

## **Process and Meaning: Nonlinear Dynamics and Psychology in Visual Art**

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***Abstract:** Creating and viewing visual art are both nonlinear experiences. Creating a work of art is an irreversible process involving increasing levels of complexity and unpredictable events. Viewing art is also creative with collective responses forming autopoietic structures that shape cultural history. Artists work largely from the chaos of the unconscious and visual art contains elements of chaos. Works of art by the author are discussed in reference to nonlinear dynamics. “Travelogues” demonstrates continued emerging interpretations and a deterministic chaos. “Advice to the Imperfect” signifies the resolution of paradox in the nonlinear tension of opposites. “Quanah” shows the nonlinear tension of opposites as an ongoing personal evolution. “The Mother of All Things” depicts seemingly separate phenomena arising from undifferentiated chaos. “Memories” refers to emotional fixations as limit cycles. “Compassionate Heart,” “Wind on the Lake,” and “Le Mal du Pays” are a series of works in fractal format focusing on the archetype of the mother and child. “Sameness, Depth of Mystery” addresses the illusion of hierarchy and the dynamics of symbols. In “Chasadim” the origin of worlds and the regeneration of individuals emerge through chaos. References to chaos in visual art mirror the nonlinear complexity of life.*

**Key Words:** *nonlinear, psychology, art, creativity, paradigm*

### **INTRODUCTION**

Art has the capacity to affect us deeply. For Heidegger (1977, 168) art is a “self-opening world” and Gadamer (1977) sees art as occupying a timeless present that is always contemporary with the viewer. With its strength and immediacy art can be catalytic, producing paradigm shifts in both the viewer and the artist. For this reason, the

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meaning in my work is as important to me as its imagery. I create with the intention of producing catalysts. Transformation is central to evolution, both in the external physical world and in the dynamics that comprise our consciousness.

### **NONLINEAR DYNAMICS IN CREATING AND VIEWING VISUAL ART**

Creativity is a fundamentally nonlinear process (Zausner, 1996). While painting, the artist is in a far-from-equilibrium condition which enables innovation and the emergence of new work. Increasing levels of organization, which are characteristic of chaotic processes, also characterize works of art. The painting starts out as a loose sketch that is overlaid with layers of visual information in the form of paint until it comes into being with increasing levels of complexity. Like other systems in chaos, the creation of art is irreversible. Although brush strokes may be obliterated or washed out with turpentine, they still keep their existence in time as steps on the way to completion. The randomness and unpredictability inherent in chaotic processes are also fundamental to the creation of art. No matter how meticulously I plan, there are always unforeseen events, variations from my original design. And I am not alone in this. Every artist I know has the same experience. Yet these unforeseen occurrences can cause a work to bifurcate into new directions, vastly improving on an original idea. It is often the things you don't plan for and can't control that are the most interesting parts of a painting.

Viewing art is also a nonlinear creative experience. "The creative act is not performed by the artist alone" says the artist and writer Marcel Duchamp (1973, 140) "the spectator brings the work in contact with the external world by deciphering and interpreting its inner qualifications and thus adds his contribution to the creative act." Responding to a work of art is unique for each viewer because we are all different. Every one of us brings our entire life history to that moment of looking (Zausner, in press). Even identical twins with the same genetics will have different life experiences. Our response to the stimulus of a painting will not only vary from other people but also from ourselves at different points in time. For us, each moment is different from all the moments that have passed. We are a constantly changing sum of our experiences, both emotionally and biologically.

Just as Heraclitus (5th century B.C.E./1987) says you cannot step into the same river twice, we are not the same river twice. We change from moment to moment, millisecond to millisecond. Constantly

changing, we are always an approximation of our self and this ever moving approximation is the strange attractor enclosing our fluid identity. Coming from this nonlinear basis, we are capable of original creative responses to art. Collectively our reactions create posterity with some widespread interpretations shaping our cultural history. In reacting with each other these responses to art form a feedback loop of insights and discussions, out of which meaning continues to emerge. Metaphorically these continuing interpretations create an autopoietic structure that continues as long as the work of art exists and there are people to respond. Some information is included, giving energy to the debate, while other information is discarded as waste. Ideas that arise are discussed, amended, and out of the iteration of commentaries, we create culture and civilization.

### **CHAOS, UNCONSCIOUS, AND CREATIVITY**

The many interpretations for a work of art come not only from the wide variety of opinions among viewers but also because artists paint both consciously and unconsciously which gives them multiple sources for the meaning in their work. Although the ratio of conscious to unconscious elements in art may never be quantified, it is my experience that art is created largely through unconscious processes. Creativity appears to emerge from an underlying psychological chaos in the unconscious that produces order in a work of art. Although a rigorous classical art training is designed to make artists function on a conscious level through adherence to guidelines and proportions, creativity is still a conduit for the chaos of unconscious impulses. Despite my training, there have been times when I wanted to paint a specific face yet it turned out to resemble someone else, who was not in my conscious mind at all. And often I didn't realize the resemblance until I was finished working – or until someone else pointed it out to me.

