

## HYPOSTASIS AND THE DYNAMIC IMAGINATION

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## ABSTRACT

Hypostasis and the Dynamic Imagination

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How we know what we know is complex and multifaceted. In both the humanities and sciences there are instances where the objective and subjective overlap and sometimes merge. This is the terrain of my research. My thesis employs Gaston Bachelard's phenomenology and philosophies of the imagination to investigate the material, poetic and dynamic imaginations as they relate to the sciences, the visual arts and specifically to my work and practice as a visual artist. I argue that the seemingly paradoxical blending of the objective and the subjective, the two ways of knowing, creates a dynamic space that allows for innovative contemplation, reflection, and deeper understanding. The strictly rational generation of scientific knowledge is often initiated out of human curiosity and the capacity to imagine, wonder and formulate interesting questions. By attending to the material reality of the world, poeticized and dynamic images can reveal themselves, providing opportunity for insight and an alignment with the spiritual function of the human imagination and will. In this body of work, I argue that art, like poems, function as phenomenological agents having the potential to activate the human imagination, the creative impulse and a revelatory connection with both life and the material world. The human imagination uses tools such as poetry and the arts to point to that which is beyond the realm of definable knowledge or

to give voice to ideas that are beyond the current capacity of human understanding. The ideas and images in my body of work are informed by the reflection on and investigation of the nature of consciousness and contemplation of experiences present in acts of consciousness including everyday experiences as well as reveries, imagination, oneiric experiences and the recognition of patterns. An investigation of the impact of Bachelard's phenomenology and philosophies of the imagination on diverse fields of inquiry will provide a better understanding and deeper appreciation for his influence on the visual arts and in particular my own practice as an artist. Bachelard's essays on painters and sculptors from his vast writings including his book *The Right to Dream*, describe the phenomenological aspect of the creative processes of specific artist.<sup>i</sup> Reason and imagination both determine how we perceive reality and while the sciences and arts are vastly distinct from one another in method and construct they are both distinctly human endeavors. The human experience is itself both objective and subjective in nature. Bachelard's deep respect for the pre-perceptive nature of the image, and the dynamic function of the human imagination apply to both rational and subjective endeavors. Bachelard's philosophy of the imagination is a phenomenologically based methodology that intersects and expands the potential of both ways of knowing.

## INTRODUCTION

I am often asked the questions “Who influences your work?” or “What artist are you inspired by?” The names that usually come to mind are Penrose, Ramanujan and Mandelbrot and scientist like Wheeler, Greene, Randall and Kaku or the current personalities or theories coming out of popular science. The novelty and ideas emerging out of popular science especially quantum physics are often quite interesting because what they are investigating are topics related to space, time, perception and materiality that have the potential to alter and expand our understanding of reality itself. In modern physics the ontological investigation into the nature of reality is coupled with the epistemological investigation into how we know what we know about reality and this dynamic of physics is interesting. It even includes a continual searching for different ways to know and understand and this pioneering spirit is what connects scientist and artist. The role scientist and artist play culturally is that we stand on the border between the known and unknown and observe what is going on, we investigate ideas, explore, test and notice patterns and then incorporate this into our work. The arts and many artists influence and inform my work as well; however, it is the innovative and creative capacity of the human spirit for which I have the most enthusiasm.

The work of Gaston Bachelard has not only informed and influenced my work; but it has also given me the language and philosophical framework to more clearly articulate the deeper aspects of my own creative process. As I continue to read Bachelard’s books on phenomenology and the poetic imagination, the more interesting and profound his work appeared to me. Bachelard’s books are not ones to be read once and put away. His essays are dynamic and function in the same way as poetry in that they have the potential to activate within the reader a connection with both the material and the transcendent.

In the first half of his career, Bachelard was a scientific philosopher and a strict rationalist. After Einstein published his theory of relativity in 1905, Bachelard became interested in both scientific and literary epistemology and psychology. He thought that Einstein's breakthrough represented a discontinuity from the historical scientific epistemology.<sup>ii</sup> In his book *The New Scientific Spirit*, Bachelard coins the term "epistemological blocks" to describe and highlight a phenomenon that he noticed throughout scientific history where the strict mental patterns that are inherent and required for scientific thinking, block scientific progress. Bachelard's curiosity regarding how mental patterns in scientific reasoning cause stagnation in scientific progress led him to investigate the conditions of thinking required to catalyze scientific breakthroughs. This field of inquiry led, in turn, to established Bachelard's interest in the field of literary criticism and his study and practice around the material, poetic, and dynamic imaginations, which was the central focus of his work in the second part of his career. It is significant to note that Bachelard never felt that he had to give up rational thought or scientific philosophy; he saw his research in phenomenology and poetics as extensions of his earlier scientific work and maintained an obvious capacity for sound reason throughout his life's work. Bachelard developed a unique phenomenological methodology and theory of imagination grounded in the alchemical elements that exerted influence on fields like architecture, poetry, literature and, more broadly the arts and humanities.

I use Gaston Bachelard's phenomenology and philosophies of the imagination to argue that, while the accepted epistemologies and methodologies used in the visual arts and the hard sciences seem antithetical in nature, there is a space where the paradoxical blending of these two ways of knowing overlap and or co-exist in ways that allow for dynamic and creative breakthroughs, innovative thinking and deeper understandings.



Reverie, the creative daydream, is central to Bachelard's ontology. I discuss the significance of reverie and oneiric experiences in my work as well as describe the use of phenomenology and a gestalt-type of pattern recognition. Bachelard developed an approach to literary criticism in which he uses the material elements: earth, air, fire and water as a tool for psychoanalyzing literature and the aesthetic nature of poetry as well as the personalities of poets. Bachelard's decision to use the material elements in this way produced some of his most innovative and creative work and these elements became his primary apparatus in literary criticism.

The body of work this thesis supports includes both two and three-dimensional work. The paintings and drawings are multilayered works made with carefully selected pigments and materials. For example, the paints are oil and egg tempera that have been hand ground for each work. The palettes of many works are dominated by blues and earth pigments that are mined from various places around the world for use by painters. For example, green earth from a mine near Verona Italy, red ochers from England and various versions of ocher and sienna from France, Spain and Italy. Charcoal, inks, color pencils and gold leaf are also used. By using these pigments, mined directly from the earth, a direct link to the material elements of the earth, in their vibrancy and subtly, give a natural aesthetic quality to the paintings. The three-dimensional works are geometrically-based sculptural forms that were first modeled and constructed using foam-core and then made into plaster molds for slip casting. They were further altered by hand before being fired to cone ten in a reduction atmosphere.

This critical essay documents the importance of phenomenological experiences reverie, oneiric experiences, pattern recognition in my work. The practice of intentionally and consistently noticing and honoring experiences that announce themselves as

meaningful or significant I am then also able to align my attention and action with this same meaning. This alignment, through a practice of phenomenology provides a deeply rooted methodology that actively participates in the process of conceiving and developing a work of art. By aligning with what announces itself as significant I am also able to follow a process of experiences that often turn out to be examples of how I know what I did not know that I know. By consistently noting and documenting phenomenological experiences that announce in my field of experience as specifically relevant to a body of work I am able to intuitively recognize and piece together patterns leading to a relevant and meaningful understanding, that emerges in tandem with the process of creating a body of work. The first painting I write about in this critical essay I describe two dreams that initiated the work. At the time I did not see the larger themes and patterns that attention to these oneiric experiences would eventually reveal, however as the body of work for this thesis progressed noticing and documenting other phenomenologically significant experiences mingle with the original ones and patterns and relationships start emerging and when these patterns are recognized this then lends clarity regarding what was already seeded within the initial oneiric experience that supports the themes that emerge throughout this entire body of work.

## CHAPTER ONE: BACHELARD'S NEW SCIENTIFIC SPIRIT

The 19<sup>th</sup> century marked an emergence of ideas that evolved scientific reasoning beyond the traditional Newtonian and Euclidian models. Starting in the early 1800's Friedrich Gauss noticed that Euclid's 2,300-year-old text, *Elements*, the premier discourse on geometry, was limited to three dimensions. Then in 1854 Bernhard Riemann, a student of Gauss, gave his famous lecture on curvature and elliptical geometry ushering in a non-Euclidian geometry that allows for higher dimensional mathematics.<sup>iii</sup> In 1905 Einstein published his theory of special relativity profoundly reshaping how scientist and humanity viewed the universal laws of time and space. Einstein's Work on special and general relativity were breakthroughs that in part came about because he was able to ask questions and organize information in novel ways not considered before.

In his book, *The New Scientific Spirit* first published in 1934, scientific philosopher Gaston Bachelard writes "*Non-Euclidian geometry was not invented in order to contradict Euclidean geometry. It is more in the nature of an adjunct, which makes possible an extension in the idea of geometry*"<sup>iv</sup> This statement illustrates Bachelard's openness to ideas and his capacity to integrate and utilize different ways of thinking, a theme that is further explored in his work in literary criticism and the philosophy of the imagination. Bachelard's book, *The New Scientific Spirit*, was in part the real time documentation of how the discoveries of relativity and the development of quantum mechanics influenced Bachelard's thinking about the structure of scientific thinking itself. Bachelard's ideas and the observation of what he termed "epistemological blocks" and "epistemological rupture" developed out of this work serving as a catalyst for the development of his philosophy of imagination and "phenomena technique" his version of phenomenological investigation that he later termed a hermetic phenomenology.<sup>v</sup>

## CHAPTER TWO: PHENOMENOLOGY AND PRACTICE

“No elementary phenomenon is a phenomenon until it is a registered (observed) phenomenon. It is wrong to speak of the “route” of the photon in the experiment of the beam splitter. It is wrong to attribute a tangibility to the photon in all its travel from the point of entry to its last instant of flight.” (Wheeler, 192 – 193)<sup>vi</sup>

Phenomenology is a philosophically based discipline that studies consciousness from the point of view of the experiencer. Through contemplative observation of what arises or amplifies as important in our conscious experience, an individual is able to observe, to reason, imagine, note significance, recognize patterns and seek meaning and origin. The modern use of phenomenology originates in the early 20<sup>th</sup> century through the work of Husserl, Heidegger and others.<sup>vii</sup> The purpose was to engage a philosophical approach and investigation that did not emphasize the objective over the subjective. It should be noted however, because humans exist in a phenomenological field (known as the world) humans have practiced attending to and noticing phenomena that arises in experiences of being for a much longer time. According to Woodruff Smith:

Yet phenomenology has been practiced, with or without the name, for many centuries. When Hindu and Buddhist philosophers reflected on states of consciousness achieved in a variety of meditative states, they were practicing phenomenology. When Descartes, Hume, and Kant characterized states of perception, thought, and imagination, they were practicing phenomenology. When Brentano classified varieties of mental phenomena (defined by the directedness of consciousness), he was practicing phenomenology. When William James appraised kinds of mental activity in

the stream of consciousness (including their embodiment and their dependence on habit), he too was practicing phenomenology. And when recent analytic philosophers of mind have addressed issues of consciousness and intentionality, they have often been practicing phenomenology.” (smith)<sup>viii</sup>

Bachelard developed a phenomenological technique out of a desire to find a methodology that allowed for the subjective experience to be considered. In his book *The Poetics of Space* he notes the influence of a prominent philosopher of the time, Eugene Minkowski, who used phenomenology to study the “dynamic origin of human life.” From Minkowski’s work, Bachelard acquired the concept of “reverberation” and the notion that participation in the emergent experience of being as it expresses through time and space is a significant endeavor.<sup>ix</sup> It is important to note that Bachelard’s interest in phenomenology came about in conjunction with his observation that strictly reductive scientific methodology while important had serious limitations. In his book *The New Scientific Spirit* Bachelard says “objective thought is too narrow to accommodate the phenomena of physics” To clarify his thesis he states, “What I shall show is that Cartesian method, so useful a tool for explicating the world, is inadequate when it comes to contemplating experience- the true function of objective research.”<sup>x</sup> *Bachelard was pointing out the incongruence within the methodology itself.*

In his search for a solution Bachelard stepped into the arena of the investigation of being through the subjective experience. Through the practice of phenomenology and literary criticism, he developed a comprehensive philosophy of the imagination. Bachelard’s investigation into the significance of the subjective was also a method intended to discover and understand catalyst for the advancements in scientific research

as well as a way to explore the subjective experience as a vital aspect of the lived experience.

