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Rochester Institute of Technology

A Thesis submitted to the Faculty of the College
of Imaging Arts and Sciences in candidacy for the
degree of Master of Fine Arts.

Embryonic Development

by

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9/9/1997

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TABLE OF CONTENTS

LIST OF ILLUSTRATIONS	-----	b
INTRODUCTION	-----	1
INFLUENCES	-----	3
THE WORKS	-----	8
TECHNICAL INFORMATION	-----	20
CONCLUSION	-----	23
BIBLIOGRAPHY	-----	24

LIST OF ILLUSTRATIONS

Figure	Page
1. Dan Flavin, <i>Untitled(fondly to Mongo)</i> , 1986	----- 5
2. Eva Hesse, <i>Ringaround Arosie</i> , 1965	----- 7
3. <i>Growing</i> , 1996	----- 9
4. <i>Growing</i> -Detail : the former term	----- 10
5. <i>Growing</i> -Detail : the latter term	----- 10
6. <i>Blossom</i> , 1996	----- 12
7. <i>Aging</i> , 1996	----- 13
8. <i>Tissue Assembly</i> , 1996	----- 15
9. <i>Untitled 1</i> , 1996	----- 17
10. <i>Untitled 2</i> , 1996	----- 18
11. <i>Untitled 3</i> , 1996	----- 19

INTRODUCTION

This thesis is the product of my struggle in realizing the art and nature inherent in embryonic developmental structures. At Rochester Institute of Technology, I explored different ideas and methods yet could not find one subject that encompassed all my interests. However, experimenting with many ideas my first year at graduate school, I found one concept that combines my preparation for my future as an artist, and my interests in the embryo : embryonic development.

Embryonic development not only conveys my development of artistic merit but captures the conversation between nature and myself. Nature reflects images of me and teaches me about life. All creatures in nature are mystical, original and growing. I explore nature to understand its language to transform its creation into 'live' sculptures that breathe and move like real creatures. My sculptures were thus intended to convey mystery and change.

Neon and glass are ideal materials to express enigmatic living creatures and the visual effect of light through glass resembles abstract painting. The harmony of materials in my sculptures depicts the mitigation of my internal struggles and signifies the idea that nothing can be perfectly grown. I believe

nothing can be completely mature. My thesis about embryonic development encompasses my varied interests, which include my never-ending journey to artistic maturity and the exploration of nature's language in me.

INFLUENCES

People are affected by nature in many ways because the power of nature is unimaginable. As a flower blooms, then dies in the unending circle of life, people undergo a continual process towards maturation. I grew up in a small city, surrounded by beautiful mountains and valleys. Because my family loves nature, we went camping, hiking, and searched for places untouched by man. I became a nature investigator at a young age ; this was when my conversation with nature began.

These valuable memories influenced my views about life. My primary curiosity lies in the origin of the universe, its beginning and its continued process to maturity. After life was created by God, it developed and ripened ; this mystery and wonder of life is in its development. This is depicted in my 'live' sculptures : from the moment of creation and beyond.

My research of lights started when I was a child. I could never remove the stars nestled in the heart of the mountains from my memory. There were more stars there than my mind could imagine. I was scared that the stars would pour down on me, but I could not turn my eyes because it was unbelievably beautiful, more beautiful than my mind could conceive. Watching stars transported me to

special places within myself and began my interest in other kinds of lights.

With my special memories about light, I had a chance to learn about neon light four years ago. I found neon a very magical manifestation but at the same time used as part of the commercial subculture. When I saw the neon sculptures of Dan Flavin, in the Guggenheim museum in Soho, New York City, I couldn't move for a while because of the countless stars which reflected from the power of light (Figure 1). His sculptures are very minimalistic. In Flavin's spatial neon sculpture, the primary colored light tightly filled the big hall. He created a new environment with light, using light as a painting ; each light contributed to the shading, depth and the contrast between inner space and outer space. When the neon lights turn off, they are dormant until they are activated again. The lights react directly upon one another, as two adjacent painted surfaces would. Further, the diffusion of light creates a surrounding that emphasizes the subject. The neon light focuses the viewer to the inherent life of the sculpture.

