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# SCHEMA

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A thesis  
presented to  
the faculty of the Department of Art & Design  
East Tennessee State University

In partial fulfillment  
of the requirements for the degree  
Master of Fine Arts in Studio Art

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by  
David Mazure  
May 2009

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Professor Ralph Slatton, Advisor and Committee Chair  
Professor Catherine Murray  
Professor Travis Graves  
Professor Scott Contreras-Koterbay

Key words: Quantum physics, installation, lenticular prints, digital

## ABSTRACT

### SCHEMA

by

David Mazure

This thesis supports the Master of Fine Arts exhibition at the Slocumb Galleries in Ball Hall at East Tennessee State University, from February 23<sup>rd</sup> through February 27<sup>th</sup> 2009. The exhibition is comprised of eight graphite drawings, one ink drawing, eight vinyl prints, two hundred sixty lenticular prints, over fifty digital inkjet prints, and one video installation. The exhibition presents the artist's exploration into using drawings and prints as installation as they relate to quantum physics and universal scale. Subjects discussed, on a project-by-project basis, include thought, ideas, methods, influences, and process by which the work in the exhibition was achieved.

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## CHAPTER 1

### INTRODUCTION

We may even find that the art world's scientifically inspired works will provide new stimulus to the scientific imagination and, in some possible intangible way, prepare us for the next step in understanding the universe.

–Brian Greene (Greene, xi)

As a secular artist, I draw most of my inspiration from science. I find this no different from artists who used their spirituality as an artistic guide in the past. Science is the basis, or spring board (not the sole dependent), for my world view, and, as such, I glean attributes of its language systems to convey my ideas. Many artists today including Matthew Ritchie, Mark Dion, and Mars-1 are interested in using science as a basis for their art whether it is in their process, imagery, or both. If, 'Art is,' as Da Vinci believed, 'the Queen of all sciences communicating knowledge to all of the generations of the world,' (Schlain, 69) then, as an artist, I want to say something meaningful to those future generations. I aim to communicate something worthwhile by producing work that can induce a subjective experience, questioning issues of quantum physics and universal scale.

In my drawings, prints and installations I present relationships of scale, movement, shape, and pattern to establish a base from which to explore universal mysteries, not tangible truths. (Note: Throughout this thesis the term 'universal' will be defined as 'the totality of all existing matter and space in the cosmos.')

To explore these mysteries I produce a dialogue underscored by a rational sensibility that I then transform into the imaginary.

Really great ARTISTS are SCIENTISTS  
and really GREAT scientists are  
artists and BOTH  
are INVENTORS.  
I call them  
ARTIST-INVENTOR-SCIENTISTS  
-R. Buckminster Fuller (Fuller, 1)

R. Buckminster Fuller devoted his life to creating artifacts for all humanity, perhaps one of the noblest and most unselfish endeavors to undertake. These artifacts, which include the geodesic dome and Dymaxion House, are apolitical, non-religious and created with the intention of the betterment of humanity. I am intrigued and inspired by this type of philanthropic vision. I have the utmost respect for artists whose altruistic intentions are to further develop human thought and awareness.

Throughout much of history artists have anticipated scientific revisions of our understandings of reality, often not even being aware of it. For instance, Einstein developed his Special Theory of Relativity in 1905 but it wasn't made public until 1919. This theory provided the world with a new outlook regarding space and time, completely changing the field of physics. In 1907, Picasso, unaware of Einstein's breakthroughs, had created his masterpiece, *Les Femmes d'Alger (O. J. R. M.)*. *Les Femmes d'Alger* also challenged ideas of space and time (leading to further explorations of this with Cubism), within the context of art (Schlain, 220-24).

It is amazing to consider that these two breakthroughs were taking place simultaneously with neither artist nor scientist being conscious of the other. Communicating through the Jungian universal subconscious, or other dimension linking human thought and experience, the bond between art and science has continually

benefited humankind. I aspire to embark on a similar path of integrating art and science.

The following chapters shed light on my investigation into the fabric of reality. My artwork begins with a personal response to forms in nature that, when unified, initiate a cerebral awareness of the concealed gestalt of the universe: the unknown, unexpected, and unfathomed concepts of space and time. Through the discourse of my analytical exploration of nature, I detail my methods, techniques, concepts, and influences. The following catalogue of work offers a visual feast for the intellect that may enable the individual to elevate beyond his/her previously understood notions of the universe and his/her place within it.



## CHAPTER 2

### UNITY

When we tug at a single thing in nature, we find it attached to the rest of the world.  
- John Muir

In September of 2007, East Tennessee State University invited conceptual artist Tom Marioni to exhibit work and to speak about his art. In his lecture he was asked in what direction he felt the institution of art was headed. His simple reply was, ‘the age (or era) of the circle.’ Many were dumbfounded by this response or felt that it was an attempt to be vague due to uncertainty. I did not feel this way for his words were quite profound and helped me gain confidence in the direction I was already headed with my artwork.

With issues of sustainability and preservation of the environment becoming more dominant, it is clear that the Earth is an organism depending upon all of its systems to retain balance for its survival. This fact is unavoidable. Everywhere I look I see the interdependency of all life; every system, large and small, working in conjunction with one another; connected. This is how I viewed Tom Marioni’s ‘age of the circle;’ with an awareness of a much grander design of the universe that we are now only beginning to understand.

With my exhibit *Schema*, I strove for the cohesiveness of individual parts working together to form a complete whole. I wanted to demonstrate how separate pieces of artwork in different mediums work in unison with one another visually, conceptually, and spatially. Therefore, for *Schema* all of the imagery is interrelated and based upon my investigations of the biomorphic forms of the human body. Each drawing, print, and

installation was purposely planned so that its juxtaposition would emphasize its role in the grander design. I wanted my show to function as an organism.

The entire show is an installation. ‘As with the term *composition* in the traditionally understood context of art, [I have] created an arrangement that is an integrated, cohesive, carefully contrived whole (Rosenthal, 26).’ Most of the individual elements that make up the entirety of the exhibit are installations themselves because they activate the three-dimensional space around them. Without this activated three-dimensional space, the exhibit would fail to act as a unified, cohesive whole.

The cohesiveness of the exhibit works on many different levels. For starters, all of the imagery presented in *Schema* is based upon my drawings of the human figure. Secondly, each piece shares a certain type of self-similarity with each other. This self-similarity can be present in the media, the concept, the spatial dynamic, or juxtaposition within the gallery.

The three-dimensional space that plays such a crucial role throughout the entirety of the exhibit is not meant to address the physical, architectural setting in which it has been placed. *Transmeandering Helix*, for example, working in conjunction with the ceiling installation *Altruism with -1/2 Spin*, are enchanted space installations that envelop the viewer (through their interactive and spatial relationships). They envelop the viewer so completely that the architectural settings by which they are installed have no relevance to understanding the piece (Rosenthal, 35). Though the architectural settings have no relevance to the actual meaning of the piece, sometimes I had to make concessions for how the architectural elements worked visually with each piece so as to not call attention to those elements.

There are certain visual components that were specifically chosen in order to integrate all of the pieces together as a whole. For instance, the color and size of the framing devices were important elements. Take *Altruism Study* for example (Fig. 1). The width, dimensions (24"x24"), and color of the frames mirror that of the ribbed drop ceiling tiles from which it descends.

The frames of *Transmeandering Helix* were specifically chosen because they are the same width as the vertical crossbars of the central glass case through which the piece intersects (Fig. 2). The size, colors, and frames of each individual piece were executed specifically to enhance the cohesiveness of the exhibit.

Other decisions that I had to consider were positioning of individual pieces throughout the exhibit and use of negative space. As a graphic designer, I thought about my exhibit in terms of design. Due to the modular nature of the imagery I found that adhering to a grid-like structure for the overall design of the show both gave it a semblance of order and enhanced my message.