The use of phenomenological techniques within a studio practice is multifaceted; my research into Bachelard's philosophy of the imagination has provided deeper understanding of creative processing. The images and ideas guiding my work originate from an attention to phenomenological experiences as they arise and announce themselves as significant in my awareness. The practice of noticing experiences that amplify as significant or meaningful and then structuring my studio practice around this noticing subsequently also aligns the resulting work with the things that presented as meaningful. By noting and documenting significant phenomena that plays out in daily life and in the form of oneiric experiences, memories, feeling experiences like déjà vu and conscious imaginative experiences like reverie, connections can be made, and patterns can be recognized. This practice of noticing things that reveal as meaningful and documenting, contemplating and making connections with previous events that were meaningful which leads to recognizing emerging patterns therefore all this circling back to aligning with the things that reveal as meaningful or significant. A phenomenological experience is a dynamic experience in that our awareness of phenomena unfolds continuously in the act of being. The practice of phenomenology includes all aspects of time, past present and future, simultaneously in each experience. The past influences among other things what we tend to focus our attention on while simultaneously we are aware of and considering the conceptual future as it unfolds.

In my studio practice when a phenomenological event amplifies as significant, whether in the form of a lived experience in daily life through an interaction with the external world or experiences that take form as memories, reverie, felt phenomena like a

déjà vu or oneiric experience, or a curiosity about something, I take notice. When experiences are noticed and considered then the intuitive and rational connections are made, and significant patterns are recognized. In this way the objective and subjective are woven together through the studio process itself as a painting or a ceramic work become the material objective documentation that was guided and influenced by the processing of subjective phenomenological experiences.

The human capacity for logic and reason is beneficial but can also become rigidly shortsighted and limiting in part because the nature of scientific method and logic is to fracture the objective world up into its constituent parts and therefore missing the whole picture. The Human capacity for empathy and an awareness of the gestalt, can also manifest as dangerously naïve and shortsighted in that the gestalt perspective does not always consider the important details. It is also important that my work be aligned with what is most meaningful and the practice of phenomenology assist in this aim. By attending to the material reality of the world, poeticized and dynamic images reveal themselves, providing opportunity for insight and an alignment with the spiritual function of the human imagination and will.

The capacity to pay attention and to notice the things that amplify as significant provides a method for creative processes while also allowing a way to consciously align with the lived experience of being in the world. In this essay I argue that art, like poems, function as phenomenological agents having the potential to activate the human imagination, the creative impulse and a revelatory connection with both life and the material world. The studio processes utilized in creating this body of work are founded in the practice of phenomenology and Bachelard's philosophy of the imagination. For the added dimension of exploring the material imagination, I will note the alchemical elements

that articulate within each of my works respectively and through detailing the experimental processes and practice in relation to the dichotomy of objective and subjective experience.



### CHAPTER THREE: RETURN OF THE GODHEAD - EARTH AND LIGHT

“The phenomenology of the image requires that we participate actively in the creating imagination” <sup>xi</sup> Gaston Bachelard



Figure 1. Detail from *The Return of The Godhead*

For phenomenologists, all experiences that arise in consciousness are real and differ only in classification. For example, the experience of skiing in a day dream is not in the same category of experience as the experience of physically skiing yet both experiences generate value. Reverie and oneiric incidents reveal the complexity and

multidimensionality of the human experience. While we do not fully understand the complexity of our lived experiences, dreams often address aspects of life that we do not yet have the capacity to understand consciously. Dreams also reveal things to us that we are not consciously aware that we know.

The imagery in this painting originated from two oneiric experiences that occurred during my first few months in the MFA program at WCU. The first was a long dream that ended with the disembodied head of my paternal grandfather floating before me at a distance. He was wearing a fedora and I recognized the top part of a collar as being from a pastel-yellow Cuban cigar shirt, that he wore. The colors and sound in this part of the dream were noticeably enhanced and significantly more energetically vibrant than the colors and sound in the earlier part of the same dream. It was the grand finale to a long dream.

With a big smile on his face the levitating head of my paternal grandfather looked directly at me and said, "Hello Martha." As he spoke these words, rays of light shot forth from his eyes and his incredibly white teeth in a comically exaggerated way. The sound of his spoken words and sparks of light emanated outwards directly towards me. There was another concentric ring of light that also radiated forth towards me from a halo around his floating head. The intricate patterns of light, color and sound waves moved across my being with such direct intensity that it instantly awakened me.

The second dream happened almost two weeks later (Sept 10, 2015.) The dream was set in a cathedral-like stone structure that felt ancient. I entered the dream structure in a place that feels deep, but not underground. I saw very tall walls, arched entries and vast open space. There is a dry clean quality to the air. In the periphery of

my visual field I notice someone walking very fast with great determination. It was an older man that is somewhat wiry in stature, yet I saw that he is very fit and strong. He looked at me and smiled and I sensed that he had a great sense of humor as he shared it with me in this exchange. Then he proceeded to enter a hidden opening in the wall that led into a narrow vertical architectural space within the main wall of the building. The man starts climbing the ladder with great urgency. It seems like he is being chased. I walk up to the next level via the normal stairs, where I am met by two short characters dressed in black that enter the scene horizontally from the opposite direction that I entered from. As they approach I know these are predominantly horizontal beings. They are the authority and officially stop me for questioning as I enter the second floor. They ask me if I have seen God. As they ask this I notice the man from earlier in the dream passing by the second level opening in the wall on his climb upward. The authority's backs are turned towards him as they ask me this question, so they don't see him. I think this is quite funny. I realize the man climbing the ladders must be the god they are asking about and not wanting to give him away I deny having seen him. The authorities leave to go on searching. I start climbing the ladders in the hidden vertical chamber, so I can warn this god person that the authorities are looking for him. I look up and see a wisp of him in the vertical distance as he climbs up through the dimensions. I am aware that the authorities keep coming for him on each level where the horizontal "floors" cross with the hidden openings at each dimensional level. At the seventh dimension the authorities capture him. I hear the authority's voices as they command his compliance but don't see what's happening. When I make it to the seventh dimension I see the authorities as they chop off the head of god with an axe. At first, I feel the despair of

being too late to warn him, then God's Head with zero blood or gore of any kind, is suspended in the air before me. He is laughing with a twinkle in his eyes, and I feel his laugh as it reverberates. He winks at me and as he does sparks of light from his eyes and smile shoot outwards towards me and penetrates my whole being like they did in the first dream. Instead of waking up immediately I continue dreaming and I see the head of God with its emanating halo descend towards the earth. I follow him down to the earth however instead of landing when he lands I hover right above where he is to watch what he is doing. The decapitated, haloed head of God then starts mowing the grass of the earth. He does this with a mechanical spiral blade push mower. His haloed head floats just above the handled area of the mower and he pushes the mower across the grasses of the earth with no hands of course. The uncut grass moves in waves like a sea of grass. I see him smiling as he makes a row of cut grass in the vastness of the uncut grass. I am curious regarding how much God seems to love the earth. I see and watch his love, adoration and attentiveness to the earth as he mows the grass. I note to myself in the dream that I would have never guessed that God loved the earth so much.

In '*The Poetics of Reverie*' Bachelard advises that "Instead of looking for the dream in reverie, people should look for reverie in the dream."<sup>xii</sup> He is referring to the recognition of poetic and dynamic experiences within the dream. In documenting and processing these two dreams in my painting, the novelty within the comical archetypal narrative is easily observed, however, two aspects of these dreams stood out as poetic and especially dynamic. The image of the disembodied patriarchal head and the reverberating patterns of enveloping light and sound that vibrated outwards are the images that are emphasized within the painting because they stood out as something

other than just simple parts of a narrative. There were patterns of light that permeated with accompanying sound and perceived physical sensations and the quirky humor. These are the dynamic and poetized aspects within these dreams. This process of exploring and documenting subjective experiences through the act of painting is a way of bridging the subjective experience as an expression in objective reality via construction of a physical painting.



*Figure 2. The Return of the Godhead*

This painting is organized according to mathematical principles: Phi ratio and the diagram of the physics of light as illustrated in Einstein's light cones. This underlying geometry serves as a template that directs the placement of imagery as the progressive layers of the painting developed and overlay it. The painting itself has the elemental quality of earth. The use of ocher and red earth pigments that are harvested from the earth also ground the painting in this element by utilizing these material substances of earth. Gold leaf is also incorporated bringing another elemental quality, of metal, into the painting. The gold leaf also imbues the painting with the quality of a sacred image and that incorporates a theme from the original subjective experience. The theme of Nihilism and the concept of the logos are also significant in this dream and proved to be of continued significance in my research.

## CHAPTER FOUR: THE MANDELBROT SERIES

When I began meditating on the concept of the beauty of matter, I was immediately struck by the neglect of the material cause in aesthetic philosophy. In particular it seemed to me that the individualizing power of matter has been underestimated. Why does everyone always associate the notion of the individual with form? Is there not an individuality in depth that makes matter a totality, even in its smallest division? Meditated upon from the perspective of its depth, matter is the very principle that can dissociate itself from forms. It is not the simple absence of formal activity. It remains itself despite all distortion and division. Moreover, matter may be given value in two ways: by deepening or by elevating. Deepening makes it seem unfathomable like a mystery. Elevation makes it appear to be an inexhaustible force like a miracle. In both cases, meditation on matter cultivates an open imagination. (Bachelard) xiii



*Figure 3. Grouping from The Mandelbrot Series*

This series is a meditation on the beauty inherent in matter from the perspective of depth. When we investigate material reality we generally observe and conceptualize its expression in two ways. We observe matter by looking deeply into it at the atomic and molecular levels, by searching and theorizing things such as quantum particles and quasi-crystalline structures. We also observe and imagine material reality in its expansive cosmic expression through astronomy and physical cosmology. There is a paradoxical nature to these expressions in that, when observed, the material reality seems to continually shift from states of deepening and expanding, and order and chaos.