Although I had interest in neon light, it could not fully express my ideas because it is linear and fragile. Also, my interests expanded further to experimentation with other materials. I found the use of materials and light in the common sense sculptures of Eva Hesse (Figure 2). Her early works generated quality painting and sculptures that combined and mobilized color and light in a

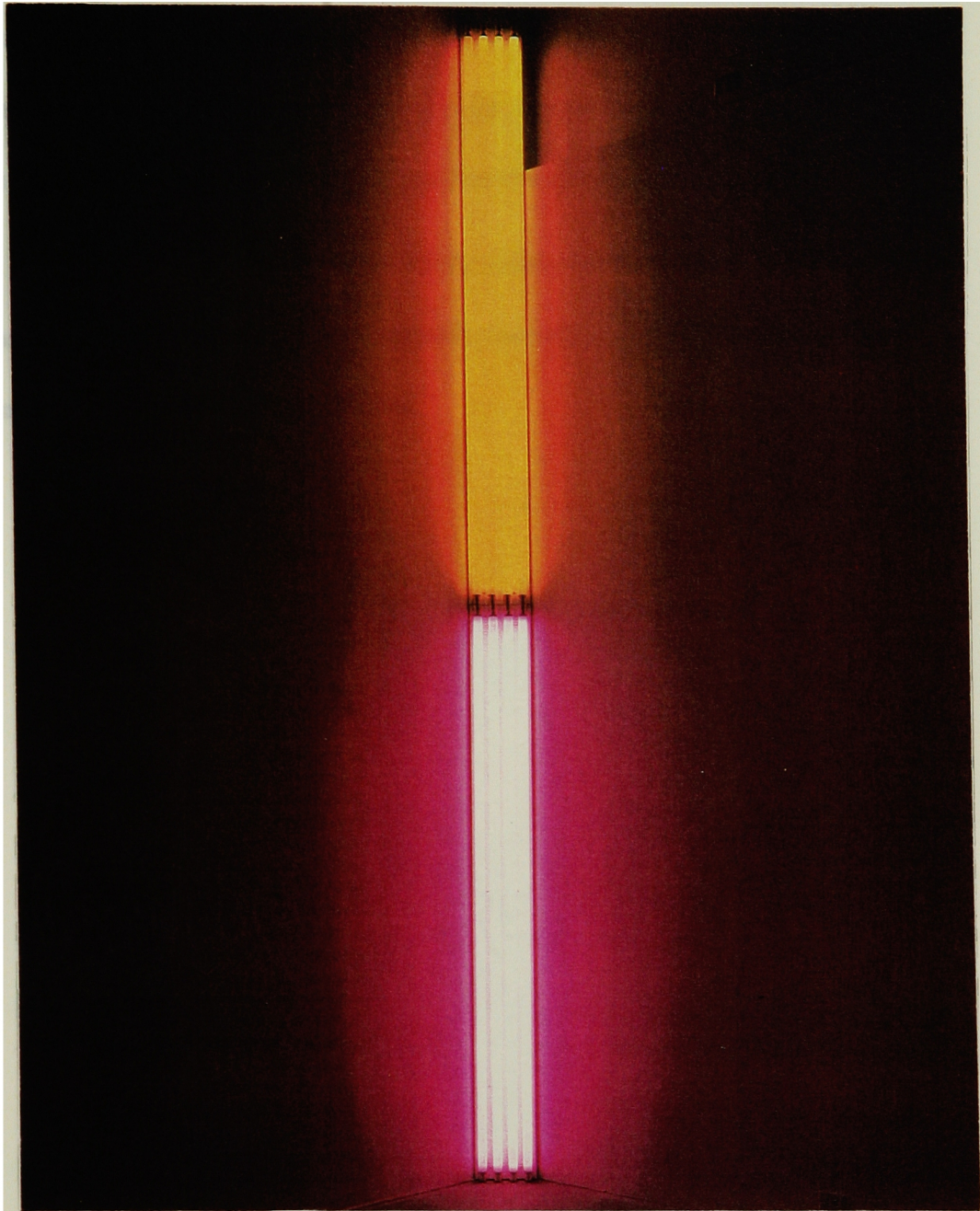


Figure 1. Dan Flavin, *Untitled(fondly to Mongo)*, 1986

mixed form. In her minimalist works, I saw the struggle to escape two dimensional space : a dimension between the second and third. I have included this combination and mobilization in my idea of embryonic development.

It was difficult writing down all the influences that shaped my twenty-six years of life into one theme. My valuable research at R.I.T. made me settle and arrange my memories and impressions.