I used negative space in two very specific ways to unify the entire exhibit. First, I used the negative white space of the gallery walls to balance the entire show visually. Negative space, if used successfully, can increase the power of a two-dimensional composition. I decided to use the negative white space of the gallery walls as a similar device to balance all of the imagery in the show within its three-dimensional gallery setting.

The second way in which I use negative space in my exhibit can only be conveyed by example. *Cosm* consists of three different pieces of artwork, *Microcosm* (digital prints on wall), *Cosm* (digital prints on glass), and *Macrocosm* (video

*projection*). Although the three pieces work individually, they work collectively as well and activate the space in between them. This negative space becomes important in understanding the depth and scale of the piece both visually and conceptually. This negative space between them unifies them. Similar such activation of the three-dimensional space within individual pieces of art and between separate pieces of art help to unify the entire exhibition into a cohesive whole. This use of negative space also enhances my portrayal of the invisible.



**Fig 1.** *Altruism Study & Altruism w/-1/2 Spin*



**Fig 2.** *Transmeanderation Helix (Part 2) in glass case*

## CHAPTER 3

### EVOLUTION

My artwork has always been about presenting the relationships between the macro and microcosmic aspects of the universe. Just as the interdependency of life on this planet was unavoidable to see at every corner once I became aware of it, so are the similarities between the large and the small.

For instance, I recently took a trip to Carlsbad Caverns in New Mexico and was awed by the size of the caverns. Soon after the feeling of awe subsided, I analyzed what I was seeing. The rock formations (created by deposits of minerals from the surface) had a certain look, shape and feel to them. Upon closer inspection of one section of just one of these formations it was revealed that the look, shape, and feel mirrored that of its larger counterpart. I would venture to guess that the same similarities would be present if I were to take out a microscope and view an even smaller piece of this rock formation on the microscopic level. As these thoughts swam through my mind, it occurred to me that these rock formations felt oddly familiar. Then it hit me! The large mountains and rocky outcroppings, under which the caverns reside, that we passed through on the narrow, curvy road leading to the caverns had the same exact look, shape and feel to them! This property of self-similarity that stretches from the microcosmic to the macrocosmic is what I choose to present in my artwork. These ideas are certainly nothing new within the scope of human knowledge because with the discovery of fractals, scientists and mathematicians have been noticing self-similarity for over thirty years (Livio, 214-15).

Contemporary developments in the fields of science have intrigued me throughout my life. It was not until I encountered the theoretical physics of Brian Greene and

Stephen Hawking that I decided to visually represent the hypothetical principles presented by their writings. In their writings, Greene and Hawking peel away the layers of mystery in the universe to reveal many more dimensions that we have ever dreamed of and matter that can be reduced down to vibrating strings of energy.

*Schema* is the culmination of my attempts to visually represent the inexplicable world of quantum physics. For instance, particles on the subatomic level have an inherent behavior of rotating with a negative one-half spin ( $-1/2$ ). Even quantum physicists have no way of explaining or even physically comprehending this concept outside of their theoretical calculations. So, I have interpreted visually what a particle with a negative one-half spin looks like in my lenticular print installation, *Altruism with -1/2 Spin* (explained in more detail in Part Eight).

The imagery in my exhibit is based upon my investigations of the human form. I wish to show how the forms and shapes of the human body can relate to those of elementary particles. Elementary particles are theoretically blinking in and out of existence, traversing many dimensions simultaneously (Greene, 3-20). So, if human bodies are comprised of molecules and those molecules are comprised of atoms and those atoms are comprised of elementary particles, then I do not see why the shapes and forms of elementary particles cannot reflect the shapes and forms of one of their larger counterparts: the human body. I see this as no different from the self-similarity of the rocky cliffs at Carlsbad Caverns as compared to the tiny rock formations in its interior.

When I first began to visually represent these ideas of quantum physics and how they relate to large and small forms of the universe, I chose to do it in a somewhat insincere manner. I presented my imagery as if it were a type of satire of science. But, as

I delved deeper into these questions of the universe, I began to reflect upon them more seriously. The process of creating my artwork became a method for my own personal reflections on these matters. I soon discovered that presenting these ideas in a pseudo-scientific way, which at times could appear farcical, would not afford them the proper justice they deserved. I realized that it was my own insecurities in my ideas that were influencing me to misrepresent them. Therefore, I completely changed the context under which I presented my ideas by eliminating any parody and presenting them in a more genuine way. I wanted the ideas presented in my artwork to be taken seriously as I began to reflect upon them seriously.



## CHAPTER 4

### SCHEMATIC COMPONENTS

“The purpose of art is to make visible the invisible.”  
–Franco Fontana (UBS, 202)

The name of my graduate thesis exhibition is *Schema*. Webster’s New World Dictionary defines schema as: “an outline, diagram, plan or preliminary draft.” This is what my exhibit is all about. I am presenting my interpretations of elementary particles. Then I am taking these imaginary forms that are based upon my understanding of quantum physics to diagram the similarities of the macro and micro universes.

Each piece in the exhibit begins with a simple foundation of components and through repetition, juxtaposition, and interaction they create artwork that addresses much more complex ideas. I see this as no different from nature. Matter can be broken down to its essence: elementary particles. Through repetition, juxtaposition, and interaction they build upon one another to produce larger and more complex systems and organisms. The resulting pieces of art that began with simple components address patterns, movement, self-similarity, and the invisible. They begin to address what I consider the concealed gestalt of the universe: the unknown, unexpected, and unfathomed concepts of space and time, the invisible. Through an analytical analysis of forms in nature I strive to make visible the invisible.

For instance, with *Altruism with a -1/2 Spin* (discussed further in Chapter Eight) I am making a correlation between quantum physics and consciousness. I depict elementary particles acting as the psychological construct of an altruistic thought. I want

to see how that relates to the invisible entity of mind. Where is thought-space? Can it relate to the behavior of particles in accordance with quantum physics? I think it can.

The title *Schema* is also important for another reason. I plan on developing the ideas I presented in this exhibition further in the future for other exhibitions. This show is laying the groundwork for future work that I will continue in this vein. *Schema* is a preliminary draft, my outline, for what is to come.

## CHAPTER 5

### SACRED GEOMETRY

My most fertile method. . . as I've often said, (is) to copy reality directly, attentively reproducing the objects of outward nature in its most minute, peculiar, and accidental aspects. After making the effort of meticulously copying a pebble, blade of grass, hand, profile, or any other thing from living or organic life, I feel my mind begin to bubble up, and then I need to create, to let myself go, and represent the imaginary.

—Odillon Redon (Werner, xii)

In *Sacred Geometry* (Fig. 3), the earliest work included in the exhibition, I further developed a process of image creation that I began a year earlier. It begins as an investigation into the human form. I think of my investigation of the human form as a science. Webster's New World Dictionary defines science as 'systemized knowledge derived from observation, study, and experimentation carried on in order to determine the nature or principles of what is being study.' This is exactly what my process entails.

My process involves taking my own graphite figure studies (taken directly from reality), harvesting them for certain qualities (such as movement or elegance of form), and then reconfiguring them. To do this, I defamiliarized myself with the way I normally perceive the human body by viewing each individual body part only in terms of movement and form. I rationally reintegrated my new interpretations into configurations that begin to act as a language, a language through which I can better convey my message. In the case of *Sacred Geometry*, the new configurations depict a very familiar, basic, geometric shape, the cube.

My response to the natural forms in the human body is typically one of movement and rhythm that questions traditional relationships between abstraction and figuration. Though it may appear so, I am not abstracting the human form. I am simply using the

rhythmic dynamism of human forms to suggest the nature of matter according to quantum physics. In quantum physics, matter is in a continual state of flux. With *Sacred Geometry* I wanted to depict this aspect of quantum physics by conveying the dynamic in a static series of images.