The Mandelbrot Fractal is a mathematical concept that when expressed visually gives an image of a self-recursive structure. When digitally constructed through iteration it creates highly organized repeating patterns. When observing these fractal forms by zooming into the iterations of these fractals on a computer screen that is programmed with the formula for the Mandelbrot, the deeper one looks into the fractal the more ordered and complex the overall image becomes. Because in fractal generation there is a scaling that occurs with each iteration the form itself also appears to be expanding outward the deeper into the iteration one goes. Mandelbrot's Meditation on the iterations of the Mandelbrot image is a way to explore the mysterious quality of material reality.

The idea of beauty is difficult to define and within art the attempt to create beauty can come across as saccharine, shallow or artificial or it is completely rejected as elitist or trite. In the material world beauty is found in the smallest imagined particle to the widest expanses of the material universe. There is a simpler way to conceptualize this topic related to the concepts of order and chaos. In his 1984 Ted Talk Benoit Mandelbrot describes how when working for IBM he developed a computer graphics program that helped graphic artist depict complex forms in the natural world that seem "rough" or "messy" like clouds, cauliflowers or shorelines using his fractal iterations. This approach worked very well and drastically cut the time it took to depict natural landscapes and objects in digitally animated films.<sup>xiv</sup> His fractals are also used to understand patterns in stock market fluctuations. He details this in his book *The Misbehavior of Markets: A Fractal View of Financial Turbulence*.<sup>xv</sup>

The ceramic vessels in this series are inspired by the Mandelbrot fractal and by the structures and forms found in the material world that follow iterated and or binary

sequences for example molecular structure or the structure of sea organism. In mathematics, the concepts of objective and subjective become quite interesting because of their inversion: things that are normally thought to be subjective like beauty, morality and truth are believed to have an origin in systems of pure logic and reason. My interest in the Mandelbrot set originated, in part, after reading Roger Penrose's book *The Road to Reality: A Complete Guide to the Physical Universe*. This book is written for a general audience and describes mathematical theories in relation to the universal laws of physics while simultaneously addressing the philosophical and aesthetic dimensions of mathematical reality.

In his book, Penrose says, "there is something important to be gained in regarding mathematical structures to have a reality of their own."<sup>xvi</sup> He explains that mathematical theories are not physical entities that exist at some place in time. Instead he imagines a Platonic world that "conjured itself into existence through logic alone."<sup>xvii</sup> A mathematician sometimes delves into the phenomena of an abstract world of numbers and what they discover there is sometimes poetic and beautiful.

The chapter "Three Worlds and Three Deep Mysteries," begins with Penrose explaining that mathematical reality has its own place by stating, "Thus, mathematical existence is different not only from physical existence but also to an existence that is assigned by our mental perceptions, yet there is a deep and mysterious connection with each of those other two forms of existence: the physical and the mental."<sup>xviii</sup>

Penrose uses the Mandelbrot set to illustrate that mathematical proofs and theorems are pre-existent to their discovery through human reasoning. Early in this book Penrose describes the "extraordinary elaborate structure" of the Mandelbrot set

and he points out that the set had been there, defined within a simple mathematical rule that only had to be noticed. He writes:

The point I wish to make is that no one, not even Benoit Mandelbrot himself when he first caught sight of the incredible complications in the fine details of this set, had any real preconceptions of the set's extraordinary richness. The Mandelbrot set is certainly no invention of the human mind. The set is just objectively there in the mathematics itself. If it has meaning to assign an actual existence to the Mandelbrot set, then that existence is not within our minds, for no one can fully comprehend the set's endless variety and unlimited complication. Nor can the existence lie within the multiple computer printouts that begin to capture some of its incredible sophistication and detail, for at the best those printout capture but a shadow of an approximation of the set itself. Yet it has a robustness that is beyond any doubt; for the same structure is revealed to greater and greater fineness the more closely it is examined - independently of the mathematician or computer that examines it. Its existence can only be within the platonic world of mathematical forms. (Penrose) <sup>xix</sup>

One of the most interesting characteristics of the Mandelbrot set is its recursive function where each iteration reveals itself in even-finer recursive detail at increasing magnification. Thus, the deeper one looks into the fractal's iterations the more defined and clear each iteration becomes. Penrose is known for drawing simple images that

demonstrate complicated mathematics and scientific theorems. For example, Penrose uses a drawing to illustrate the idea of a Platonic mathematical world and the interactions of the physical and mental with this world. This drawing is composed of three circles placed apart from one another to form a triangle. Each circle represents a different world. One represents the physical world, one the platonic mathematical world and one the mental world. Penrose uses this schematic to show how these worlds act upon one another. Penrose's theory is that the Mandelbrot set, and all the mathematics associated with it was already there. He writes, "Those designs were already 'in existence' since the beginning of time, in the potential timeless sense that they would necessarily be revealed precisely in the form that we perceive them today, no matter at what time or in what location some perceiving being might have chosen to examine them."<sup>xx</sup>

At the end of the book Penrose returns to this drawing of the three worlds; however, this time the Platonic mathematical world is imbued with the three Platonic absolutes: beauty, morality and truth. In this drawing Penrose shows beauty and truth as deriving from the platonic mathematical worlds into the physical world, suggesting that beauty and truth come into the physical world through logic and reason. He shows morality manifesting from the platonic mathematical worlds into the mental world suggesting that logic and reason act on the mind to generate morality. For Penrose: "Platonic existence, as I see it, refers to the existence of an objective external standard that is not dependent upon our individual opinions nor upon our particular culture."<sup>xxi</sup> So, Penrose is not imagining a pretend world where the three platonic absolutes emerge and impose themselves on humanity and the physical world. He is suggesting that the

Platonic absolutes are inherent universal laws and thus aspects of deeply structured reason and logic. Moreover, Penrose also sees that the platonic absolute of morality as even more important than beauty. For him, morality in scientific discourse is of the utmost importance, especially now as we have developed the technology to destroy our world. He writes,

...but of clear importance in the broader context is the question of an absolute ideal of morality: what is good and what is bad, and how do our minds perceive these values? Morality has a profound connection with the mental world, since it is so intimately related to the values assigned by conscious beings and, more importantly, to the very presence of consciousness itself. It is hard to see what morality might mean in the absence of sentient beings. As science and technology progress, an understanding of the physical circumstances under which mentality is manifested becomes more and more relevant. I believe that it is more important than ever, in today's technological culture, that scientific questions should not be divorced from their moral implications.

(Penrose)<sup>xxii</sup>

In his writing Bachelard describes the pre- perceptive origin of the truly poetic image. It is accessed in deep reverie where one goes so deeply into the material imagination to discover beauty and the poetic images hidden deeply within materiality at the point of its origin. The Mandelbrot set has a seemingly paradoxical complexity to its generations. The mathematics are recursive and repeat inwardly and yet the resulting

image appears to expand outward as one visually or mathematically moves into the iterations. Thus, it creates a phenomenon that expresses the dialectic of the interiority and exteriority: The deeper one moves into the iteration the vaster and more expansive the exterior becomes. The underlying models for these sculptural vessels are based on various geometric solids constructed in foam core then made into plaster molds. A porcelain slip was used to cast these models; a clay body from this same slip was used to add sculptural elements that loosely represent the iterations which get smaller and smaller as they radiate from the original form. These are not mathematically based models; rather, they are imaginative models based on a visual interpretation of the Mandelbrot set that gives an image of what it might look like in a 3-dimensional form.



Figure 4. From *The Mandelbrot Series*

## CHAPTER FIVE: THE PENROSE TILING SERIES

Sir Roger Penrose is known for his extensive research into non-periodic tiling, a tiling configuration that continually fills a space without symmetrical repetition. The tiling patterns used in Penrose tiling are based on a pentagonal geometry and therefore have a five-fold rotational symmetry and lack translational symmetry so there is order, but it is not-periodic. A periodic tiling creates a repeating pattern that has vertical and or horizontal translational symmetry. In non-periodic tiling there is no translatable symmetry. I created a second small series of slip cast porcelain jars that are decorated with Penrose tile patterns. This series is named the Penrose Series. Using diagrammatic representations and patterns that come out of mathematical concepts. These mathematical concepts are rational entities, yet they do not exist as material objects. Using patterns that come out of mathematical concepts and equations in a work of art is a way of paying homage to the human capacity for reason and abstract thinking through the use of interesting patterns that are found within mathematical concepts.





Figure 5. Penrose Tiling Series

CHAPTER SIX: THE APOTHCARY SERIES



Figure 6. Apothecary Jar, Woman with Book, in the MFA Thesis Exhibition

A carefully selected collection of jar-like objects that take varied forms as vessels, some with tops, and all decorated with a variety of imagery relating to the elements, patterns in nature, mathematics and images that relate to the psychological dynamics of the human psyche. Creating these Apothecary Jars required an immersion in elemental processes.

I created plaster molds of the prototypes which were inspired by geometric and mathematical forms found in nature. These models were transformed through the slip-casting process from clay into ceramic objects. The process of making casting slip includes the mixing of mined earth elements such as silica, china clay and feldspar into a liquid and viscous pourable porcelain clay. The slip is poured into the plaster molds and set to a specific amount of time. The longer the slip is in the mold the thicker the cast becomes. The water from the slip is sucked into the plaster through capillary action. After the cast is extracted from the mold it is ready for bisque firing. This is the point in the process that clay changes states from clay to ceramic. The clay can no longer be slaked down back into plastic clay.

The surface design is achieved through applying many layers of glazes. I have approached this process using techniques similar to the techniques I use in painting. Some of the oxides used in ceramics glazes are also used in my paintings: for example, iron oxides, ochers, red earths and chrome green; however; there is a significant difference in using these oxides as pigments in painting and using them in ceramics because the use of these oxides in ceramics requires an understanding of glaze chemistry and includes the testing of recipes in raw material state to create the colors

and textures desired. The relationship between the glaze chemistry and how it is fired in a kiln is complex; the relationship between the glaze chemistry and the temperature and atmosphere in the kiln is what determines properties like color, melting temperature, surface quality and hardness in the glaze. To obtain the desired surface quality I developed a process of painting underglazes onto the surface of bisque vessels and fired these to cone 05 oxidation. I do this same process two or three times so several layers of underglazes build up on the surface. I then apply a clear glaze and fired in a reduction gas firing. This is when the pieces become vitrified at the clay bodies maturation point. I then apply another layer of glaze to specific areas on the vessel and fire again at cone 6 oxidation, a lower temperature, to give another layer of detail to the surface.