We may think we know and control what we put on canvas or paper but our conscious mind is smaller than the vast unconscious upon which it rests (Ellenberger, 1970). Carl Jung believes (1962, 1971) that beneath our unconscious mind there is a still larger structure, the collective unconscious common to all humankind. He says (1973) everything we think and all that we create arises from these depths because unconscious thoughts affect conscious thinking. The personal unconscious and the collective unconscious are vast chaotic structures (Zausner, 1995). Unknowable in themselves, they become apparent through their influence in dreams, in mythology, and in works of art. It is not surprising to find references to chaos in works of art because the

hand is an extension of the mind. During creativity artists are not completely aware of what they create. Additional meanings may emerge while the work is underway or after its completion. This happens to me all the time

### TRAVELOGUES

It was only after my painting *Travelogues*, as shown in Fig. 1, was finished, that its multiple meanings began to emerge. The inspiration for this work is an aspect of Einstein's General Theory of Relativity, which says that in certain instances time can curve and even form a loop. At the intersection of the loop, it is theoretically possible to meet yourself at another point in time. One might look like a ghostly image similar to the spectral man in painting. Appearing and dissolving into the background, he is a figure of indeterminacy in the midst of a chaos of snowflakes. Other people have looked at this work with different responses. Some said I painted a doppelganger, or a double. Still others, in times of loss or crisis, have sat in front of the painting and found solace. But why, I wondered, did people find this image so encouraging?



Fig. 1. Travelogues.

Then last year, while writing *When Walls Become Doorways* (Zausner, 2007), a book on physical illness and creativity, I realized why people in distress would resonate with this man. He represents perseverance through difficulties. Experienced as times of chaos in life, they are symbolized in the painting by cold weather and snow. Walking with determination, the man wraps his overcoat around himself as if the buttons are gone or useless. Blue veins stand out on his gloveless hands that are red from the cold. One ungloved hand tries to warm the other one beneath it as they clasp the coat to his body. With a hat that shadows his face into anonymity, he can be anyone and all of us, who use inner strength and intention to bring new order from the emotional and physical turbulence of hardships.

Walking quickly, he is in a deterministic chaos that leads to new order rather than an entropic chaos of disorder (Van Eenwyk, 1997). He shows that through will and perseverance we can alter our personal strange attractors and form new basins of attraction for any given situation. Our strength and determination form the inherent order in a chaos of difficulties, allowing us to emerge stronger and transformed. Like the man in the painting, we too can persevere. The important thing is to keep going. It doesn't snow forever.



**Fig. 2.** Advice to the Imperfect.

### ADVICE TO THE IMPERFECT

This painting, *Advice to the Imperfect*, as shown in Fig. 2, addresses three aspects of chaos: the nonlinearity of water, the chaotic nature of the unconscious, and the chaos of paradox. Although the model

is my friend Janeice Silberman, the work is not a portrait of a specific person but a statement about the potential inherent in everyone. She is all of us who can enlarge our lives by moving away from confinement into openness and the nonlinearity of possibilities.

Water which is quintessentially nonlinear, symbolizes the unconscious in Jungian psychology, a place of chaos and creativity. No longer confined, the water in the painting expands and flows and its colors deepen from pale blue to green, symbolic of generation. In the background the waves are small but in the foreground they swell and carry the swimmer, producing what Prigogine and Stengers (1984, 178) call “order through fluctuation.”

If the figure was drowning, it would signify being overwhelmed by unconscious processes and descending into the madness of disorder. But she is swimming while holding two umbrellas. Rationally, the umbrellas impede her swimming but psychologically, they are a sign of strength. I made one umbrella pink and the other white, not knowing why when I painted them. Later when asked about the colors, I realized they are body and spirit that when brought together signify integration. Holding both umbrellas is like simultaneously acknowledging two points of view. It is both the end of dichotomy and the nature of paradox. And at the heart of every paradox is an experience of chaos. It comes from the nonlinear tension of opposites which can generate fusion, bringing insights, breakthroughs, and change.

### QUANAH

The next painting *Quanah*, as shown in Fig. 3, shows the fusion of opposites in the life of a historical figure Quanah Parker (c. 1850-1911). The descendent of a prominent white Texas family and a Comanche leader, he became the last great Chief of the Comanche. Quanah means “fragrant” in the Comanche language and his second name comes from his mother Cynthia Ann Parker, a white woman captured in a raid as a child. She grew up in the Comanche tribe, and married Chief Peta Nocona.

Quanah Parker was a man of two worlds, who by integrating the warring factions of his heritage, became able to help both Native Americans and whites. Growing up as a Comanche, he led successful war parties for years and the army never captured him (Neely, 1995; Hagan, 1993). But as the buffalo herds were diminishing and the white settlers increasing, he realized there was no alternative and led his tribe onto a reservation. For the next twenty-five years until his death in 1911, Quanah Parker encouraged self-sufficiency, work, and education for the

Comanche. Adopting a policy of assimilation and cooperation with whites, he learned English and lobbied Congress to uphold the rights of Native Americans. He also became a reservation judge and a friend of Theodore Roosevelt. Yet he kept the Native American spiritual traditions and never cut his braids. This cultural fusion was not a static accomplishment but an ongoing chaos fueled by the needs of his Comanche tribe and the demands of their new life on the reservation. It produced in him a constantly evolving self.