In the initial stage of developing my ideas for this project, I intended the interacting biomorphic forms to visually represent the human collective subconscious per Carl Jung. As I continued to develop this process, I realized that these representations go beyond a simple depiction of exploring this relatively unobservable phenomenon. These interacting, biomorphic, human forms adopt elements from the enormous archive of associations linked to depicting the human body: allegorical, biological, and archetypal. Also, I believe an element of the grotesque starts to emerge from the imagery and act in a primitive sense, emanating a sense of mortality, and, perhaps, fear.

*Sacred Geometry* contains five individual graphite drawings. Each drawing represents at least 20 hours of work. Working on rendering, whether it is with traditional materials like graphite (for this project) or digitally (for other projects), affords me an escape from the everyday and frees my mind up to reflect upon the issues that I am representing in my art. I have been asked why I choose to use the human form as a basis for my artistic explorations. My answer is always the same: because I am a human and I can view the universe from no other perspective. Additionally, the hand-drawn nature of my graphite work strengthens this perspective. The only tools are my hands, pencil, and paper; no computers, software, etc.

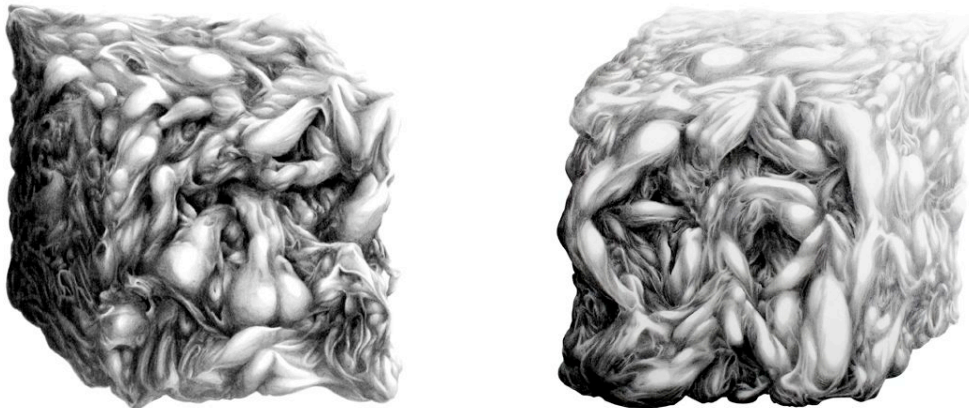
Each of these drawings depicts one side of the same geometric cube. The cube is a mass/pattern of human organic forms, twisting and turning in a struggle to define the

form of the cube. The cube acts as a symbolic referent to geometry. Geometry, the branch of mathematics concerned with the properties and relations of points, lines, surfaces, solids and higher dimensional analogs (Webster, 835), is essentially a human-devised system that describes the physical reality of our universe. But, like all branches of mathematics and science, it never fully explains that reality. As Einstein said, ‘As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality (Livio, 12).’

Scientific and mathematical inquiry answers questions but also inevitably leads to more questions; an infinite system of questioning and answering. Therefore, the sixth side of the cube in the *Sacred Geometry* series has been purposefully omitted to convey the message of mystery and infinite un-knowing. After all:

It is not the possession of truth, but the success which attends the seeking after it, that enriches the seeker. . .

- German physicist, Max Planck (Schlain, 176)



**Fig 3.** Faces 1 & 5 of *Sacred Geometry*

## CHAPTER 6

tranz'mē'an dərā sh ən/'hēliks

As mentioned in Part One, to a certain extent scientific inquiry plays a part in my creation process. In the spirit of German ensemble artist Anna Oppermann, who used her own self-devised scientific method to examine reality and present it to the world, I have developed my own scientific methods of inquiry (Oppermann, 112-13). (A further explanation of these methods will be discussed in Parts Nine and Ten).

*Transmeandering Helix* (Fig. 4), is a scientific investigation of form and movement in an abstract, biological pattern using only curved line and solid shape. I establish a fluidity of line, leading the eye throughout the entirety of the piece, to create a meandering rhythmic flow paralleling similar such phenomena in nature. The curved line is of great biological significance – it parallels the motions of wind, water, and organic growth (Hale, 32). The lines in *Transmeandering Helix* not only parallel the movement of these natural phenomena but also act like the branching line systems in a tree or in streams and tributaries as they meet larger conduits of moving water (Hale, 37). This is why I chose to use pen and ink for this drawing. The properties of ink lend itself to the fluid and natural qualities of line.

The consistency of the phenomena around us, order, regularity, cyclical repetitions and renewals, have started to speak to me more and more strongly all the time. The awareness of their presence brings me repose and gives me support. (Escher, 102)

Often I find that modularity, pattern and repetition are catalysts for my creation process. I am continually inspired by any of the plethora of M.C. Escher's prints of patterns and transformation in nature. Through my study of printmaking, I have discovered that pattern creation is an ideal way in which to present my ideas on a large scale while successfully integrating concept and medium, or form and subject-matter. As Hegel says, "the greatness and excellence of art. . .will depend upon the degree of intimacy with which. . .form and subject-matter are fused and united" (Kuspit, 35).

Escher was mainly concerned with conveying his ideas using only two-dimensional imagery, namely in the form of lithographs. I am interested in taking Escher's two-dimensional depictions of repetition and transformation one step further through the creation of installations, by addressing the three-dimensional space that my two-dimensional imagery occupies. I aim to transcend the traditional boundaries of the definition of two-dimensional art by exploring the three-dimensional. I use the three-dimensional space between drawings, prints, and video as an expressive medium to strengthen my intention. The goal is to create an experience of profound analysis of nature's processes of alteration and transformation. In the spirit of Hegelian philosophy, 'If we are to achieve knowledge, we cannot passively experience; we must allow our mind to play a more active role in ordering the information by our senses (Singer, 73).'

*Transmeanderation Helix* is the visual representation of these ideas because it presents two-dimensional information within a three-dimensional space, actively challenging the mind and senses to order that information to make sense of it.

Stage One of *Transmeanderation Helix* uses modular vinyl prints connected end-to-end to represent a silhouette of the larger, more intricate pattern depicted above it in

Stage Two. The vinyl silhouette creates the illusion that the pattern is exactly the same stretching to infinity. Stage Two, completed in ink, depicts a somewhat different story of the pattern. It shows, that upon closer inspection, the pattern is not exactly the same, but instead involves a level of slight variation stretching on toward infinity.

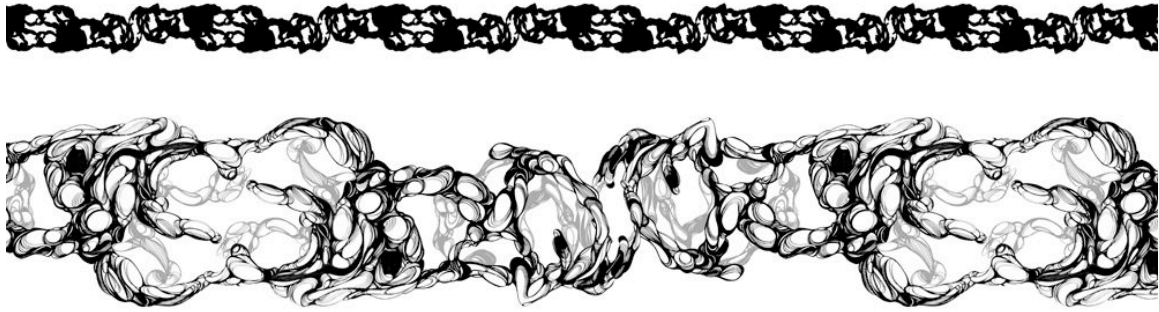
*Transmeanderation Helix* is intended to be an instigator of information analysis. The information presented is contained within the two different representations of the same pattern, a silhouette and a detailed rendering. The two different forms of the pattern demonstrate both homogenous infinite repetition (Stage 1) and repetition with slight variation (Stage 2). This type of phenomenon happens quite often in nature. For instance, a DNA strand, from a certain distance simply looks like two strands coiled around each other to form a spiral ladder, representing homogenous repetition. But, upon closer inspection we see the variation because each rung of the ladder contains differing sequences of pairs of chemical groups called bases, in an infinite amount of combinations, representing repetition with slight variation (Griffiths, 6).