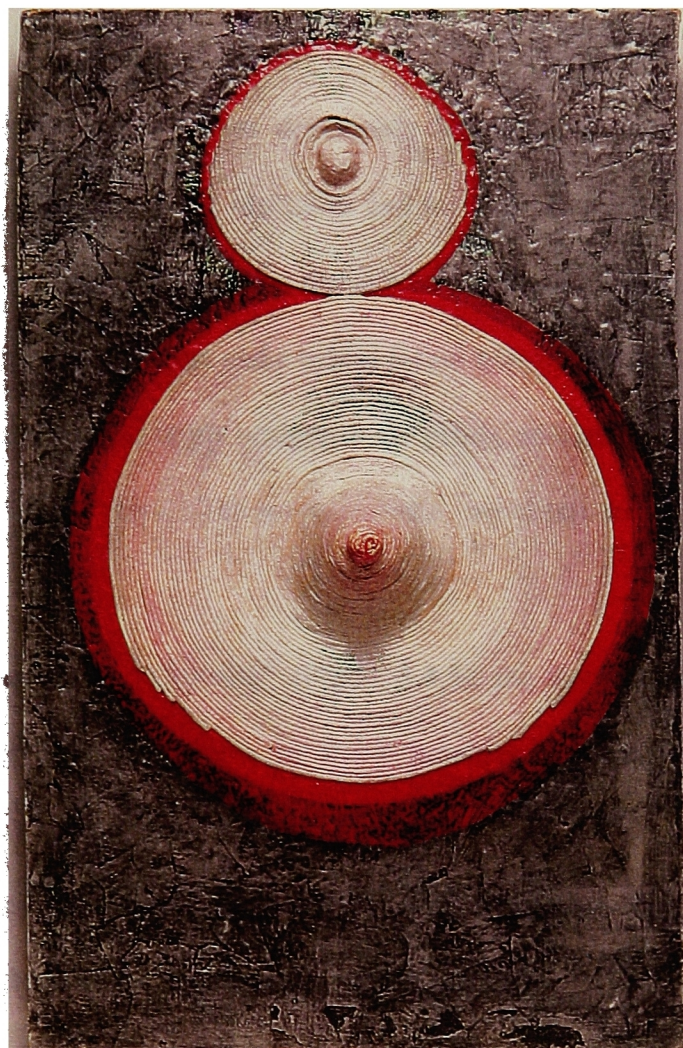


Figure 2. Eva Hesse, *Ringaround Arosie*, 1965

THE WORKS

My inspirations came from developing language between nature and myself. I used fragments of my memories and my own maturation as a motif. Beginning with my first sculpture, and throughout my thesis, I show the step by step process of growth. I tried to make hybrid forms which combined all kinds of embryos. The active forms in my sculptures are plants, animals or myself which are all aspects of the embryo. The seven pieces in my thesis are all related and affect each other.

In my first work, “Growing” (Figure 3,4,5), the developing forms and colors of the lights are like frame by frame graphics in comic strips. It is developing very slowly and very subtly changing. With this idea in mind, I combined two and three dimensions to imply ‘live’ sculpture. The sculpture in itself never ends because the last disunited section grows.