The last step for many of the pieces in this series is the application of a gold luster. Luster was invented in the 9<sup>th</sup> century C.E. by Islamic potters. An article compiled by several museums provides a nice description of the development of luster technology:

It is a common statement that productions of ceramic art and craft industry are elected testimonies of the past civilization. Indeed, starting from a material as ordinary and “primary” as earth, any enrichment and creation, any utilization testifies from the technological progress and from the material and spiritual needs of a period, a period which can be identified because clay keeps the memory of places and times. On the 9<sup>th</sup> century, during the most brilliant period of Islamic civilization in Mesopotamia, under the Abbasid caliphate, appears an outstanding

technique of ceramic decoration: lustre, a precursory nanotechnology, a true alchemy which is able to transform simple earth into infinitely precious objects, giving them magnificent shines including the appearance of gold. This kind of decoration is related to a very sophisticated process which creates on the surface of a glazed ceramic a layer of vitreous matter with sub-micron thickness containing metallic particles (copper and silver) with a nanometric diameter. It confers to the surface a particular coloured aspect, often metallic in specular reflection.<sup>xxiii</sup>

Working with gold-luster and researching the history of luster became a significant interest for me. In this process, I experimented with the application of luster by mixing turpentine into the luster resin to create a watercolor-like wash. While the luster resin in its normal concentration results in a predictable gold surface, mixing the turpentine into the resin resulted in a beautiful iridescent violet color found on several pieces within the three series. Working with the elemental processes related to earth, air, fire and water are a natural part of working in ceramics. I am continuing to pay attention to the phenomenological experience of working with these elements through noting qualities and attributes innate in each element used in ceramics. I look forward to future studies on the innate crystalline structures of clays and glazes. Each vessel within the Apothecary Alchemical Series can function as a single work; however, for this exhibition, I have carefully selected a group of apothecary jars for display in order to show a refined series.



Figure 7. Apothecary Jars: Thesis Exhibit, WCU Fine Art Museum 2018



Figure 8. Collage of jars from: *The Apothecary Series*

## CHAPTER SEVEN: WHAT'S HAPPENING - EARTH

*There is no art more direct and palpably creative than painting. For a great painter, meditating on the power of his art, color is a seminal force. Knowing what color works upon matter, that it is a veritable activity of matter, that color lives from a constant interchange of forces between matter and light, the painter, with the fatality of primitive fancies, renews the great cosmic dreams that bind man to the elements- to fire, water, the air of the heavens, the prodigious materiality of the substances of the earth. (Bachelard) <sup>xxiv</sup>*



Figure 9. What's Happening



The importance of contemplation and reverie as methods for creative experience is emphasized by Bachelard many times in his books on reverie and poetics. In reverie, attention is directed externally to material reality as well as internally into the depths of the imaging being. Bachelard uses the term imaging being to describe the person experiencing images that arise in the depths of their being as poetic and dynamic images. As a scientific philosopher who researched the poetic imagination through phenomenology, Bachelard's insights are significant for creative artists and rational scientists alike. He writes: "How can we grasp the difference between the dialectics of reason which juxtaposes contradictions in order to cover the entire range of possibilities, and the dialectic of imagination, which would seize all that is real, and finds more reality in what is hidden than in what is visible"<sup>xxv</sup> Here, Bachelard refers to reason and imagination as he describes a realization he had regarding these two ways of knowing including the observation that, in part, these ways of knowing are so different in nature that they often have to be employed separately; however, he also recognizes the significance of their synthesis. In this same book, *On Poetic Imagination and Reverie* Bachelard exclaims: "Too late did I come to a clear conscience by working alternatively with image and with concepts"<sup>xxvi</sup> He continues with "by working alternately with images and concepts: two consciences, one for daylight, the other accepting the nocturnal side of the soul. To enjoy my double conscience the clear conscious of my double nature, finally realized"<sup>xxvii</sup> Here he describes with great passion the importance of understanding our own human capacity for reason and imagination for objective and subjective experiences so to make good use of both.

In his book *The Master and his Emissary: The Divided Brain and the Making of*

*the Modern World*, Iain McGilchrist lays out a complex and well researched thesis regarding the bi-hemispheric structure of the human brain that addresses directly the fact that humans have a biologically determined binary brain structure and subsequently we also have two ways of knowing. He first addresses the fact that prior research into the bi-hemispheric nature of the brain, that was popularized in the 1990s, was too focused on the mechanical perspective of what specific areas of the brain do. McGilchrist's research instead focuses on how each hemisphere functions in the world. McGilchrist makes a compelling argument that because humans are biologically equipped with a bi-hemispheric brain structure we are also biologically set up for two ways of knowing and two ways of being in the world that are complimentary yet vastly different and he emphasizes that we need both ways to function well. He also argues that because the left hemisphere tends to break the world into its parts and prioritizes systems over reality that it is not fit to lead and is best suited for the role of emissary and that the right hemisphere with its tendency for a gestalt perspective is fit to lead because its perspective allows one to see the whole picture. McGilchrist says: "One of the more durable generalizations about the hemispheres has been the finding that the left hemisphere tends to deal with pieces of information in isolation and the right hemisphere with the entity as a whole, the so-called Gestalt. Possibly underlying and helping to explain the apparent verbal/visual dichotomy, since words are processed serially, and images are taken in all at once." <sup>xxviii</sup>

McGilchrist argues that excesses in the dominance of either way of being causes imbalance regarding how we are in the world, however when the left hemisphere dominates, society then the individual humans that makeup society lose touch with the

big picture and with the very things that make life worth living. Similar to Bachelard's research, McGilchrist lays out in great detail the scientific, historical, cultural and personal contributions that both ways of knowing have made. He then uses this historical, neurological, and cultural analysis to argue that because the right hemisphere allows us to see the whole picture the right hemisphere should lead, and the left should serve the right, not the other way around. McGilchrist addresses the outcome for the arts when left hemispheric or logical thinking dominates a culture. He says, "Beauty has effectively been airbrushed out of the story of art, like a public figure that has fallen from favor in a brutal regime. Beauty is rarely mentioned in contemporary art critiques: in a reflection of the left hemisphere's values, a work is conventionally praised as 'strong' or 'challenging' in the rhetoric of power, the only rhetoric in all our relations with the world and with one another that we are permitted."<sup>xxix</sup>

In addressing postmodernism, he points out that by repressing or leaving out the gestalt perspective, the perspective that Bachelard would call the poetic, we effectively block the very things that make us human. McGilchrist writes, "Through these assaults of the left hemisphere on the body, spirituality and art, essentially mocking, discounting or dismantling what it does not understand and cannot use, we are at risk of becoming trapped in an I-it world, with all the exits through which we might rediscover an I-thou world being progressively blocked off."<sup>xxx</sup>



Figure 10. Roger van der Weyden's *Descent from the Cross*<sup>xxxii</sup>



Figure 11. Max Beckmann's *Descent from the Cross*

xxxii

The idea for the painting *What's Happening*, developed after making several color copies of Roger van der Weyden's *Descent from the Cross* and placing them on the walls of specific places, in my studio and house, that would provide opportunities for contemplation. Later I came across a painting by the German painter, Max Beckmann who, possibly challenged by a curator, painted his own version of *Descent from the*

Cross in 1917.<sup>xxxiii</sup> Knowing that Beckmann was a figurative painter who also admired the old masters, I placed a color copy of Beckmann's painting beside the Roger Van der Weyden's image and closely contemplated both of these works. The Beckmann painting intrigued me in different ways than van der Weyden's. First, I noted that Beckmann's painting was much cooler in its overall interpretation and had a vertical composition, yet the artist had clearly taken notice of the primary palette used by Van der Weyden and had included this primary palette in sectioned off areas within his own painting. It also seemed that Beckmann used energetic mark-making through the use of bold lines within the figures as these lines imparted a dynamic emotive quality to the figures, possibly evoking the emotionality of Van der Weyden's lyrically "swooning" figures. In this type of contemplation, the rational mind notices all of these details and compares these paintings; however, it is after the rational thinking mind has compared and thought about all these details that it quiets and I am then able to move into a deeper level of contemplation. Within this quiet contemplation the phenomenological experience of the original attraction to these paintings arose again as a reverberation of the pure aesthetics of image. The experience of being drawn towards these paintings with an enthusiasm over which I had no control was a phenomenological experience. It was not a matter of thinking about van der Weyden's work and consciously deciding to be attracted to it; I was attracted to this painting the instant it came into my awareness. This attraction provided a direction that influenced the development of my painting, *What's Happening*. This is an example of a subjective experience directing the creation of an objective painting. The practice of attending to what reveals as meaningful in our field of experience is a tool for aligning attention and action.

The perception of color is a phenomenological experience. The use color in the works of old masters like Van der Weyden's has significantly influenced my own approach to painting. As an undergraduate the use of synthetic acrylic paints was the norm. I found working with these paints, and especially the quality of the resulting paintings was an unsatisfactory experience. In visiting museums, I was always drawn to the works of the old masters like Durer, Rembrandt or Van Eyck. and many others from different historical periods. In examining these paintings, it became clear that what interested me the most was the material quality of the paints used. Standing before these paintings it was obvious that these paintings could not be executed with modern acrylic paints of the late 80's early 90's. The quality and robustness of these materials displayed in the works encountered in museums is what initiated my interest in learning about these methods of painting. I noted things like the variety and vibrancy of pigments that are not over ground or mixed with unnecessary fillers which allowed the quality of these pigments to stand out. I observed subtle building up of multiple layers of paint and glazes made possible by the artist eye and use of materials as they are modified to fit the requirements for each step in the process which provided me the paints essential properties and an understanding of how they will behave materially.

My research on the color palettes used in these two paintings included investigating the possible materials and methods used by these artists. In contemplating these works I realized that it was Beckmann's style and van der Weyden's methods that most interested me. An appreciation for the materials and methods of these artist is incorporated into this particular work, as well as into my overall approach to painting. My studio practice includes painting on wood panels that are carefully prepared with many

layers of a traditional gesso chalk and marble dust. This ground allows for an absorbent and naturally reflective surface that is similar to fresco. The material and methods of the 15<sup>th</sup> to 17<sup>th</sup> century Flemish painters have had significant influence on my own studio practice. A detailed description of the studio practice of the workshops of the Flemish painters from this same period, including Netherlandish painter Jan Van Eyck, are discussed in Max Doerner's book, *The Materials of the Artist and Their Use in Painting*. He describes the Flemish technique of using both egg tempera and oil paint in a precise and well researched methodology for painting.<sup>xxxiv</sup> This method not only accounts for the clarity and jewel-like luminosity of color, but also the capacity to render incredible detail and depth in painting. It also produces durable paintings that are unmatched in other painting methods of the period. Paintings executed using these Flemish techniques have remained intact and remarkably vibrant over many centuries. While there was certainly research and building of technical skills required to development of this method of painting, it was the subjective experience of awe, enthusiasm and aspiration when seeing works of art that used these methods that directed my interest in adopting these methods in my studio practice. Through the experience of the works of art, I was inspired to research how to use these techniques.