The juxtaposition of these two representations in such close proximity to one another, initiates a dialogue to question the relationship between patterns on the grand and minute scales.

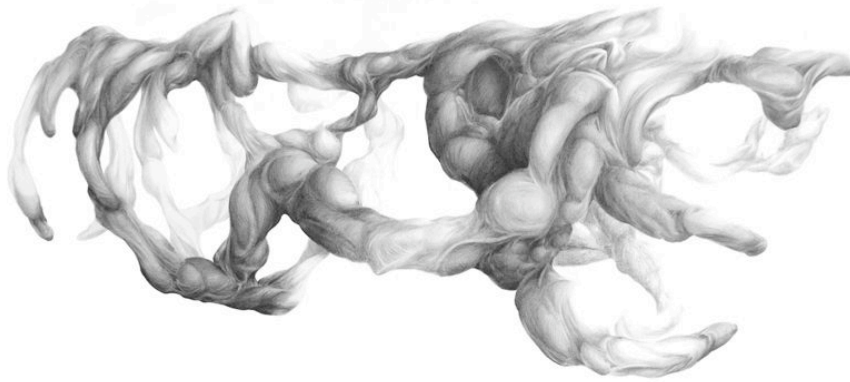
The process through which Stage 2 of *Transmeanderation Helix* was created became a pattern unto itself. It began with graphite figure drawings. I used these to create an imaginary form (Fig. 5). I took this imaginary form and with ink created a line-map on top of it detailing the forms and movement inherent in the original drawing (Fig. 6). I then flipped it over and repeated it to create the pattern. Once the pattern was established, I used the original line-map to recreate each modular unit of the pattern over and over



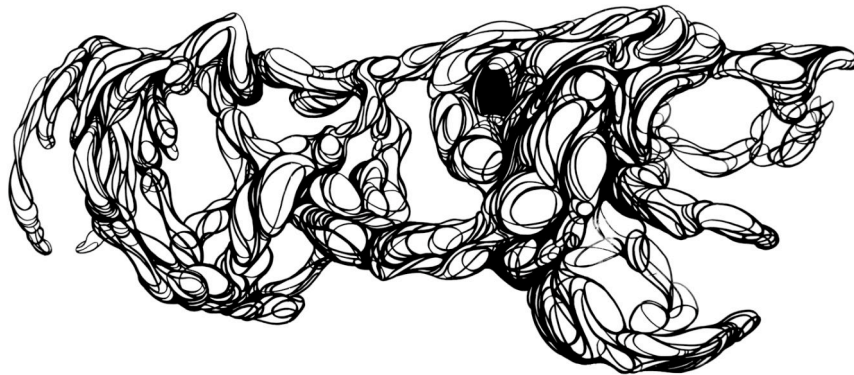
again, each time in a slightly different manner, in order to achieve an infinite pattern with slight variation. Due to the repetitious nature of my process, I essentially became a working example of the exact processes I was representing in the work.



**Fig 4.** Stages 1 and 2 of *Transmeanderation Helix*



**Fig 5.** Preliminary graphite drawing for *Transmeanderation Helix*



**Fig 6.** Line-map ink drawing for *Transmeanderation Helix*

## CHAPTER 7

### ZODIAC

*Zodiac* (Figs. 7) is a cross-disciplinary integration of ideas and information intended to be an expression of interrelated scientific systems; systems, for the most part, not typically considered to interrelate. I combine elements of quantum physics, astronomy, (Jungian) psychology, astrology, and biology that trigger associations of the possible relationships between these fields of study. I do not wish to symbolize anything specific, just hint at the often unacknowledged interrelation of these disciplines. *Zodiac* presents relationships that can be interpreted, analyzed, or dissected in myriad ways

Like *Sacred Geometry*, this project has two distinct parts. The first is a wall arrangement of circular lenticular prints arranged in a grid-like fashion. As an artist, it is important to determine the ideal medium with which to present my ideas. Lenticular printing has come to the forefront as a viable medium to do this. Lenticular printing is a multi-step process consisting of creating a lenticular image from at least two existing images and overlaying it with a clear, ribbed lens. This imparts the image with the ability to change or move as the image is viewed from different angles. The creation of the circular prints for *Zodiac* required the use of traditional drawing techniques with digital processing.

In *Zodiac*, I capture one of the basic tenets of quantum physics, the uncertainty of the existence of matter. Quantum physics suggests that the existence of matter in a certain point in space (particularly on the subatomic scale) is only, in actuality, the probability of that matter existing in that space at that time. I combined these ideas of quantum probability with those of String Theory, which suggests that all matter can be reduced to

strings of energy traversing many dimensions simultaneously, blinking in and out of existence. The ultimate goal is to create an illusion of the transitory state of matter and how that may relate to or imitate the twinkling of stars perceived in the night sky. The ephemeral quality of the lenticular print is perfectly suited for conveying this illusion.

In addition to the use of lenticular prints, other elements included in *Zodiac* elevate the levels of information association. The actual imagery on the print depicts my interpretation of an elementary particle. These embryonic portraits are meant to strike a cord in the visceral realm. Simultaneously, the composition of lines (affixed to the wall using grey gaffers tape) references the arrangements of stars in our celestial sphere (ie. constellations) that is reinforced by the title. Medium, imagery, composition, and language all combine in such a way as to obscure the certainty of any one of these disciplines.

Matthew Ritchie, a contemporary artist who also deals with issues concerning quantum physics and probability, sums up the reasoning behind his creative pursuits:

Open your eyes and enjoy the ride! Because it's much more exciting if you are thinking and questioning and you don't know what it is—and it's full of questions and statements that you can't possibly grasp. That is a truer reflection of just how extraordinary reality is than something that neatly ties it up in a bow, like, "Look at that, be at peace, go home." I'm more interested in something that leaves you asking questions. (W. Miller, 1)

And so am I.

The second part of *Zodiac*, titled *Mapping the Probability of Archetypical Configurations of Elementary Particles in Thought-Space*, states my purpose behind the

project much more concretely, yet still retains a subjective edge. It is an impersonation of an actual science research poster (Fig. 8) intended to act as a rapprochement (an establishment of harmonious relations) between different sciences as well as between the arts and sciences. It touches upon the initial concepts of Hegel's Phenomenology of Mind. How do we gain knowledge and grasp our reality? How do we come about 'knowing'? It seems as if we base our realities by observing them through a certain ideological medium. Usually this medium is a belief-based system that we compare our existence to; that system being science, religion, mysticism, etc. I have combined many different disciplines together to create a poster much more indiscriminate than a typical research poster. Here is an excerpt from the poster:

**Abstract:**

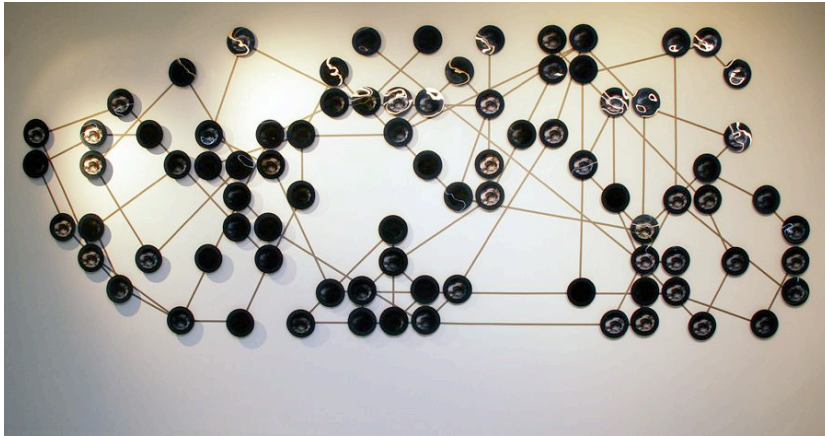
Observations of the third family of elementary particles, specifically tau-neutrinos ( $<15.5 \text{ MeV}/\sim 56 \text{ cm} - 3$ ), have been identified to arrange themselves in aesthetically comparable configurations to that of archetypical tessellations in the supra-celestial sphere. Documenting the facticity of these configurations is critical in determining the validity of the phenomenological experience of comprehending the meta-levels inherent in the cosmos.

