperscript{22} These and other piercing techniques (Plate 47) I have read about have several things in common; they are all time-consuming, nerve-racking and laborious, and require a great deal of patience. The most noticeable common factor associated with this technique of working with porcelain is the magnificence of the final piece of china.
FOOTNOTES


2. Ibid., p. 66.


8. Ibid., p. 19.

9. Ibid., p. 95.


12. Ibid., p. 145.

13. Pamphlet from Corning Glass.


15. Ibid., p. 48.

16. Ibid., p. 46.

17. Ibid., p. 48.


22. Ibid., p. 169.
Sources of Illustrations


Plate 5. Ibid., p. 22.


Plate 7. The Collection of Donald Bujnowski.

Plate 8. The Collection of Donald Bujnowski.


Plate 11. Ibid., p. 71.


Plate 13b. Ibid., p. XXXIX.


Plate 15. Ibid., p. 75.

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Plate 31. Ibid., p. 149.


Plate 38. Ibid., p. 90.

Plate 39. Ibid., p. 3.


Plate 43. The Corning Museum of Glass, Corning, New York.

Plate 44. Carolyn Brice Brooks.


Plate 47. Ibid., 140.