My second sculpture, “Blossom”(Figure 6), states the moment of development where a seed bursts : the beginning of growth. I used to raise touch-me-not flowers when I was a child. In the old days of my country, people used touch-me-not flowers as nail polish. I put the mashed petals and leaves on my nails at night and, in the morning my nails were scarlet. Based on a legend, if I

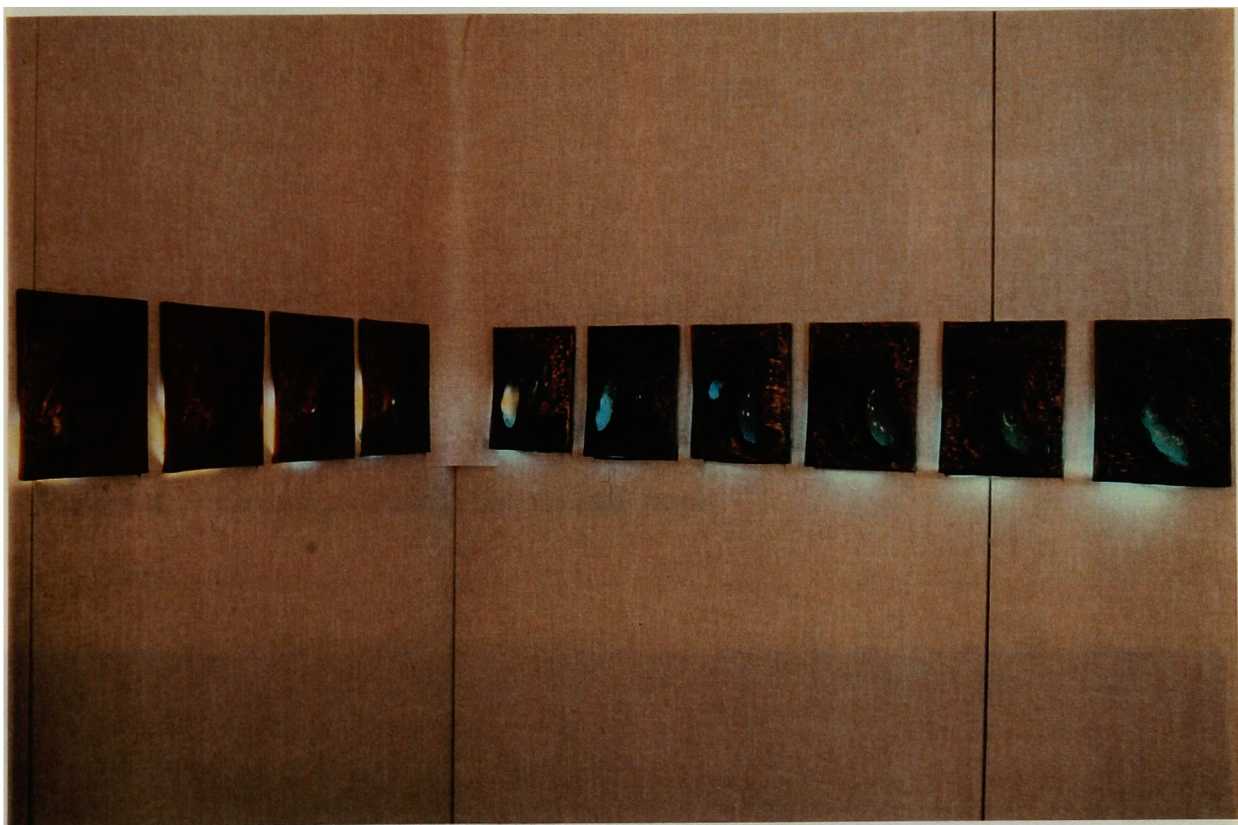


Figure 3. *Growing*

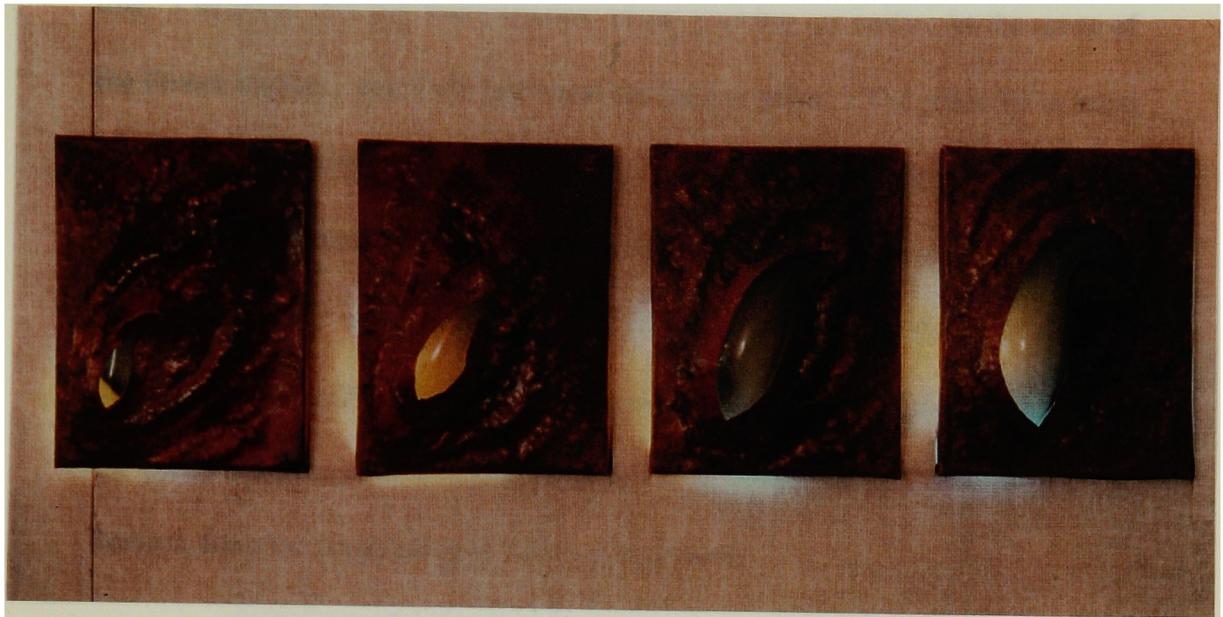


Figure 4. *Growing-Detail* : the former term



Figure 5. *Growing-Detail* : the latter term

kept my nails scarlet until the first snow of the season, my love could be true. I believed this and was impatient about growing my nails. As the name of the flower implies, touch-me-not seeds are hard to gather. The seeds try to burst out from the narrow pouch, so I had to be careful when planting them. Raising, collecting these seeds, and dying my nails were lovely memories. I used this moment from my childhood and in my sculpture, which symbolizes both the flowers and the seeds. The form is the pouch of the seeds and the colored lights are seeds bursting and the flowers : a conversation between myself and the flowers, from the small cramped world of my youth.

In my third sculpture, “Aging”(Figure 7), my main concern was the middle development of the embryo. I emphasized our struggles and the knowledge gained with aging. The first hemisphere is an organic shape presenting a living thing and the nails symbolize our troubles and struggles. When we were children, the troubles we had only concerned ourselves and we didn’t need to take those troubles seriously. But as we get older, the troubles come to us sharply and the problems we bear become heavy. These are struggles we must overcome. The changing colors and shapes represent growing and the nails symbolize the troubles and struggles. This work shows the influences surrounding my life. While a nail can make a structure strong, overcoming the nail-like struggles in life make people stronger as well.



