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MASTER OF FINE ARTS

PROTECTIVE ADAPTATIONS

by
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I would like to express my appreciation to those individuals who have helped me through this journey of producing my thesis. While they are too numerous to mention, they have helped by advising, constructing, lifting, encouraging, welding, and listening to me as I completed the three year process which has culminated in this work.
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INTRODUCTION

Nature is so vast that much of its entities go unseen, unexplored, and are unappreciated by humans. This thesis has allowed me to further explore the subtleties in nature that often go unnoticed. Through my study of: seeds, shells, cocoons, chrysalises, nuts, rocks, nests, pods, and vast amounts of other natural entities, I have expanded my interest in organic forms. In doing so, I have also become intrigued by the barrier or “skin” that serves as a protective border separating the exterior from the interior of the organism. Many of nature’s organisms have been forced to adapt in order to survive and reproduce by growing protective structures such as horns, thorns, waxy coatings, thick skin, poisonous secretions, dense fur, etc. These defense mechanisms protect the vulnerable interior organs of each organism.

Through my exploration of nature, I have noticed connecting parallels between humans and nature. Ultimately, my thesis is an expression of nature and a metaphor for human behavior. Humans devise their own protective facades and masks to hide from others their own frailties, emotions, weaknesses, and vulnerabilities. Contrarily, humans often praise their qualities, strengths, skills, and overall success. Humans, like other natural organisms, equip themselves with coverings, which protect them physically from climatic conditions and from danger due to physical contact such as warfare and sports. Other protective coverings can be in the forms of a house, automobile, clothes, eye wear, ear wear, sun-block, and an array of other materials that serve as protective “shields” from external harm. People, as many natural organisms, also conceal their inner beings. For humans, this would not only include their vulnerable organs, but also their inner thoughts, feelings, and emotions.
I have produced five pieces of sculpture which support my thesis. Each sculpture is an exploration of organic forms and the contrasting characteristics between protective exteriors versus vulnerable interiors. Within every sculpture exists a contrast. To intensify and justify these contrasting qualities between exterior and interior, a variety of materials were incorporated into each sculpture. Some materials were used to exhibit strength, while others were used to show signs of fragility.

I chose glass as the primary medium because it can easily represent strength and massiveness, yet be fragile and brittle. The wide variety of colored glass attracted me into incorporating stained glass into my sculptures. Not only is color a quality I was drawn to, but working with stained glass is a more direct medium for me, than painting, drawing, or computers. Finally, glass seemed to be the chosen medium, since it is made up of components of nature, mainly sand consisting of silica.
INFLUENCES

Influences in the production of my thesis have actually stemmed from my childhood. Throughout my life I have continued to live in the country. I have had direct contact with nature and its many inhabitants. Not having many neighbors and children with whom I could play, my time was often spent with my dog, Pepper, outside. I was curious about all the things I could find in the woods, pond, fields, dirt, etc. Such things as the intricate spiral of a snail’s shell or the finding of a chestnut fascinated me. I was also curious as to what was inside this shell or that pod; as a result of my curiosity, I would open it to find out.

I am still interested in nature in much the same way. However, my interests and desire to know more about nature have spread far beyond the fields, woods, and pond that surround my home. I have reverted to my simple childhood only to explore more deeply nature’s small existence’s.

During my senior year at Allegheny College, my interest in nature was clearly evident in my thesis titled: The Price of Oil. Its focus was the price animals had to pay, with their lives, from the devastating effects of the Exxon Valdez oil spill, and ultimately the effects of human carelessness on nature. The Price of Oil served as an educational awareness series. This interest in nature has carried into my graduate studies at Rochester Institute of Technology. The influences from my childhood and undergraduate thesis, have led me to present nature in my own, unique way.

My sculptures express nature in a different manner than other artists. For instance, Thomas Cole and other members of the Hudson River School, chose to express nature as a romantically appealing totality.\footnote{Gardner’s Art Through The Ages, pg. 884.} Simply stated, nature was depicted
as an idealized landscape or paradise. I am not interested in representing nature romantically or in its entirety such as showing a vast array of trees, streams, sky, clouds, hills, and valleys, etc. Rather, my focus is on individual items in nature: pods, cocoons, shells, etc., which represent nature as a whole in and of themselves. Also, my thesis is a metaphor for human qualities.

I am not trying to create a direct realistic representation of nature as the painter John Constable, whose natural landscapes are a “quest for [the] reality in the world.” If I desired to realistically portray nature, I would go out in nature and find a real pod or cocoon…not try to imitate it. Nor is my work similar to the Impressionists like Claude Monet. Monet believed “that what was real in nature was the light and color stimuli it revealed to the analytic eye.”