In a corollary to the *Zodiac* wall installation and through the quasi-scientific dissertation presented on the poster, I provide an additional object of contemplation invoking the analogous nature of the macro- and microcosmic facets of the universe by presenting the similarities of elementary particles and stars. Both parts of the *Zodiac* installation have their own separate identities and can (and do) exist on their own. I

believe recognizing their connection is not necessary to appreciate either piece but can enhance the experience of both.

It is worth noting the change in context and meaning this poster has undergone in the past year. It was originally installed in a building dedicated to science (Brown Hall) on April Fool's Day. This was intentional as the poster was created to be an impersonation of an actual science research poster with the ability to fool the casual passer-by into thinking this farcical research is real research. For my *Schema* exhibition, I moved this poster to the hallway outside the exhibition, altering it from a site-specific impersonation to a simple impersonation. Because it was now being displayed in an art building, it shed some degree of pretense and acted more as a piece of artwork worthy of further contemplation than the original.

Mark Rosenthal says that, 'the concept of art as something exalted is thereby questioned or diminished [by the impersonation], because the visitor may use the space [the poster] very much as if it is a life situation (Rosesnthal, 47).' This is why I intentionally left it outside the exhibition. I did not want it to interfere with or diminish what was happening inside the galleries. I wanted what was happening in the galleries to be genuine. Also, the poster did not fit conceptually and visually into the unified whole of the exhibit/organism.



**Figs 7. Zodiac (with detail)**

## Mapping the Probability of Archetypal Configurations of Elementary Particles in Thought-Space

Oscar N. Chandrapoor assisted by David B. Mazure  
East Tennessee State University, Johnson City, TN 37614

### Abstract:

Observations of the third family of elementary particles, specifically tau-neutrinos ( $\approx 15.5 \text{ MeV} - 56 \text{ cm}^{-3}$ ), have been identified to arrange themselves in aesthetically comparable configurations to that of archetypal tessellations in the supra-celestial sphere. Documenting the facility of these configurations is critical in determining the validity of the phenomenological experience of comprehending the metaphysics inherent in the cosmos.

### Introduction:

Detectable tau-neutrino configurations serve as laboratories of elementary particle formation without the influence of neoclassical emission saving the hazardous to phenomenological specificity. Mercurial energy level assessments, using syzygistic jet expansion, performed beyond the threshold of awareness, have been invaluable in properly mapping the probability of these configurations. The use of unconscious line fluxes appropriated from grid analogues for the two distinct rotational energy resonances of configured tau-neutrino arrangements, namely orbito with parallel nuclear spins and pairs with anti-parallel, has been of equal import (Figure 5).

Motivated by the success of the thought-space reality model developed by Dr. Majumdar Abdulah-Al-Kafi, we (and others) have applied the model to dim galaxies and tau-neutrino configurations. Our initial results suggest that dim galaxies do not reflect the configurations inherent in the third family of elementary particles. But, upon examination of this model within the scope of psychophysics and by recording the highly tunable emissions of ion channels between active neurons (induced by psychograms), we have discovered that Abdulah-Al-Kafi's model produces positive results in its relation to physical manifestations of the human unconscious, namely constellations.

So far, due to the highly controversial methods employed in our research, we have only used this data to conduct three case studies (PSM0156, Arnold 2008, PSM0156a, Sauton 1998, PSM1546, Daack-Homer et al., 2008) as well as several post-experimental studies of subjects on the verge of self-awareness for purposes of determining the abundance of pre-formative circulation groupings.

### Intuiting Potentials: The Abundance of the Formative Circulation Groupings (P-FCG):

The first step in the initial stage of analysis was to establish the modus operandi with which to assess the probability wave of comparison between positionings of tau-neutrinos and fixed luminous points in the celestial sphere. The circulation groupings (more commonly considered disambiguation) were processed through an objectivity-filter constructed with cells from the hippocampal fissure of *Caenor. crassus*. It was in the discovery of our first pre-formative circulation grouping (P-FCG), using Lovell's Theorem to determine the proper density of points, in subject PSM0156a, that gave us the initial impetus to continue with our phase space actualization research (Figure 1).

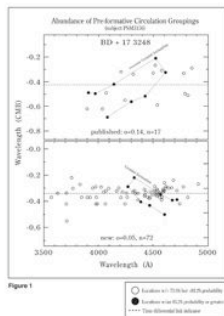


Figure 1

### Unconscious Objectification of the Tau-neutrino Particle:

Figure 2 is an artist's re-visualization of subject PSM0156a's unconscious objectification of a tau-neutrino particle, based upon the actual self-similarity diagram conjured by the subject on 05/21/96.



Figure 3

The aesthetic considerations employed by the subject's unconsciousness assemble two of the more elegant theorems of Intuitive Mathematics (revealing otherwise hidden aspects of its starkly abstract formulations) into a coherent substratum, aiding the derivation of the necessary equations that link our initial P-FCG with the objectified tau-neutrino, as seen in Figure 3.

### Psychotropic Deprivation Form of Intuitive Mathematics (PDFIM):

Utilizing the abstract visualization technique characteristic of the controversial PDFIM (sanctioned by deconstructive elements) allowed us to conceive, with 83.2% accuracy, a Sphaera (ACS) blueprint of the tau-neutrino configuration present at the time of inquiry. Just as regular patterns in six-dimensional space – when seen in three dimensions – could, under certain circumstances, appear as non-periodic geometric structures, so does the appearance of elemental particle patterns in thought space as reflected on a two-dimensional surface appear as biomorphic constellations (Peterson, 130). The formation conjured by PSM0156a adhered to the configuration of the constellation Gamma Serpens which is also the subject's zodiacal sign. Figure 4 depicts the outcome of our PDFIM equations in the form of an ACS.

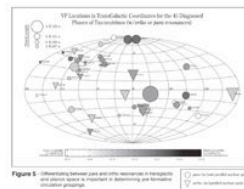
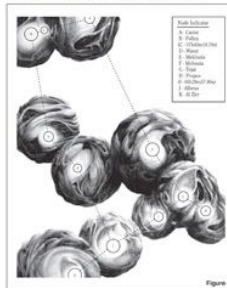


Figure 5

### Conclusion:

There are no substantial conclusions derived from our research and experiments besides the obvious relationship between the configurations of elementary particles and that of patterns of stars as viewed from earth. The rest of our data generally adheres to the accepted oeuvre of the work of Abdulah-Al-Kafi and PDFIM – "the infinitely circular pattern of discovery and questioning of the universe 'Al-Kafi, v1"

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"The profundity of simplicity is in its inherent complexity."  
- from Dr. Majumdar Abdulah-Al-Kafi's famous essay Zen and the Particle Accelerator Experience.

**Fig 8. Mapping the Probability of Archetypal Configurations of Elementary Particles in Thought-Space**

## CHAPTER 8

### ALTRUISM WITH -1/2 SPIN

I think the current trends in art, especially those focusing on experience are focusing on the now – it is a welcome change from postmodernism that focused on the past.