Figure 6. *Blossom*

Figure 6. *Blossom*

I chose neon light for my main materials and to support my theme, but in my work, "Tissue Assembly" (Figure 8), I used natural light instead of neon light. Although I could not show various colors with natural light, it changes with time and weather. Every day the natural light is not constant. I wanted my work displayed by the window so viewers could see the light refracting through the piece. With its distinct process, like "Aging", "Tissue Assembly" shows the halfway point of development. I asked myself what controls my life and I had various answers with respect to time and place. I pointed out my particular centers which come from segments of my life in the assembly of tissues. The thin glass and copper wires emphasize the fragile character of a person's mind. I also implied this through refraction. The center of my thinking refracts my life like the light refracting through the glass.

My works "Untitled" (Figure 9,10,11) show the last stage of embryonic development. To suggest a mystical feeling and an abstract view, they were not titled. The pieces in my series "Untitled" are independent of each other whereas my other works' parts are not. The organic form in the center illustrates the unique and final stage still growing. The lonely central forms are like a person who tries to stand on his feet and his never-ending process towards independence. These forms are collaged from observations about the spermatozoa. I tried to capture its psychology, sensuality and corporeality. The spermatozoon interest



Figure 8. *Tissue Assembly*

me because it is one of the first life forms now and in the beginning, which portrays a beautiful and pure sensuality. Influenced by the paintings of Abstract Expressionism, I used acrylic paint to create the environment of the creature. Personally, I am most attached to the “Untitled” series because they are the last works of my thesis and embody my growing artistic merit. I cannot mature perfectly but I will continually pursue my development.