Often one thinks of stained glass as being a medium in which light is transmitted through the glass, emitting vibrant colors, such as those seen in a Cathedral, a temple, or even a lampshade. I am not using light as Louis Comfort Tiffany or Marc Chagall did…where light passed through the stained glass in order to intensify color; thereby generating emotions and feelings. Also, I am not interested in light passing through the glass to intensify its already existing color. I am more concerned with the form of the object as a whole and in incorporating contrasting characteristics of exterior verses interior.

Harumi Yukutake is an artist who influenced me during my thesis. I saw her three-dimensional, peanut-shaped, glass sculptures in The Glass Skin exhibition at The Corning Museum of Glass (figure 1). The form and idea behind Yukutake’s sculptures were similar to my sculptures and never before had I seen her work. She incorporated
clear, plate glass in her sculptures (figure 1). The clear, plate glass was “skin-like” and made me realize that real skin can appear translucent and reveal what lies underneath. Nevertheless, skin serves as a protective covering for many organisms. I felt that the idea of “skin” serving as a protective exterior fit within the characteristics of my thesis....protective exteriors vs. vulnerable interiors. With the influence of Harumi Yukutake’s work and The Glass Skin exhibition, I created my fourth sculpture: Skin (figure 7).
Figure 1 Untitled  Harumi Yukutaki
The *Pod* symbolizes a continual cycle of life and growth. One can see (figure 2 & 3) the brilliant green colored glass of the *Pod*, which serves as a covering to conceal and protect its inner contents. Like an unopened gift, within each of nature’s milkweed pods exists an environment which goes unseen until opened. This mysterious inner enclosure produces curiosity which I wanted to share with the viewer. I didn’t reveal the entire inner contents of the *Pod*; however, I revealed a clue to its contents: copper wires, which are vulnerably exposed at both ends of the *Pod* (figure 2 & 3). This copper wire symbolizes the milkweed pod’s seeds which in nature, disperse and spread in hopes of landing in an ideal setting where they will continue the cycle of the milkweed pod. This in turn represents the cycle of humans and ultimately all of nature. Hence, my production of the pod is a representation of the cycle of life.

In reality, the milkweed pod is a very small object in our natural environment. As a result of its minimal size and minimal impact on society, it often goes unnoticed. To me the *Pod* symbolizes not only life, but all the little organisms in nature that are forgotten or go “unseen.” With this in mind, I chose to make the pod more noticeable. So, I made it much larger than it really is in our natural environment (figure 2). To represent its existence, beauty, and importance in this world, the *Pod* is placed on a pedestal as though it were a trophy (figure 2) instead of the common white pedestal which is used to display art. The white pedestal is intended to be invisible, allowing attention only to the work it displays. The trophy like aspect, allows the *Pod* to be bold and more inviting for the viewer. It brings the viewer closer…not limiting their distance or space (figure 2). In addition, the cradle effect of the pedestal is a motherly aspect (figure 2 & 3). The cradle’s nestled effect not only secures the *Pod* on the
pedestal, but reflects the fragility of nature’s organisms. Lastly, the black velvet, covering the cradle of the pedestal (figure 3), was incorporated to show the viewer the importance of natures’ organisms and that nature should be respected as though it were royalty.
Figure 2. Pod
Figure 3. *Pod* Detail
The Cocoon explores the concept of a mysterious secretive space surrounded by a protective exterior (figure 4). This interior space is tightly contained and secured by the surrounding, yellow glass (figure 4). The glass appears tightly wrapped, to suggest a sense of security and a defensive border which separates the interior from the exterior, similar to the green glass of the Pod. The spikes (figure 4), symbolizing thorns commonly found in nature, clearly indicate a protective device as an additional means of defense- to ward off and discourage the invasive intruder.

The Cocoon, unlike the Pod, is displayed on a large, white pedestal. The pedestal is designed to be quiet, plain, and invisible. So the viewer’s attention is drawn to the piece itself.

Many organisms in our natural environment use color to attract their prey before they attack. The Cocoon is paradoxical. The bright yellow, marble glass attracts the viewers attention and lures them closer (figure 4). However, the prominent, black spikes suggest to the viewer not to come too close, but to keep their distance or they will be harmed (figure 4).

Instead of using a manmade fiber to simulate a natural insulator. I chose to incorporate wool for the interior of the Cocoon (figure 4). Raising sheep since I was eight years old, I discovered that wool is the perfect insulator. Wool allows warmth in cold weather and because of its “breathable” nature, allows heat out in hot weather.

The Cocoon not only reflects nature, but that place or home where a person feels comfort and security. We all want to feel protected, safe, and comforted in our own “home.”
Figure 4. Cocoon
SPIRAL

Spirals are evident in many of nature’s organisms: the coil of a snake, the tendrils of a plant, the pattern of a snail shell, etc. Spiral, my third sculpture, is a representation of a snail shell (figure 5 & 6). Instead of replicating the tightness of a coiled snail shell, I desired to make the sculpture appear as though it were uncoiling itself and exploring its surroundings, stretching and reaching into space; thereby, exposing its vulnerable interior (figure 6).