– Olafur Eliasson (Richard Janku, 54)

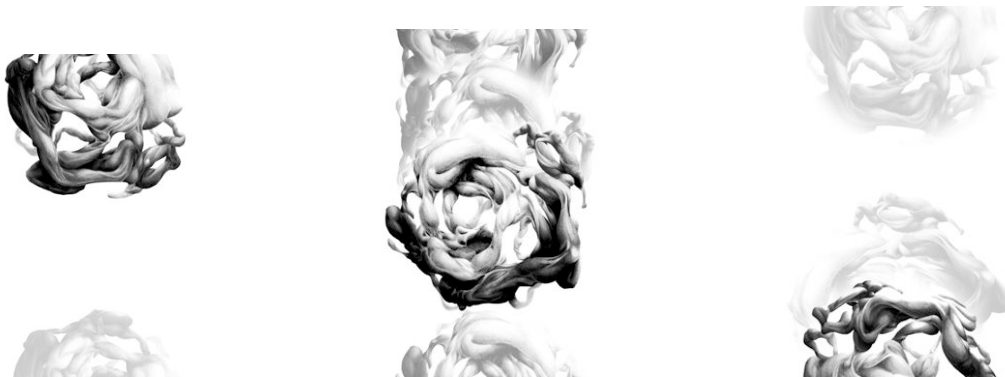
Much time and effort is expended on creating my imagery, yet, my overall goal is to create a contemplative experience not to create a commodifiable object. It is always about the idea, though I do not abandon thinking about the artwork as an object because the object can work as material to enhance the experience. It is the experiential ‘thought-space’ that is important. Even though I wish the phenomenological aspects of my work to prevail, I renounce the current trend in art toward the anti- or non-aesthetic (Kuspit 14-39). I believe that there needs to be a high level of skill and craftsmanship visually present in the materials used to create art to denote it as such.

Works included in the exhibition such as *Transmeanderation Helix*, *Cosm* and *Altruism with -1/2 Spin* all activate the three-dimensional space they occupy. In each piece, the two-dimensional imagery exists in predetermined, perceptible, accessible, spatial configurations so as to provide the viewer with multiple paths of discovery. Though they exist in the space of the Slocumb Galleries, the work does not particularly reference the actual gallery space per se (and the visual and historical baggage associated with it). It uses the space as a catalyst to allow for deeper probing into the universal ideas presented in my work.

*Altruism with -1/2 Spin* (Fig. 9), much like *Transmeanderation Helix*, is a series of two-dimensional lenticular prints that relies strongly upon the three-dimensional space

it occupies. I began the project as a way to create a rhythmic, fluctuating, movement of intangibility (referencing the behavior of elementary particles in accordance with quantum physics) in the form of a repeating pattern stretching outward, beyond the gallery walls, to infinity. Lenticular prints are the perfect medium with which to convey this idea because of their nature to create an illusion of animation through the meshing of static images. It also captures the relatively incomprehensible state of matter on the quantum scale, particularly those particles with a baffling  $-1/2$  spin.

Of all of the pieces included in the exhibition, *Altruism with  $-1/2$  Spin* relies the most heavily upon viewer participation to complete the piece. Installed side-by-side in the ceiling tiles of the gallery, it activates the space along the corridor delineated by that set of ceiling tiles. It activates both the height and length of the space because the viewer must both look up at the ceiling and walk underneath it in order to fully experience the piece. The abrupt ending of the tiled print installation at the gallery wall challenges the perception of the experience and adds an element worthy of further questioning.



**Fig 9.** *Altruism with  $-1/2$  Spin* (Flip #'s 1, 2 & 3 of the lenticular print)



## CHAPTER 9

### COSM

German ensemble artist Anna Oppermann examined her reality and presented it to the world. Oppermann's artistic process is similar to that of the scientific method used by scientists since the 17<sup>th</sup> Century that consists of systematic observation, measurement, experiment, testing, and modifying a hypothesis. Her unique process involved 'observation, recording, writing, leaving the field of research, selection, translation, and the communication of findings and creating meaning (Oppermann, 112-13).' As a researcher, experimenter, and artist, Oppermann attempted to first question and then understand what goes on behind the facets of material reality through the use of two-dimensional imagery juxtaposed deliberately within a three-dimensional space (Fig. 10).

I have gained more confidence in my own artistic process since discovering Oppermann's work. With each new project that I embark upon, I am no longer hesitant to experiment with different methods that allow me to further investigate forms in nature (specifically the human body) and their inherent transformative qualities. I begin with my own perception and awareness of these forms and push them to the limits in order to present depictions of my process that question perception and awareness on a grander scale.

*Cosm* (Fig. 11) is the epitome of the development of my creation process. It involves an arduous evolution of imagery beginning with realistic interpretations of the figure and culminating in a digital translation of the process of my investigation of figurative forms. As a general rule, I do not strictly adhere to any specific medium and this project incorporates many different mediums, both traditional and contemporary,

with a strong foundation in drawing including, graphite drawing, digital photography, digital rendering, ink illustrations, digital printing, and digital animation. Each medium acts as a filter through which my investigations can be represented visually.

For the creation of *Cosm*, I developed a multi-stepped, rational process that involved: 1) Recording from nature, 2) Documenting, 3) Revisiting, 4) Harvesting, 5) Defamiliarizing, 6) Reintegrating, 7) Investigating, 8) Defamiliarizing again, and finally 9) Reintegrating again. The next chapter will explain the process behind *Cosm*, but I believe that understanding my self-generated process is not what is important. I am more concerned with the teleological aspects that hint at the thoughts and methods employed in my process.

The scientific method proves a hypothesis. Oppermann's method culminates in the creation of personal meaning. My process concludes with a reflection; a reflection that affords me the opportunity to gain insight into the subject of my work. It is the joy of reflecting upon universal concepts that fuels my art.



**Fig 10.** *Cosm (Stage 2)*

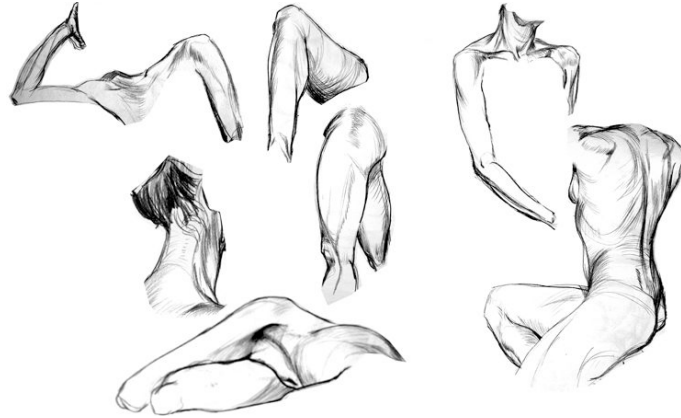
## CHAPTER 10

### REINTEGRATION AND DEFAMILIARIZATION

To achieve the imagery presented in *Cosm* I underwent a very lengthy process. It began with direct observational figure drawing (1. Recording from nature). Using a digital SLR Nikon 80 camera I then documented my drawings and downloaded them onto my computer (2. Documenting):



After many figure drawing sessions over a course of a few months, I would continue to document my drawings. When I decided to begin the project, I revisited all of these drawings at once by viewing them simultaneously on my computer (3. Revisiting). Then I would pick and choose individual parts of each drawing that interested me. The areas of interest usually consisted of interesting movement or quality rendering of three-dimensional form (4. Harvesting). Using Adobe Photoshop, I would cut out these areas of interest and save them into a separate file (5. Defamiliarizing):