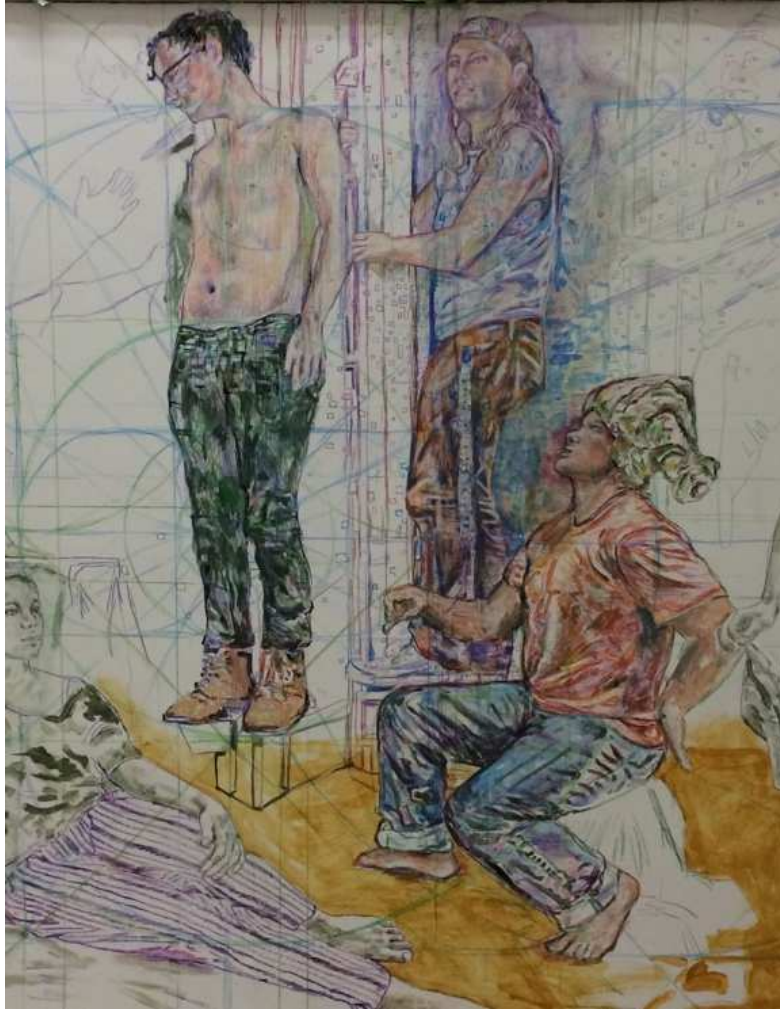


Figure 12. Detail from the Underpainting for *What's Happening*

The figure studies for this painting are taken from photographs of fellow graduate students who agreed to model for this painting. During the photoshoot an image of van der Weyden's painting hung on the wall and the models looked at it for ideas for their own poses. Because the inescapable reality of human vulnerability and suffering is emphasized in Van der Weyden's *Descent from the Cross*, these aspects of the human experience were also acted out during the shoot. The figure studies from these photos were then arranged into the composition for the painting. Painting the MFA graduate student in the painting *What's Happening* was a lot of fun and included incorporating details from everyone's personalities into the painting.



Each painting in this thesis exhibit starts out with an underlying geometric template that guides the placement of imagery. In most paintings I create the geometric sketch for the underpainting that relates to the ideas and narrative of the developing painting. In this painting however, I found a compositional analysis of Van der Weyden's painting in the book *The Painter's Secrete Geometry* which I used in the underpainting of this work. <sup>xxxv</sup>

The element that dominates this painting, *What's Happening*, is earth. The use of the red earth pigments and the obvious grounding of the subjects gives this painting the elemental feel of earth. Some of these figures have second images of the same figure painted over or beside the original creating a trailing effect that makes it appear that trails of the figure are present from multiple slices of time or as if the figures are shifting in and out of space temporally. There are also many smaller dynamic energetic mark-makings throughout the painting that suggest a motion or movement and a shifting in and out of time and space. This energetic mark-making follows through in many of the paintings in this thesis exhibit and the next painting is the best example of this.

## CHAPTER EIGHT: THE PROBABILITY AND POSSIBILITY OF TEA -TIME AND LIGHT



*Figure 13. The Probability and Possibility of Tea*

The Probability, and Possibility of Tea, originated out of an imaginative artistic investigation into the perception of time and free will and how they might interact and unfold in material reality. Ideas around phenomenology varied as different philosophers developed their own methods of practice. However most all phenomenologist considerer the perception and experience of time as significant to phenomenology. The father of Phenomenology Edmund Husserl

suggests that we perceive time on different levels.

Any subject participates in several time dimensions: There is first his particular inner time, the flux of immanent time, in which the constituting experiences have their place; secondly the time dimension of the constituted experiences, the (still subjective) space-time. By reason of the relationships of simultaneity, of "before" and "after," prevailing between both dimensions the primarily constituted unity of the appearing thing is, as to its duration, simultaneous with the continuity of perception and its noetical duration. There is, thirdly, the objective intersubjective time which forms a prioria single order of time with all the subjective times: The objective time and the objective space "appear" as "valid" phenomena in the subjective orders of space-time. This is the true reason of the exchangeability of places mentioned herein before. The communicative common environment pre-supposes that the same thing given to me now (namely in an intersubjective Now) in a particular adumbration can be given to the other in the same modus thereafter in the flux of intersubjective time and vice versa. The concept of normalcy and anomaly of experience, which we encountered in the solipsistic analysis, receives now a new, intersubjective, meaning.

(Husserl)<sup>xxxvi</sup>

The perception of time is also directly analyzed in other phenomenologically

based works for example in Heidegger's *Being and Time*<sup>xxxvii</sup> and Bachelard's book *The Intuition of the Instant*.<sup>xxxviii</sup> To the phenomenologist, the past, present, and future are all intertwined in phenomenological experiences, and the present or instant is where phenomena manifest. The phenomenological experiences of stepping out of time are also addressed by Bachelard and others however this topic is too complicated to discuss in this essay. In the practice of phenomenology, it is clear that the past and future consistently influence the present.

The idea for this painting came from a phenomenological experience that took only an instant. This experience occurred in a well-lit circularly arranged room where a group of around 12 people were gathered. One person stood up from where she was seated and stated her intention to warm her tea and offering to bring more tea in for anyone that would like it. As she stood to do this, I observed her looked to her right and left at the group of people around her apparently contemplating which way she should go to exit the room. In the instant of witnessing this, my imagination produced images detailing how this might play out. I imagined the potential that might play out materially through time and space as it could potentially manifest for both choices simultaneously. In this experience, I imagined time as if in slow motion and events that might play out in time were expressing in multiple frames. The images took form as square units that moved within an organized toroidal format. I imagined to her left what would manifest materially moment by moment if she chose to go to her left and at the same time, I imagined to her right, what would reveal materially moment to

moment in her life if she went right. Each frame envisioned on each side of her within this experience held a slightly different expression as if it was her motion through time. What I imagined were the subtle differences this one choice could make when lived out in material reality through time. This whole event of imagining this occurred in one or two seconds as I simultaneously witnessed her making this decision in real time.

One of the most interesting dynamics regarding thinking in images is that a lot of information can be detailed in one dynamic image, in an instant that takes only a second or two to experience a vast array of complex information can be conferred. This subjective experience of imagining how the potential of free will and time might interact was further explored through the process of thinking about the images I had imagined and translating and illustrating the imagined imagery that I generated during this phenomenological experience as inspiration for this painting. I emphasize the square openings that held the imagined images because it seemed significant in that the way the framing moved in space was my imaginations way of exploring how time functions within space when expressed through the act of conscious choice. The image seemed to have its center on the location of the event, the woman I watched make this decision, and they flowed outward around the event like a toroidal configuration. At the time that I imagined this I was also reading two books, Brian Greene's *The Fabric of the Cosmos: Space Time and the Texture of Reality*<sup>xxxix</sup> and Martin Heidegger's *Being and Time*.<sup>xl</sup> Both these books certainly primed my imagination to consider the nature of time in interesting ways. The

philosophers of the early twentieth century were not the only ones investigating the experience and nature of time.

In *Art and Physics*, Leonard Shlain describes how in 1913 the cubist didn't want to exhibit their work alongside the young emerging artist Marcel Duchamp's work because the painting he had submitted to a cubist exhibit was too futuristic to be shown alongside Picasso. In this same exhibit the Italian Futurist had also been offended because Marcel Duchamp's painting, *Nude Descending the Staircase*, did not abide by the ideologically imbued manifesto that the futurist developed and lived by that denounced the nude as "nauseous and tedious" in painting. Shlain describes that when this occurred Duchamp had defended his painting as "an expression of time and space through abstract presentation of motion. Shlain commenting on this ask the reader "Had Einstein commissioned Duchamp to render diagrammatically what happens to time at near the speed of light?"<sup>xli</sup> Shlain is relaying this historic event regarding the work of Marcel Duchamp to demonstrate that artist get to the new ideas first and then the scientist follow quickly after the artist.

*The Probability and Possibility of Tea* is a painting that came about from both the reading about rationally based scientific theories and considering philosophical ideas regarding time and also from an experience that was the imagination's attempt to make sense of realities like time and space through the generation of dynamic images.



Figure 14. Detail from *Probability and Possibility of Tea*

CHAPTER NINE: JENNA SEEING LEFT AND RIGHT - EARTH AND COSMOS



Figure 15. Jenna Seeing Left and Right



The first phenomenon that instigated this drawing occurred during a graduate trip to New York. One morning, while our group was having breakfast in a café, I was seated with a group that included a fellow graduate student named Jenna. During breakfast a conversation about dreams came up and Jenna told everyone at the table about a long-standing recurring dream where she found herself swimming with crocodiles. As she shared this dream with the group, the Egyptian Temple, Kom Ombo immediately came to mind and I shared what I know about this temple with the group. The Temple of Kom Ombo is a rare twin temple located in Upper Egypt. The southern half of the temple is dedicated to the crocodile god Sobek. Archaeologists have discovered mummified crocodiles buried around this temple. On one of the interior walls, the temple has beautifully rendered images of what might be surgical implements. What is unusual about this temple complex is that the architectural structure is perfectly symmetrical along its main axis making an architectural mirror image of the twin temple. Jenna had modeled for the painting *What's Happening*, and I had a lot of photographs from the modeling session that had not yet been used. Because Jenna is also a painter, she had an innate understanding of what a painter would require in a figurative image when painting from a photograph. For the modeling session, she chose clothing that she knew would be interesting to paint and she was aware of things like the placement of her hands and feet making sure they would be angled in a way that would make painting them interesting and easier to paint.

After deciding to execute a large-scale drawing with Jenna as the subject, I ask her permission and started to gather ideas for the drawing. The first step was to cut the paper for the drawing from a large roll of drawing paper. I decided to use the Egyptian

royal cubit as the basis for measurement and cut each of the two lengths of paper to a specific number of royal cubits. The rationale for this decision came from Jenna's dream and as a way of incorporating the mathematical measure used in temple building into the drawing. The royal cubit was chosen because it matched her personality. She has an obvious sense of regal command in her public presentation. She has a strong yet grounded and perceptive personality much like the archetype of a wise queen. Because figures in Egyptian art sometimes makes use of hierarchical scaling to note social standing so drawing her in large format and using the royal cubit fit Jenna's personality as well. The drawing would be a hand drawn mirror image of Jenna seated in a chair holding a star tetrahedron and looking through a spectacle lens attached to a long handle.