Compared to my previous sculptures, Pod and Cocoon (figures 2 & 4), this “spiral” form resulted in a more spatial sculpture. The “spiral” which I have created is a positive form, utilizing negative space. Utilizing negative space into my sculpture was an important turning point for me because my previous sculptures (figures 2 & 4) are tight, positive forms. The form of the spiral creates a negative space; thereby, exposing its vulnerable inner cavity to the viewer (figure 6).

The Spiral and the Cocoon are similar in that they both have a soft interior. However, the Cocoon’s soft, yellow wool (figure 4) emits a feeling of comfort and passiveness, while the red-purple coloring of the felt is a more dynamic and sensual material (figure 6). Because the Spiral is uncoiled, it unveils the luxury of the felt, which is inviting the viewer to step closer. Contrarily, the Cocoon invites the viewer closer… only to warn them, by its spikes, not to come too close.

Similar to the Pod and the Cocoon, the marbled glass of the Spiral serves as the protective exterior. Because its “armadillo-like” plates of glass are unharmed and intact (figure 5 & 6), the spiral resembles a newly budded plant which hasn’t endured anything at that point.
The Spiral is exposing its vulnerable interior, which is bright, dynamic, and sensual. Nonetheless, by exposing itself, the Spiral is taking a risk. A risk of being harmed. This is a metaphor for humans. Many times a person hides their inner emotions because of lack of courage and/or to avoid the risk of being hurt.
Figure 5. Spiral
Figure 6. *Spiral* different view
SKIN

The Skin portrays rebirth and transformation, phases in the life of organic organisms. The "skin-like" covering, in Skin, is a symbol for protection which enables the survival of future organisms. The exterior of the Skin is irregularly sandblasted, clear glass (figure 7). In addition, I used wood stain, irregularly applied to the surface of the glass. The wood stain gives a weathered, dirty, and aged appearance to the glass...showing that the Skin has endured natural elements (figure 7). The form of the Skin, cracked, broken, and missing pieces of glass, exhibits physical characteristics of a dried, aged, and weathered milkweed pod (figure 7), which has fully matured. This is evident through the copper wire, which symbolizes milkweed pod seeds, which appear to be sprouting, dispersing, and growing out of the "skin" or "shell" which now, cracked open, once fully enclosed and protected them.

Skin is a literal reference to organisms that have a type of "skin" which covers, protects, and can even be shed. For instance, snakes shed their skin...a rebirth or transformation from a dull faded skin, into a brightly colored new skin. This rebirth and transformation metaphorically exists in humans. Humans have many emotions, layers if you will. Our emotions, lifestyles, education, careers, friends, family, relationships, and a vast amount of other importances transform our lives.

The interior lining, or "self," is a pinkish colored wax (figure 7). This is another coating used to simulate skin, to protect and cushion the copper wire (figure 7). This multilayer of "skin" is evident in other organic organisms, including humans. Humans have layers of skin and fat to protect organs and bones from being injured.
As a result of natural selection, the strong organisms survive. This is evident in the *Skin*. The copper wires that appear black and crimson colored (figure 7), I burned to suggest that not all the seeds will live to become milkweed pods.

Humans are similar to the seeds. We all try and survive the best we can. We compete with other humans for our whole lives. We do so in order to succeed and be respected. It is our nature to survive through competition in this world the best we can...not only for ourselves, but for our children and other generations to come.

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5 *Great Books of the Western World: Darwin*, pg. 43.
Figure 7. *Skin*
The Venus flytrap was a reference for creating and designing the *Fly Trap*. With all five of my sculptures, form is a concern. The form of the *Fly Trap* (figure 8) is my own simplified expression of an actual Venus fly trap. The *Fly Trap* is different from my previous sculptures because this time the glass is depicted as fragile and precious, by being protected by the exterior steel which demonstrates strength and endurance (figure 8 & 9).

The exterior of the *Fly Trap’s* steel shows signs of aging. One can notice its been exposed to weather conditions by the discoloration and rust which has accumulated on its surface (figure 9). In addition, the surface of the *Fly Trap* exhibits scratches, abrasions, bumps, and other irregularities which suggest abuse (figure 9). The steel is an obvious protectant, enduring for the sake of the interior contents, protecting the vulnerable pieces of glass within.

The long spikes protruding from the body of the *Fly Trap* are brought together and intertwined to suggest a defensive position (figure 8). This defensive stature of the *Fly Trap’s* spikes beyond the boundaries of the pedestal invade the space of the viewer, allowing the viewer to feel vulnerable (figure 8).