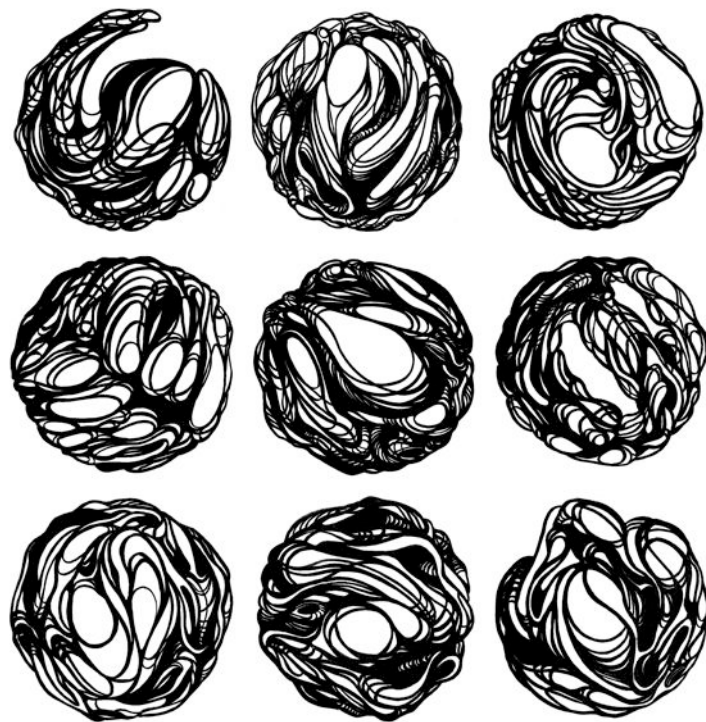
Then I would reintegrate these forms in new and interesting ways in the form of graphite drawings (6. Reintegrating):



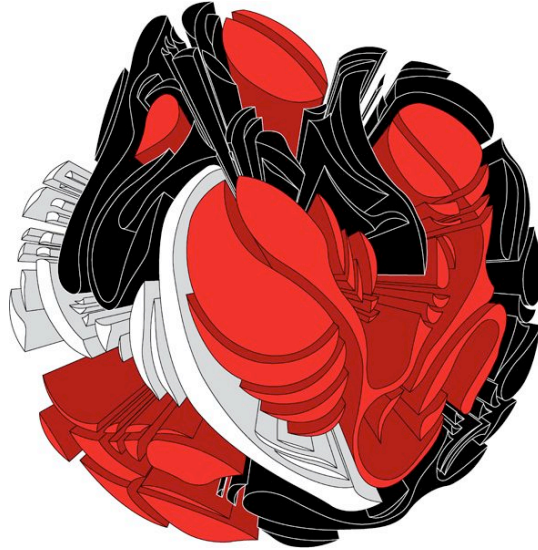
Next, based upon these new graphite drawings, I created compositions juxtaposing them in new and interesting configurations, often mirroring those of molecules or constellations:



Feeling aesthetically unsatisfied after compiling a library of new forms and configurations, I decided to investigate them in more detail. This step is very similar to *Transmeandering Helix*. I created black ink line-maps of the new forms and configurations by laying tracing paper over the images (7. Investigating):



Each line-map was then scanned and saved on my computer and imported into Adobe Illustrator. In Illustrator I intricately traced over the negative areas (white areas) of the drawings. I then converted these negative areas into positive areas and gave them substance and color (8. Defamiliarizing again):



Once I had compiled a new library of these new forms created in Illustrator, I was ready to reintegrate them again (9. Reintegrating again). I did this by creating a repeating pattern of these forms that I would use for all three stages of *Cosm*.

The first stage, *Microcosm* (see Catalogue) is a series of framed digital prints arranged on the gallery wall in a grid-like fashion. It depicts the pattern repeated many times over. The second stage, *Cosm* (Fig. 11) is a series of digital prints affixed to the glass windows of the gallery. It depicts one full tile of the repeating pattern. The third stage, *Macrocosm* (see Catalogue) is an animated video projection. It depicts a zooming-in version of just one quarter of the repeating tile, specifically the lower right-hand corner

of *Cosm* (Fig. 11). Seen all as one piece, *Cosm* represents self-similarity properties existing in the universe as it pertains to both the micro and macrocosmic scales.

The entire process was extremely time consuming. But, each step in the process offered enough of a challenge to allow me to continue to the next stage. Each stage presented me with more insight into form, investigation, and process. The many hours spent on *Cosm* were not wasted however, because I learned a great many things from it. What I learn throughout the process of creation propels me in new directions that I never thought possible; inspiring me to continue to create.



## CHAPTER 11

### DISCONNECTS AND IRRETRIEVABILITIES

‘ . . . the function of art is to enrich and develop human consciousness.’  
– Naum Gabo

Art sometimes has a predilection for excluding certain audiences and I think the goal of art should be as inclusive as possible, while simultaneously striving for the new and innovative, something to help humankind’s awareness evolve in a positive manner. As Ivars Peterson states, “with their highly developed capabilities of visualization, artists introduce new view points that contribute to the development of science and culture as a whole (Peterson, 134).” Also, as Buckminster Fuller proposes, “(humans) are so designed that we can harmonize our decisions with the rest of the Universe, accelerating its evolution in directions that will yield a minimum of disconnects and irretrievabilities (Kenner, 295).” I create work that embodies a natural universality that conceptually, theoretically, and physically moves beyond itself to question the very nature of reality and to ‘enrich and develop human consciousness.’

APPENDIX  
CATALOGUE OF EXHIBITION





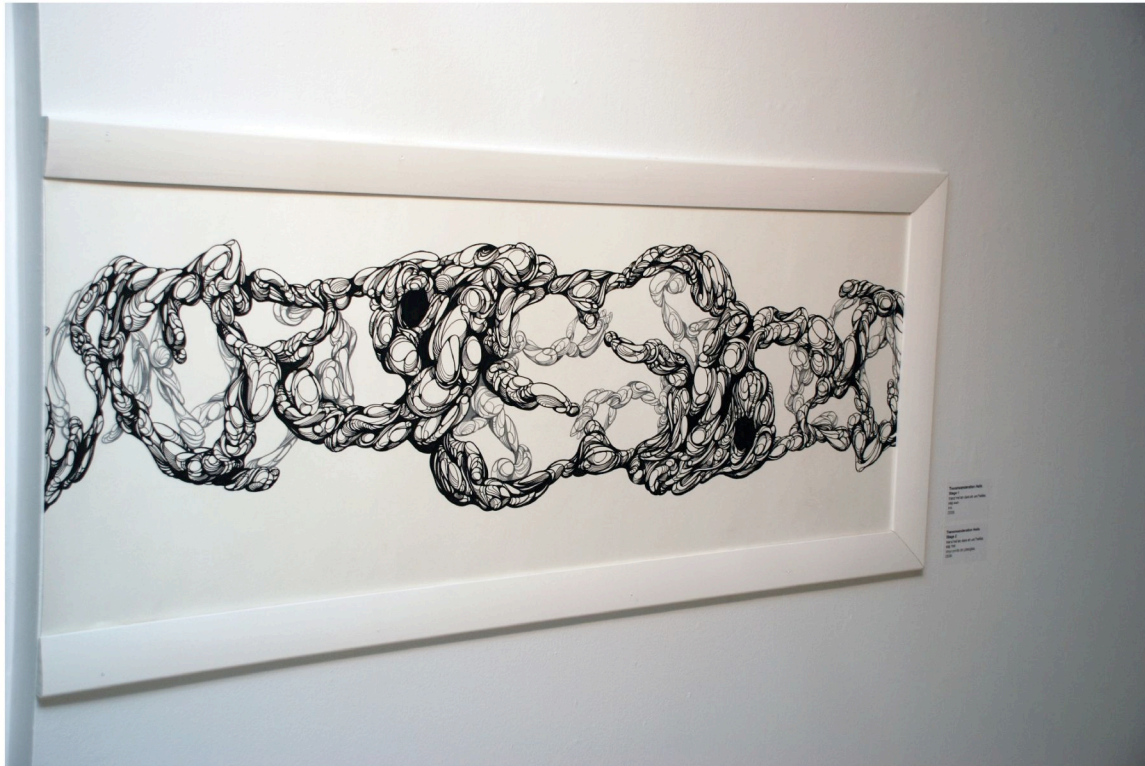
*Sacred Geometry (Faces 1-5)* • Graphite • 31" x 56" each • 2007-08