In addition to aspects of Jenna's personality, elements of the dream she shared during our breakfast in New York are incorporated into the drawing. The symmetrical design of the Kom Ombo Temple complex is reflective in the drawing. Blueprints of the temple's floorplan are drawn into the area of floor located below Jenna's chair. The crocodiles that were already symbolically incorporated into some of these blueprints are drawn in as well. At the bottom of the drawing right under Jenna's feet, there is the appearance of an earth like mirage containing a present day rendering of the temple. The dress Jenna wears is drawn to show the energetic almost ethereal quality in the pattern of the fabrics drapery. The 23 Kt. gold leaf that covers the geometric form and parts of the spectacle that Jenna holds, and gold leaf squares incorporated into the pattern of the background of the drawing also gives an intentional cosmic quality to the setting of the drawing. Another reason for the use of gold leaf in this work is the fact that

the name Kom Ombo translates as “the golden mound” or the hill city of the golden. An Archeological section of a report for this temple complex states “The name Kom Ombo derives from its ancient pharaonic name, translated as “the golden” Nbw in Hieroglyphs, Imbw in Coptic and Ombos in Greek. The modern Arabic name translates as mound of Ombo.”<sup>xlii</sup>

Both the material setting, and Jenna are also mirrored within this drawing to signify the dual aspect of the human experience as well as the human capacity for self-reflection. The materials used to execute this drawing were specifically chosen for how their qualities relate to the elements of earth and the cosmic quality of air. A thinned green earth tempera is used as one of the main paint colors in the drawing. Light fast inks, originally intended for airbrushing, are painted into the dress and background by hand. While the element of earth is present, there is a cosmic dynamic to the drawing that cannot be ignored. Through the incorporation of information obtained through subjective experiences, this drawing becomes an objective site for the contemplation of subjective phenomena.

CHAPTER TEN: TRIPLE LIBERTY APOCALYPSE - WATER AND AIR



Figure 16. Triple Liberty Apocalypse

In keeping with past practice, an interest in the concept of Liberty amplified in my conscious awareness because of several oneiric experiences in which various versions of Lady Liberty with her confident stance and stellated crown appeared in several dreams. The emergence of Lady Liberty led to curiosity regarding the meaning/s of liberty including its manifestation as a predominantly female personification historically? This painting is centered around the idea of liberty and includes contemporary images of lady liberty in the visual articulation of this idea into a figurative painting. A Moravian star found in our family's attic that had been fashioned into a stellated head piece was gathered along with other props for a photo shoot with my daughters as models. When meditating on the composition and images, a triple aspect of liberty kept emerging. Within these moments of reverie, the image of liberty as a transformative agent would reveal itself. Trusting the correctness of these experiences, the painting of a triple aspect of liberty was initiated.

Upon further research it became clear that liberty is a multifaceted concept that has political, scientific and individual relevance. Three significant expressions of liberty in the area of individual rights are freedom of speech, freedom of thought, and the freedom to act. These rights are paramount for the development of individuals that have the ability to think, speak, and act in the world. In his essay "On Liberty" John Stuart Mills identified sovereign individuality as one of the "elements of well-being" where the individual benefits society through fostering diversity of thought, and the pursuit of well-reasoned thought and well-being.<sup>xliii</sup> He also argues that repression of opinions or ideas based on the misguided belief of the infallibility of an ideology or doctrine is dangerous

for individuals and society. Mills even states that opinions should never be repressed in part, because the freedom to articulate opinions is how a healthy society is made.<sup>xliv</sup> Individuals that are capable of creativity and innovative thinking are a catalyst for growth and evolution of new ideas that generate new worlds out of past generations. The consequences of repression of thought, speech or action by governments or by one faction of society fosters the formation of authoritarian ideologies and tyranny.

In philosophy and science, the concept of liberty is also bound to the dichotomy of free will and determinism. These concepts are closely related to the idea of objective and subjective truths. There is much debate in the scientific community about the idea of determinism, a concept that seems true when looked at through the mechanical laws of physics. While, the argument for determinism is ongoing the fact that the subjective experience of consciousness is completely left out of scientific equations is often emphasized as a significant problem. Consciousness is something that science has not been able to pin down, define or measure and because it is elusive and has a deeply mysterious quality, it is often ignored, thought insignificant or thought to not exist at all. Yet many physicists have noted that, without a conscious observer or the conscious participation with material reality, there is nothing there to acknowledge existence. If consciousness is absent then what is perceiving, looking and measuring? What is present to know the laws of physics exist

In her book *Pythagoras' Trousers: God Physics and the Gender Wars* Margaret Wertheim points out that for the majority of human existence myth and religion were the basis for most cultures in regard to how individuals in a given culture depict and make sense of the world they live in. Wertheim points out that since the enlightenment the

western world has based its understanding of reality on science, and especially on physics.<sup>xlv</sup> The way people make sense of the world becomes the psychological foundation for how individuals relate to culture. Wertheim outlines the history of scientific thought, and argues that the exclusive emphasis on rational thought and methodical approach to the sciences is in part due to the fact males have not only dominated the field of science but that they have also actively blocked women from entering the field, She argues that the if the sciences sets the foundation for how modern people construct our view of the world and culture that male exclusivity in the sciences would undoubtedly create a one sided view of what reality is and how it is perceived culturally. Wertheim says:

Why should it matter whether women were involved in the construction of this world picture? The reason for taking cognizance of this fact is that the quantum world picture is not just a matter of cut-and-dried “science,” It has also been the result of human interpretation. I do not mean to imply here that the mathematical relationships the quantum scientist discovered were made up; I am not espousing a purely relativist view of science. But I am saying that the way these relationships were interpreted- and hence the “reality” that we are told they describe- was a cultural construction, just as was the mechanistic world picture of the seventeenth century. She goes on to clarify what the feminist philosopher of science, Wertheim points out that Evelyn Fox Keller was arguing this same topic. She says that “Keller’s point is not that women innately think in different ways than men but rather that because women are often

articulated differently they do often have different ways of seeing and interpreting. Given women's different cultural experiences, it is entirely conceivable that they would have something new to bring to the debates about the reality that quantum mechanics has generated. (Wertheim)<sup>xlvi</sup>

The apocalyptic aspect of this painting is directly related to the ideas that Wertheim is laying out in her book. If it is true that in our modern world, the scientific world view is the prevailing structure dictating how culture is structured and perceived by the people that make up that culture, then the culture is surely skewed to a patriarchal perspective since males have dominated and guard entry into this field. Half of the world view is left out of the overall picture where both females and male perspectives and ways of being in the world are surely required for the development of a balanced world view and culture. Under the critique of Bachelard and Gilchrist the necessarily separate yet also complimentary ways of knowing is the way human endeavor flourish and evolve. Even though the rational and poetic or subjective ways of knowing are not gender specific as both males and females use reason and subjective experiences to make sense of the world, it does seem that the perspectives of both females and males are surely required for the development of a balanced world view and culture. Considering the human population is made up of males and females, it seems reasonable that the sciences, society and culture at large would benefit greatly if both female and male perspectives are represented and have influence regarding how these three important areas of thought and societal organization unfold and developed.

The most significant material elements in *Triple Liberty Apocalypse* are water and air which are represented equally in the painting. The element of water at the



bottom of the painting is cascading down, over and around a crumbling architectural structure. This is the elemental water of the earth and it is causing a transformation of old architectural structures. The three liberties stand on this infrastructure and are depicted on the scale of the size of gods in comparison to the architectural structure on which they stand. The element of air predominates in the upper part of the painting where the open sky is pierced by a thin white lattice structure emerging through the atmosphere of the blue sky. This lattice represents the newly emerging structural reality.

## CHAPTER ELEVEN: THE ASCENT OF DEMOCRACY – EARTH

“Often, we think we are only describing a world of images when we are in fact, going down into our own mystery. We are vertically isomorphic with the great images of depth”

*(Bachelard)<sup>xlvii</sup>*



Figure 17. The Ascent of Democracy in MFA Thesis Exhibition

Phenomenologists assume that we exist in a phenomenological field and that this field of experience is reality. The phenomena of personal experience occur on many levels because humans exist and experience on multiple levels simultaneously e.g.; psychology, physically, mentally and socially. In practice, it is helpful to regard phenomena as experiences or things that amplify in awareness as significant or meaningful. This allows for the potential to utilize phenomenological experiences as a practical tool for aiming and aligning oneself with that which is meaningful. For Bachelard, phenomenology also places consciousness at the center of being. Edward Kaplan in his essay on Bachelard says “Bachelard Studies the creative aspects of imagination not only phenomenologically, but as constituting an ontology. Ultimately, Bachelard’s study of imagination in its creative purity has a profound moral commitment, “to reestablish imagination in its living role as the guide of human life” <sup>xlviii</sup> Here Kaplan is describing phenomenology and specifically the study of imagination as a way of being in the world that potentially aligns with the spiritual and moral dimensions life.

Artists are often pioneers who move into the unknown finding ways to provide glimpses of or to articulate what is not yet imagined often including the things culture most needs to see. In part, I argue that the role of artist is to notice the phenomenological pointers (subjective experiences) that are present within the lived experience that are not being seen or understood collectively and then to actively find ways to express these to the society through the arts. The role of the artist as cultural pioneer takes the form of a person that stands at the edge of what is known and what is

unknown and points out or ushers in new ways of seeing the world.

On the website of Leonard Shlain's book *Art and Physics* he describes the main topic of his book as follows "Visionary artist are the first members of a culture that see the world in a new way. Then, nearly simultaneously, a revolutionary physicist discovers a new way to think about the world." <sup>xlix</sup> Shlain argues that of the role of the artists who are in a field that has traditionally emphasized subjective experience, is as the revolutionary leaders of culture, the pioneers that pierce the unknown and chaotic and point out new ways of seeing, thinking and being in the world that then become a catalyst for similar and related breakthroughs in the fields of the objective sciences, and especially in physics. In fact, Shlain's thesis is very similar to the argument that of Bachelard regarding the role of the ways of knowing and creative breakthroughs in the sciences are actually based in subjective creative experiences. This is why Bachelard coined the term epistemological break in his argument that scientist have to find a new way of looking before new ideas for true scientific breakthroughs can happen. This understanding led Bachelard to direct his research into the field of poetics, literary criticism and the philosophy of imagination.

In the book *The Master and His Emissary*, Iain McGilchrist also makes this same argument. He argues that because humans are biologically predisposed to these two ways of thinking because of the bi-hemispheric nature of the human brain, we have two ways of thinking and being in the world and that while these ways are different in nature and even conflict with and contradict one another at times, both ways of knowing are crucial for human survival.<sup>1</sup>

In *Art and Physics*, Shlain takes this concept a step further. He is arguing that the

artists get there first. That artist usher in the revolutionary new ways of seeing and engaging with the world and that these ideas, that first emerge through artist endeavors then immediately show up in subsequent breakthroughs in scientific thought. Because artists often push the limits of what is known and step into the creative potential of the unknown, they are also cultural pioneers. Scientific methods are necessarily based on the exclusion of the subjective, and subsequently, the rigidness required in scientific methodology also limits the potential for discovery because of the structured way of observing that fractures everything up into its subsequent parts.<sup>ii</sup>

Physicist asks questions regarding the role of the observer and the participatory nature of the universe. This thesis regarding the observer participatory theory is detailed in the Heisenberg Uncertainty Principle.<sup>iii</sup> John Archibald Wheeler, a well-known physicist who coined the term “black hole” is famous for asking these sorts of questions. He also coined the term “Participatory Anthropic Principle” to describe this phenomenon: “In every elementary quantum process the act of observation, or the act of registration, or the act of observer-participatory, or whatever we choose to call it, plays an essential part in giving “tangible reality” to that which we say is happening.”<sup>iii</sup> He goes on to say “In what other way does an elementary quantum phenomenon become a phenomenon except through an elementary act of observer-participatory? To what other foundation then can the universe itself owe its existence except billions upon billions of such acts of registration?”<sup>iv</sup> This is often referred to as the Heisenberg Principle of Uncertainty.<sup>iv</sup>

*The Ascent of Democracy* started out in a different way. The first iteration of this work included figurative imagery that took on a somewhat confrontational feminist

stance with images of empowered women, who have had enough and are taking a stance visually within the painting by looking out directly to the viewer. This first iteration developed out of an attempt to address specific feminist issues that were emerging as significant during this election cycle and turned out to be an over thought out approach that started developing a propagandistic quality.