The interior steel shows little signs of rust and discoloration. Rather, the original silver color of steel has been retained. The frosted, plate glass of the interior appears fragile and vulnerable (figure 9). The sandblasted glass is a symbol of life, purity, and hope (figure 8 & 9). Furthermore, each piece of glass is pointed heavenly to imply spirituality, holiness, and faith.

The size of the *Fly Trap* allows it to be easily noticed and demonstrates its importance and existence. It’s size is also somewhat proportional to the size of
humans. I wanted the viewer to understand that the Fly Trap, and ultimately all natural organisms and humans are on an equal plane. If the Fly Trap were larger than the viewer, the statement would be that it was dominant and overpowering. This piece through its spikes is showing a threatening aspect. Humans too can be threatening. Therefore, if the object is similar in size to humans or placed on a human scale, humans can relate more to the object without feeling inferior.

The Fly Trap is my final attempt in my thesis, Protective Adaptations, to express a contrast between exterior strength and interior vulnerabilities, which ultimately is a metaphor for human qualities of defensive barriers and frailties.
Figure 8. *Flytrap*
Figure 9. *Fly Trap* detail
TECHNICAL DISCUSSION

Stained glass and plate glass are flat and naturally want to stay that way. I wanted to work with stained glass and plate glass as it was originally intended to be...flat, instead of slumping or fusing. I was interested in taking these flat pieces of stained glass and uniting them to create a three-dimensional sculpture, which was a new concept for me and is a relatively new concept in the field of glass. I produced five three-dimensional sculptures which supported my thesis.

Each edge of stained glass is ground to allow the copper foil to hold securely. Once the copper foil is applied, to each edge of stained glass, then the flux, a liquid consisting of zinc chloride, is brushed on the copper foil of each piece of stained glass. Next a hot soldering iron melts the solder onto the prepared surface of the copper foil. The flux is a chemical agent which must be used in order for the solder to bond with the copper foil. After soldering the stained glass pieces I used a tooth brush to apply a solution of "flux remover" and water on the soldered joints. This solution removes any remaining flux from the solder. If this is not done, the flux will oxidize over time and a white, powder-like residue will form on the solder....even if the solder is covered with paint or patina. Eventually, the oxidation will deteriorate the solder joints. As a finishing touch to the solder joints, I applied either black rustolium paint, black patina, or acrylics... depending on the sculpture (figure 2, 3, 4, 5, 6, 7).

The tricky part in creating a three-dimensional, stained glass sculpture is the curvature of the form. I realized with my sculptures that if there is a sharp curve in the form, the soldered copper foil tends to pull away from the stained glass. To overcome this problem, I used a wider copper foil (5/8") and at times I used two layers of copper
foil. I discovered that running thin, copper wire along the copper foil, and then soldering on top of them both, made for a stronger joint.

Another problem I found was the small expansion of the form of the sculpture caused by the solder. If pieces of stained glass, ready to be soldered, are not tightly placed together, solder gets between the copper foil edges of stained glass and takes up space; thereby slightly expanding the form. This small gap filled with solder can account for a lot of space.

Compared to my previous sculptures, my first intent with the *Fly Trap* was to refrain from using solder and stained glass. Instead I wanted to use sand-blasted, plate glass, which would be glued to the steel (figure 8, 9). My second intent was to incorporate a cold, bold, strong material that would represent strength, durability, and perseverance, and would show signs of aging through rust and other discolorations. Steel, is a medium that could demonstrate these characteristics (figure 8, 9).

Before the glass was included in the sculpture, the steel sculpture was placed outdoors to endure natural elements to acquire rust. Certain parts of the sculpture rusted more than other parts, resulting in uneven rust patterns. To further enhance certain sections of rust, water and salt-water was repeatedly applied. Steel wool was also used to remove any unwanted rust.
CONCLUSION

All of the five sculptures possess qualities of “skin.” Skin is a kind of barrier, a covering, a sheath that separates the interior from the exterior. In reference to The Glass Skin exhibition at The Corning Museum of Glass, Suzanne Franz stated:

“Physically [glass] it is the border between the interior and the exterior of the object, raw or serene, obscured or subtly activated by light; metaphorically as the point of extreme vulnerability, a protective or divisive barrier, or a component of illusion; and literally as a peculiarly appropriate means to evoke the body.”6 I found this quote by Susanne Franz to be especially appropriate to my master’s thesis. In my sculptures I have shown a variety of organic forms which demonstrate qualities of “skin.” These “skin-like” qualities serve as defense mechanisms to protect the vulnerable organs of each organism.

Through my exploration of nature, I have noticed connecting parallels between humans and nature. Ultimately, my thesis is an expression of nature and a metaphor for human behavior. Humans devise their own Protective Adaptations and masks to hide from others their own frailties, emotions, weaknesses, and vulnerabilities.

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6 The Glass Skin. pg. 12.
WORKS CITED