Figure 9. *Untitled 1*

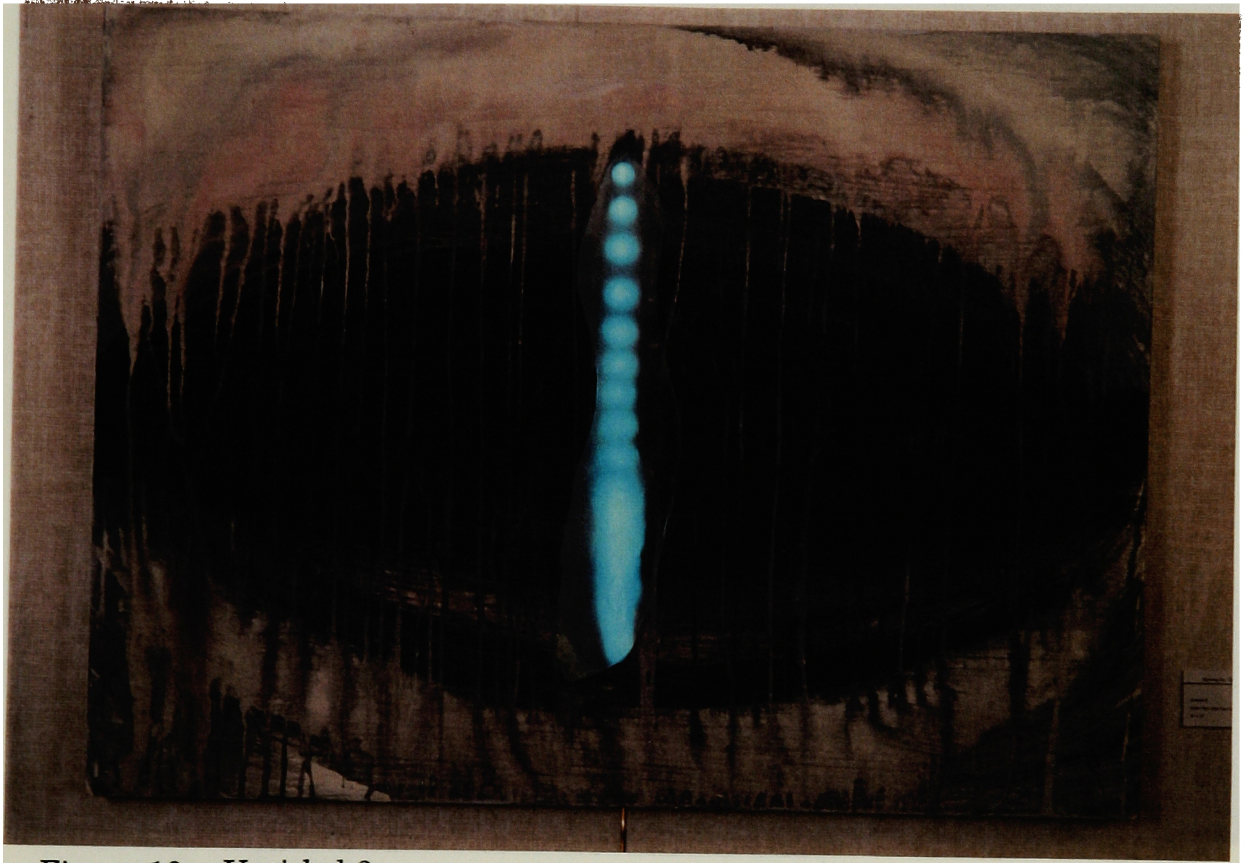


Figure 10. *Untitled 2*



Figure 11. *Untitled 3*

TECHNICAL INFORMATION

I used the technique of slumping plate glass for all my thesis work. I chose this technique because I wanted to give life to neon light. The slumping technique used in plate glass results in greater transparency and light than other techniques. Also, the negative space of slumped glass can be used to install a neon light. This is a simple technique but I used it in my own way : slumping glass on copper plates in my works “Growing”(Figure 3) and “Blossom”(Figure 6). I forged and carved out the organic shape in the glass. In spite of the different characters of copper and glass, the slumped glass on the copper plate makes it possible to harmonize two unlike materials. Also, the attached glass section on the copper presents the effect of copper electroforming. In order to provide the best results in slumping, metal-smithing needs detailed work and the copper plate should not be thick because of the different annealing time.

In order to make a natural copper color, I used blown patina and left it outside to oxidize.

In my other works, “Aging”(Figure 7), “Tissue Assembly”(Figure 8), and the “Untitled” series(Figure 9,10,11), I used a mixture of plaster and silica for the positive and negative molds. To vary the results, I controlled the length of

the firing and annealing time. If I shortened the firing and annealing time, the glass would be clear while annealing it slowly would produce a cloudy glass because of natural devitrification.

I used neon light in all my thesis works to emphasize the theme of embryonic development and usually placed the neon light behind the slumped glass. Visually, the neon light expressed the mystical life inside my works. Also, through the light, other materials change their reflecting character while the light and media relate to and affect one another. The technique of shaping light with neon includes bending tubes, tubulating electrodes, and bombarding which makes the tubes light up. I chose various colored tubes and two gases, neon and argon. In the bending process I used the ribbon fire to shape and weld the tubes and electrodes with a jeweler's hand torch. Through the bombarding process, the tubes are vacuumed and the gas is put in. The mercury with argon or neon gas serves the important role of providing the colors. The clear tube with neon gas is bright red, but with mercury the color in the phosphorous tubes are various colors. The amount of gas depends on the diameter of the tubes during the bombarding. The finished tubes, it were checked by lighting up the tubes to see if there was a perfect vacuum without any leaks. The transformer chosen depends on the diameter and length of the tubes using the smallest possible for easy installation. The electric wires had to sustain high voltage.

Finally, because I used mixed media, I was combining materials with distinctive characteristics. This meant that I had to use different types of glue : silicon, epoxy, and fiber glass to join the neon lights and other parts.

CONCLUSION

Throughout this thesis, I explored the language of nature within myself and my struggles in realizing the art. It was a very valuable experience to concentrate on one concept which captured my interest : the process of maturation embodied in embryonic development. During this thesis, I recalled memories of my childhood which strongly influenced the product. While I keep relating to nature, the conversation between nature and myself will continue to guide the viewer into the intention of my works. Also, I realized the effort involved in the creation of 'live' sculptures.

I am a sculptor who has used neon as a vehicle to express my ideas and used other materials to show how they relate to one another and change with the different characters of light.

This research has also stimulated ideas for other possible works in the future. With my past creations and creations to be, my works and I will grow forever.

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