Figure 18. Early Under Drawing for *The Ascent of Democracy*

The subjective practice of phenomenology, the practice of noticing things that stand out as having meaning and investigating this meaning and aligning with it, played out in a text-book case study in the start of this painting. This painting originated as a way of processing and making sense of the events as they manifested around and after

the 2016 US elections. In processing the magnitude of these events, I realized that the amplified polarization that had been apparent politically for quite a while, was now expressing more significantly. Several phenomenological experiences occurred at the time that impacted how I perceived current events, culturally and individually. One especially odd phenomenon happened on three separate occasions. The first occurred on the day after the presidential elections when a man walked up to me and stated, “now we don’t have to have your” and he stated an explicative that I took as meaning your ideology, “crammed down our throats anymore.” Then this noticeably odd and almost identical event happened two more times over the course of less than two months. It occurred in two other places with a male person saying almost the exact same words to me. Phenomenologically it seemed that a state of amplified political polarization was expressing aggressively in the external world and for some reason expressions of this were manifesting directly in my lived experience.

With a deep curiosity regarding these phenomena, I decided to pay attention from a perspective as close to neutral as possible. This was an effort to more closely observe what was going on culturally and politically. I started noticing that in this polarization there were distortions that seemed to amplify exponentially the farther right or left the political ideology went. I also noticed that what was occurring collectively was also of course manifesting and playing out through the individuals that make up the collective and at this time it was expressing in a more amplified way than I had ever noticed before. This caused me to inspect my own ideologies and beliefs to identify any blind spots that may cause me to contribute to this polarization. This is when the painting, *The Ascent of Democracy*, started to change. I decided that the painting



needed to align with meaning in a way that did not contribute to the polarization yet did contribute to the celebration of women taking an affirmative initiative in the development of culture.

With an interest in the role architecture plays in the foundation of culture I started inquiring about the architectural principles behind patriarchal and democratic ideals. I was directed to the work of several intellectuals in the field of classical studies, the first being Jeffery Hurwitt. I read several of his articles and his book *The Athenian Acropolis: History, Mythology and Archaeology from the Neolithic to the Present*.<sup>lvi</sup> This comprehensive and detailed book focuses on the Parthenon Acropolis in Athens Greece from a historical and archeological perspective. It begins with Neolithic artifacts and goes through the entire history of this site up to current time documenting its role in the development of Greek culture. In reading this book the connections and significance that the Parthenon and the whole Athenian Acropolis have to modern culture started taking shape for me. Architecturally the Parthenon, with its ideals of symmetry balance and reason became the architectural model for the establishment of democracy in the western world. Because architecture lays the foundation for how society is organized and structured, I decided to include the Parthenon in this painting. I then read *The Parthenon Enigma: A New Understanding of the West's Most Iconic Building and the People Who Made It* by Joan Breton Connelly.<sup>lvii</sup> The aspect of Connelly's book that most influenced my painting, *The Ascent of Democracy*, is her emphasis on the fact that historically this building and the entire acropolis, that we like to think of as the birthplace of democracy in truth has a long history that is deeply founded in a mythic identity that centered around cyclic cultic rituals and nature. Throughout this book Connelly details

the history of the Athenian Acropolis and the cosmology and mythological traditions that came out of and shaped the consciousness of the Athenian people. In modern times we see the Parthenon as a symbol of the birthplace of western civilization. Connelly points out that over emphasis on this idea of classical Greek architecture and ideals as the birthplace of western civilization is in part a narcissistic point of view. With the enlightenment an emphasis on rational thought has dominated how we see ourselves and western civilization and that we forget that this cannot be separated from its deeply rooted history in the nature-based mythologies and the occult, religious and spiritual practices connected with the human tendency to recognize, honor and make sacred space. Both Hurwitt's and Connelly's books detail the history of the geographic location of the Acropolises before the Parthenon was constructed there. In her book, *The Parthenon Enigma*, Connelly's first chapter is titled *The Sacred Rock: Myth and Power of Place*.<sup>lviii</sup> This chapter and its title influenced the imagery in my painting significantly as did the fact that both these authors detail the deep history of this location as a place that in its natural state, before any architecture was ever constructed, was perceived and treated as a sacred place by the people that encountered it.



Figure 19. Detail from the lower section of *The Ascent of Democracy*

In the lower section of my painting *The Ascent of Democracy*, the Athenian Acropolis and Parthenon are represented as a scaled architectural model that is situated on top of a “sacred rock.” This pays homage to the architecture as a foundational structure. The rock and architecture are placed in the scenery of nature with a cave, and a snake so the model of the Athenian Acropolis is situated on a large bolder and symbolically cradled in a natural scene including images of a cave and snake evoking a connection to the deepest aspects of both the natural world and the

human psyche.

In his book, *Athens*, James McGregor makes a connection between the sacred natural setting of the Acropolis and the mythology of the people of the 8<sup>th</sup> century BCE.

He writes,

Athenians began to establish the site not as a regional stronghold, but as a powerful shrine. The prominence of the Acropolis, its incorporation of caves near the summit, and its long history all made it a good candidate for this role. It was a spot picked out by nature to play an unusually prominent part in the landscape, and that certainly endowed it with power in people's minds and imaginations. It reached toward the sky, but it also descended into the earth through caves. This meant that it had visible connections not just to the heavens and the Olympian deities living there, but also to the interior of the earth, which was home to earth-based gods. While the history of the ancient world has typically given prominence to the sky gods and their myths, the gods of the earth played a highly important role in worship. The ability of the Acropolis to house both kinds of gods must have given it great power and significance. (Herwitt)<sup>lix</sup>

Emphasizing the vertical was one of the first decision I made that changed the direction of this work. I decided to keep the female rock climber on the left and added another one on the right to continue the theme of the mirroring of figures, a theme that I used in other work in this body of work for this thesis research. After reading Hurwitt and Connelly I knew that an emphasis on the sacred aspect of the natural world would

be important, so I did several watercolor sketches of vertical landscapes and came up with a composition that fit the painting. The setting includes two cliff walls on the right and left that open up to the upper part of the painting. In the lower part there is a naturalistic scene that includes a cave like opening and a large snake encircling the sacred stone with the Parthenon model atop it. There is a small Athena owl on a branch to the left of the painting. All this imagery creates a foundational natural scene that also emphasizes symbolically the psychologic depth of the human psyche along with an ascent into the blue sky with rays of light streaming into the natural scene.

In his essays regarding the poetics of the element of earth Bachelard addresses the primal organic images that arise when one goes deeply into nature. “When Dreaming, we descend into a world that is in depth, in a dwelling that at our every footstep signals its depth, we are also descending into ourselves. If we pay a little attention to the images that are imposed upon us in this descent we cannot fail to detect their organic features.”<sup>ix</sup> Bachelard gives the cave the function of a space of cosmic incubation. He says “The cave is a cosmos. The philosopher recommends an ascesis of the intelligence, and this usually takes place in the cosmic cavern of initiations. Indeed, initiation works in this transitional area between dreams and ideas; the cave is the setting in which daylight works upon the subterranean darkness.”<sup>ixi</sup> In his book, *Earth and Reveries of Rest: An Essay on images of interiority*, Bachelard includes a chapter dedicated to the serpent that opens with mention of the Nagas from Indian mythology in his addressing of the function of imagination. Bachelard argues that when one single image in mythologies is looked at one can find the poetic metaphor. Then he explains this through the phenomena of snake, meaning all of the collective meaning of

snake for the human being based in relation to the whole of our history and the myths that develop out of this desire to articulate the entirety the meaning of snake. Not only has it been paramount that humans understand the meaning of snake from the standpoint of survival it also has deep psychological underpinnings. He says, “When a metaphor is sincere, when it engages the poet, we immediately rediscover the tonality of incantation and because of this, we can say that metaphor is modern incantation. Thus, by paying attention to what are simply variation on an old image I shall be able to show that the literary imagination maintains a profoundly human function”<sup>lxii</sup>

Not only has it been paramount that humans understand the meaning of snake from the standpoint of survival it also provides a link to the resulting deeply psychological underpinnings. The snake is also an image that resonates with the deepest parts of the human psyche. Bachelard writes, “The serpent is one of the most important archetypes of the human soul. It is the most earthen of animals. It is truly the animalized root and, where images are concerned, the link between the vegetable and animal kingdoms.”<sup>lxiii</sup> and “the serpent is thus quite a complex image or, more precisely, a complex of the imagination.”<sup>lxiv</sup>

The snake in *The Ascent of Democracy* was included in part out of an intuitive understanding of what was required to invoke a connection to the element of the earth and to the ancient past of collective humanity. Snakes tend to invoke a sense of depth and awe. By including the snake and the earth elements in the bottom parts of this painting a foundation grounded in the depths of the material world is created, an image of a place from which the ascent begins, from the depths of our being as humans living with and on the earth.

To ascend one must have two places, a foundation to ascend from and the place we aim to rise to. In this same chapter on serpents Bachelard addresses the significance of this relationship of depth and rising in terms of the phenomenology of the imagination. He writes:

The dynamic imagination unites the two poles. It allows us to understand that something within us rises up when some action penetrates deeper- and that; conversely, something penetrates deeper when something else rises.” It goes on “We are the link between nature and the gods or- to stay closer to pure imagination- we are the strongest links between earth and air. We are two kinds of matter in one act.<sup>lxv</sup>

The cave, serpent, rock and earth are the foundations within this painting that metaphorically support the ascent.