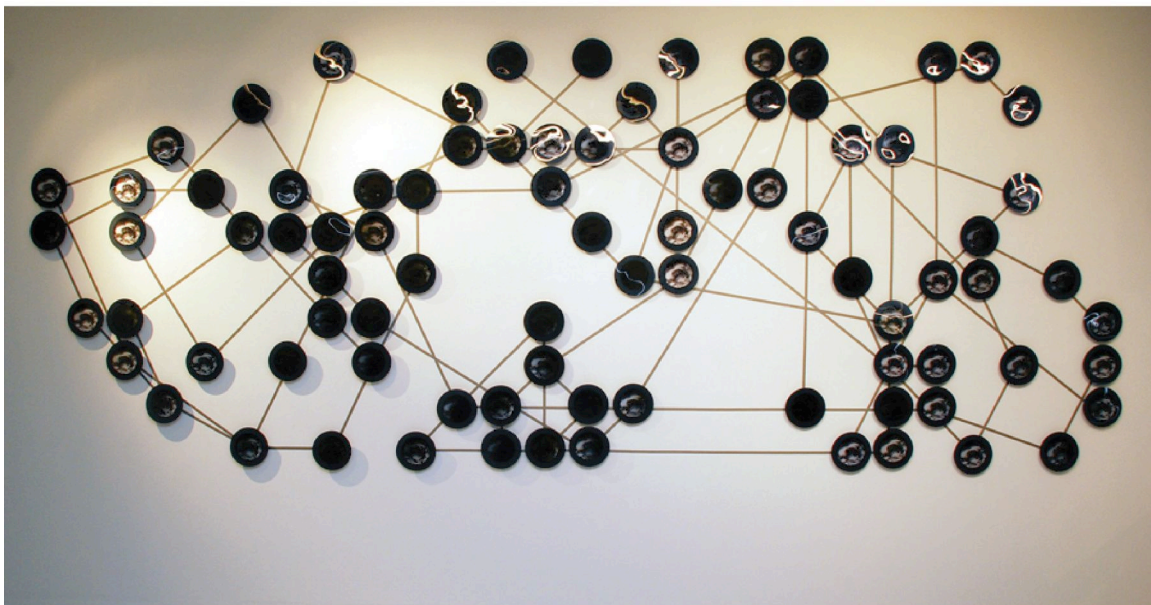
*Transmeandering Helix (Part 1)* • Ink • 28" x 108" • 2009



*Transmeandering Helix (Part 2)* • Ink, vinyl & plexi-glas • 28" x 192" • 2009



*Transmeanderation Helix (Part 3)* • Ink • 28" x 48" • 2009



*Zodiac* • Lenticular Prints & Gaffers Tape • 5' x 12 1/2' • 2009



*Altruism with -1/2 Spin* • Lenticular Prints • 24" x 24" each panel • 2009



*Altruism with -1/2 Spin* • (43 total panels)



*Altruism Study* • Graphite • 24" x 24" each • 2009



*Microcosm* • Inkjet Prints • 93" x 108" • 2008-09

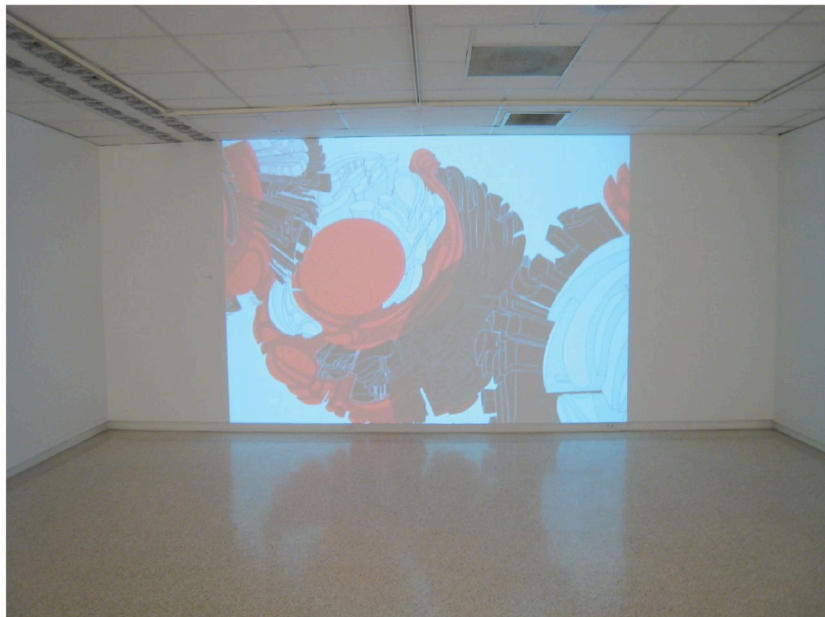


*Microcosm* • Detail





*Cosm* • Inkjet Prints • 101" x 101" • 2008-09



*Macrocosm* • Digital Projection • 108" x 142" • 2009

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## VITA

### DAVID B. MAZURE

- Personal Data:                   Date of Birth: November 24, 1976  
  Place of birth: Belleville, New Jersey  
  Marital Status: Single
- Education:                        Rutherford High School, Rutherford, NJ  
  B.F.A Visual Arts: Graphic Design, Rutgers University –  
  Mason Gross School of the Arts, New Brunswick,  
  New Jersey 1998  
  M.F.A Fine Art: Printmaking, East Tennessee State  
  University, Johnson City, Tennessee 2009
- Professional Experience:        Instructor, East Tennessee State University; Johnson City,  
  Tennessee, 2007-2009  
  Senior Designer, French Toast/LT Apparel; New York,  
  New York, 2002-2007  
  Senior Designer, Brian Brothers; Carlstadt, New Jersey,  
  2001-2002  
  Graphic Designer, Kinkos; Beaverton, Oregon and  
  Secaucus, New Jersey, 2000-2001
- Publications:                    Manifest National Drawing Annual 2007  
  Mockingbird 2007-2009  
  Vision Magazine Vol. 2, Issues 11, 15 & 16  
  The Daily News (New York, NY) August 19, 2004  
  Earnshaw's Magazine, March 2003  
  Eep Comics, Issues 1-4  
  Comic Library International, Issues 2, 3 & 4  
  EXPO 2000  
  Impulse Freak #2  
  CAR Comics Presents, Issues 1-5  
  The Daily Targum 1997  
  The Greenprint 1996-1998  
  John Doe Comics 1994-1998
- Honors and Awards:             First Place Juror Award – Mockingbird Competition (Art  
  Category) 2009  
  Solo Award Winner – Mystery in the Natural World,  
  Caladan Gallery, 2008  
  2 Honorable Mentions – 22<sup>nd</sup> International Juried Show,  
  Visual Arts Center of New Jersey

Honorable Mention – Mockingbird Competition (Art  
Category) 2008  
Merit Award – Paradox Exhibit, 21<sup>st</sup> Century Juried Art  
Competition, 2007  
Honorable Mention – Mockingbird Competition (Art  
Category) 2007  
Full Tuition Scholarship – East Tennessee State University,  
2006-2009  
Edward J. Bloustein Scholarship – Rutgers the State  
University of New Jersey, 1994-1998