CHAPTER TWELVE: THE PHENOMENOLOGY OF A BOOK - FIRE AND AIR

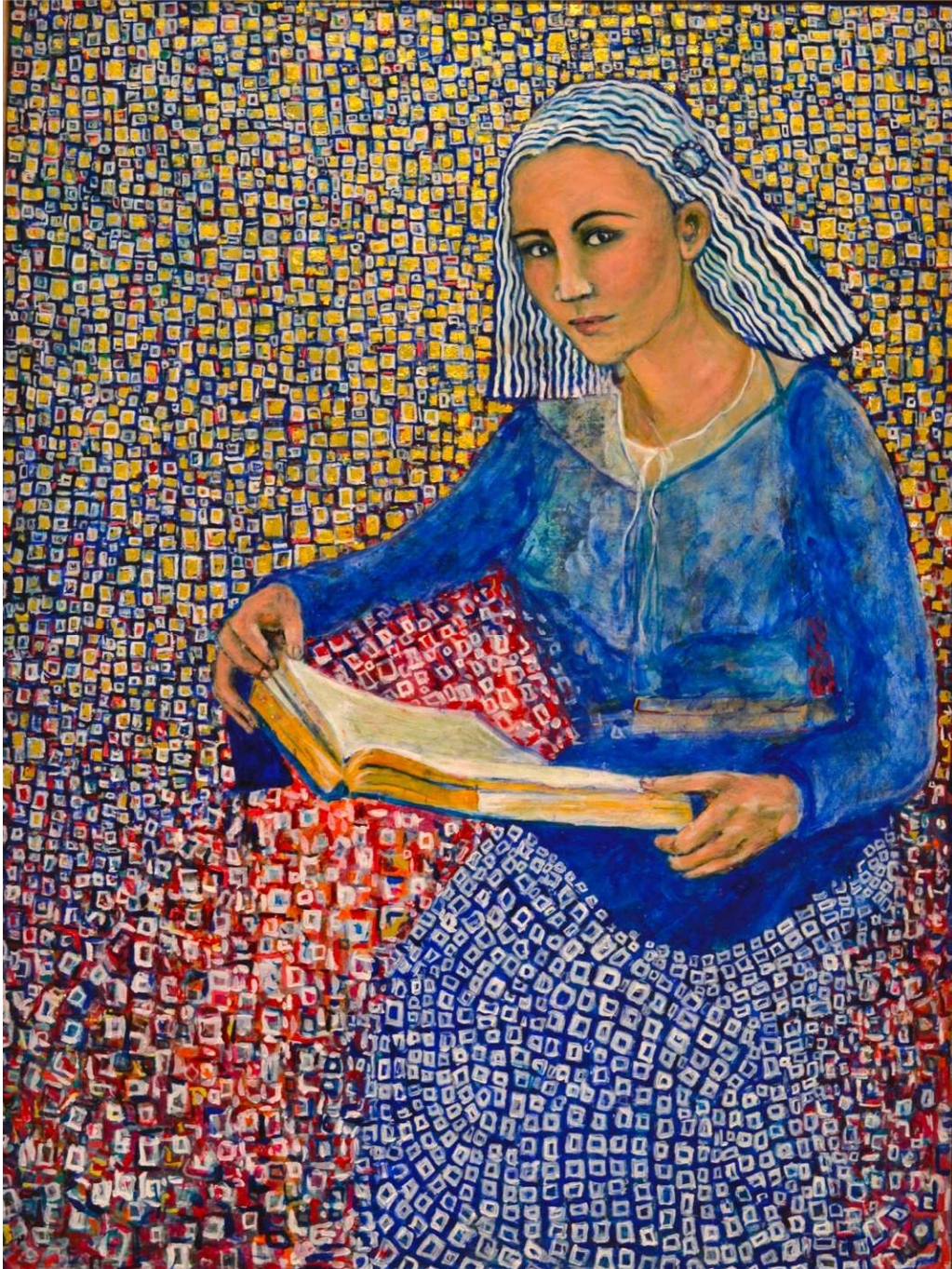


Figure 20. Woman Reading



The two-works addressed in this chapter honor the role books play in human development and evolution. The experience of reading from a physical object called a book reveals that the act of reading a book as a phenomenological experience. From this perspective, the book expands and is much more than just a physical object. It is an agent of change, and evoker of emotions, a source of information. Woman Reading is a painting that features the image of a woman with a book in her hands who is staring out towards the viewer with a piercing look. The background around her is made up of small square based patterns that move into and merge with her clothing. The palette in this painting is brighter than in other paintings in this series. However, the use of the energetic pattern to emphasize a sense of slight dynamic movement makes this painting fit well with other work in this thesis exhibit.



Figure 21. *Red Chair Mirrored*

A further work that includes the book as a central theme is a large drawing titled *Red Chair Mirrored*. This drawing is made up of two vertical panels that hang side by side. There are various figures mirrored within the picture including a person sitting in a red chair holding books that are falling from her arms in a manner that depicts the passing of time as images of iterations of the book falls from her hand towards the floor. There are also larger scale figures in the background that are depicted in acts of

contemplation and listening. On the left-hand side of the drawing, there is a mirrored image of a female in a dress that is holding a tubular hearing device to her ear in a mirrored act of listening. The mirroring of these figures suggests both listening that occurs both outwardly and self-reflective types of hearing or an inward type of listening. This drawing addresses the phenomena of gaining information in a variety of ways for example through contemplation, listening, self-reflection and reading. Both of these works, *Woman Reading*, and *Red Chair Mirrored*, specifically reference the experience of human interaction with books as a phenomenon that is more than a mere interaction with a material object. Reading a book is also a phenomenological experience. Phenomenologically speaking the material object called a book is more than its materiality. It is an object that contains the potential for relaying information, stories, and ideas but more importantly it offers an experience. The experience of interacting with the material object called a book is much more than an interaction with the material world. There are multiple levels to the phenomenological experience of reading a book. One crucial aspect is that a book contains ideas and stories that interact with the mind and consciousness of the human being through the act of reading a book. From this perspective, the material object that we call a book, phenomenologically through the conscious interaction with human consciousness, is much more than its mere material objectivity. Because a book is a physical object that provides a varied subjective experience, it is a perfect symbolic object for describing the complexity and dimensionality of phenomenological experiences.

## CONCLUSION

The research into phenomenology and the epistemology of how we know what we know has significantly informed the body of work making up my thesis exhibit. The work in this exhibit developed around phenomenological investigations into the objective and subjective ways of knowing and the manifestation of meaning. Phenomenology is used as an apparatus to pay greater attention to the unfolding relationship between the multidimensional aspects of time, space and consciousness. As a vehicle for thinking about this complex relationship, I use novel ideas coming out of popular sciences as well as pay homage to the beauty inherent in mathematical truth. The human imagination uses tools such as poetry and the arts to point to that which is beyond the realm of definable knowledge or to give voice to ideas that are beyond the current capacity of human understanding. The ideas and images in this body of work that makes up my thesis exhibition are informed by the reflection on and investigation of material reality as well as the nature of consciousness and contemplation of experiences present in acts of consciousness including everyday experiences as well as reveries, imagination, oneiric experiences and the recognition of patterns.

As an artist I devote great attention to the materials and methods I choose to use in creating a work of art. Many of the elemental materials I use come directly from the earth and the ones that don't are manufactured in chemistry labs. There is a phenomenological aspect to working with raw elemental materials. The pigments each have their own properties and qualities and I have to understand and have knowledge regarding these properties to use them properly in a painting or ceramic piece and I also

give attention to the phenomenological experience of working with these elements. Attending to the phenomenological experience of the materials I use helps me create palettes and works of art that reflect this investigation and discernment that is realized phenomenologically through the works of art produced within and around these experiences.

An interest in the sciences led me to investigate how the subjective and objective ways of knowing influence the various forms of creative endeavors in which humans engage. I have used philosophically-based research methods modeled on the phenomenology of Gaston Bachelard to investigate the role human imagination plays in both the arts and sciences. The practice of phenomenology emphasizes attending to those things that amplify in one's awareness as meaningful or significant and because phenomenological methodology includes noticing and aligning with the things that amplify as meaningful in our conscious awareness, a phenomenologically-based studio practice naturally aligns my work with this same meaning.

In this research I have cited the work of authors and intellectuals from various fields that explore the dualistic nature of how humans think about and experience reality. In his work as a philosopher of science Bachelard noticed the necessity for scientists to step outside of the strictly rational methodology of scientific thinking for groundbreaking progress in scientific thinking to occur. Bachelard coined the term Epistemological Break to describe the dynamic where the strict rational objective reasoning that is required in scientific research subsequently also causes a profound stagnation in scientific progress because by its nature scientific thinking becomes stuck in a feedback loop that can no longer see the big picture or think creatively. Because

Bachelard was a strict rationalist and well-founded philosopher of science, his phenomenological research into the poetic imagination in the second half of his career provides a model for an integrated philosophical approach for understanding and balancing these two ways of thinking and being in the world.

In the chapter of this essay titled *What's Happening*, I cite the work of psychiatrist and Oxford literary scholar, Iain McGilchrist. In his research into the significance of the bi-hemispheric nature of the human brain, he argues that human beings are biologically wired for both rational and gestalt thinking and outlines how this biological trait supports and manages both subjective and objective ways of knowing. His work details how the bi-hemispheric brain accounts for what are two separate yet related ways of knowing and being in the world.<sup>lxvi</sup> McGilchrist's work relates to Bachelard's in that both emphasize the importance of not suppressing the Gestalt or right hemispheric way of perceiving and being in the world because this way of being and thinking is responsible for creative breakthroughs in scientific research as well as for the creation of poetry architecture and art. Both authors also address the significance that the subjective or right hemispheric way of being in the world has in relation to living a meaningful life.

Humans have the capacity for both rational and poetic endeavors. A better understanding of how these two ways of knowing function and support one other has given me a means for integrating my appreciation for the sciences into my studio practice as an artist. Understanding the significance of creative thinking in the sciences and arts has given me a better understanding of the role artist play in the development of culture.

In the chapter titled, *The Ascent of Democracy* I point out that in his book *Art*

*and Physics*, Leonard Shlain puts forth the argument that throughout history it has been the artist and poets that first notice and express innovative ideas and new perspectives. The scientist then follows closely behind with research that supports and further clarifies the significance of these ideas. As an artist interested in the human capacity for innovation and creative thinking, I see the field of quantum physics as a place where a new kind of creative thinking in the sciences is most clearly demonstrated. Through investigating the significance of these two ways of knowing I have been able to integrate my appreciation for the sciences and scientific thinking into my own work as an artist while also recognizing the significance that both roles and ways of knowing play in cultural development.

Originally my research into the work of Joan Breton Connelly and her book *The Parthenon Enigma* was based on researching ideas for the development of my painting *The Ascent of Democracy*; however, I observed that Connelly's ingenious insight into the tendency for contemporary intellectuals to have a blind spot regarding the pre-enlightenment history of the Parthenon and Athenian acropolis. In her argument she points out the tendency for scholars and non-scholars alike to negate the early historic underpinnings and overemphasize the historic significance of rational thought and enlightenment ideals that make Greece the cradle of western civilization. This approach causes us to miss important aspects of Greek history. Connelly points out that the mythology and the mythological identity of the Athenian people that developed over thousands of years emerged from the natural landscape that makes the complex of the Athenian Acropolis significant as a sacred natural location before any architecture was constructed there.<sup>lxvii</sup> In this book Connelly is laying out the research that shows the

significance of a more subjective way of being in the world that also accounts for a significant portion of the history of this place. She emphasizes that historians cannot dismiss the significance that the earlier nature and mythological-based cultural practices had in the development of the foundation of western civilization and the democratic ideals that grew out of it. Connelly's perspective demonstrates through historic documentation how the subjective and objective ways of knowing and being have significant roles in human endeavors and, in the case of Greek history like in the sciences, the subjective ways of being precedes and underlies advancements in rational thought.

Research into phenomenology and especially into the work of French philosopher Gaston Bachelard, has provided a sound methodology that significantly impacts my philosophical approach to making art. Because phenomenology is the practice of attending to the things that shine forth in experiences as meaningful using this philosophical approach aligns my practice and the work that emerges from my practice with this same meaning. An enthusiasm for and interest in the sciences led me to investigate the significant factors regarding how creative thought becomes manifest and actualizes in differing fields. This research has provided insight into the significance of both the subjective and objective ways of knowing.



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