**Fig. 3.** Quanah.

Another aspect of chaos in this work is the nonlinear experience of inspiration. The painting is based on an old damaged black and white photo of Quanah Parker standing in front of a teepee. I had no idea of his identity when I first saw the image but I was transfixed and wanted to use it for my art. I changed it considerably as I do with all the photos I use but that moment of inspiration was a startle response. It was an experience of internal chaos when the body and mind are jolted into disequilibrium, opening the possibility for bifurcation.

**THE MOTHER OF ALL THINGS**

Native America also inspired *The Mother of All Things*, a drawing as shown in Fig. 4. I used two separate historical photographs of women from different tribes. The woman on the left is a Menomini from Wisconsin and the woman on the right is a Delaware from Oklahoma. It is unlikely they ever met but to me they form a pair, one angry and the other joyful. This gives the work a humorous quality despite its meaning that all thoughts arise from the same nonlinear ground of being. I altered the images to strengthen their appearance as polar opposites and then placed them in landscapes that stretch into the distance, seemingly unconnected. But the point of this work is that they are connected – by the darkness between them that represents the chaos of the plenipotential void.



**Fig. 4.** Mother of All Things.

David Bohm (1983) says the chaos underlying the existence of the phenomenal world is a great ocean of energy, making space not empty but full. He describes matter as a “small ‘quantized’ wavelike excitation on top of this background rather like a tiny ripple of a vast sea” (191). Appearing to be autonomous, three-dimensional forms originate from, are sustained by, and vanish back into the plenum from which they come. The physical nature of the drawing reflects this oneness. Although the figures and landscapes seem separate, it is an

illusion. Everything shares the common ground upon which the art is made. Nothing is separate in Bohm's model either, but connects in the chaos of an underlying field.

Psychologically we are a microcosm of the macrocosm of the void because we mirror its dynamics. Just as Freeman (1991) finds chaos to be a basic state in olfactory recognition, so our emotional responses may come from an underlying chaos that forms our awareness. We can respond positively or negatively to any situation and are also capable of modulating our responses, realizing the actions we choose shape our lives.

### MEMORIES

A dramatic experience of chaos happened at the beginning of my work on the painting *Memories*, as shown in Fig. 5. It was about two or three in the morning and I had been trying unsuccessfully for hours to paint the clouds in the sky. Finally, I became so furious that I could no longer stand the sight of the canvas, so I turned my head away and painted without looking. I would only look at my brush when I loaded it with paint but not at the canvas itself. After a while, I decided to see what I had done and to my surprise, there were the clouds I tried to paint many hours ago. They formed an excellent underpainting for the glazes of transparent color that would bring them to completion.



**Fig. 5.** Memories.

The repeated failed attempts at painting clouds can be seen as a limit cycle and my frustration as the energy needed to bring the work to a

level of creative chaos where it could go forward. The exasperation that kept me from looking at the canvas also facilitated access to a set of learned motor skills that form the physical dance of painting. They are a type of somatic knowing encoded in the hand and the arm like the many memorized steps in tasks we perform unconsciously. Although somatic skill and muscle memory are involved in every aspect of painting, it is unlikely that I would have had the same success while painting a face. Faces and other carefully painted areas call for fine motor control and continued vigilance. But in the sky, chaos took over and the clouds appeared.

*Memories* is a psychological landscape; it is not possible to pull a large heavy cart with small wheels through deep snow. Yet the figure struggles. I consciously intended the sacks on the cart to represent emotional baggage in the form of memories, showing the importance of jettisoning unnecessary loads. When we are obsessed with the past, attempts to go forward circle back to previous fixations, forming a limit cycle. As with *Travelogues*, other people have found a different meaning in this work. Identifying with the straining figure pulling a heavy load in difficult circumstances, they see a person in a deterministic chaos, who through perseverance will succeed against all odds.



Fig. 6. Compassionate Heart.

**ART IN SERIES AS FRACTAL IMAGERY**

Fractals, which are part of nonlinear dynamics, are central to art and perception. Because we never see anything directly, but respond to its neurologically reconstructed image in our brain, every work of art we view is a fractal copy of its original in the external world. In that sense, our entire perception of reality is a fractal recreation triggered by sensory input from external stimuli. In art there are conscious and unconscious fractals. Unconscious fractals are works of art that resemble each other without the artist realizing it. While self-similarity is a hallmark of individual styles, too much resemblance can dissolve into repetition. Conscious fractals are national or historical styles; all cubist paintings are fractals of the style of cubism. Artists also learn through fractal repetition. We make preparatory drawings of an image before painting it on canvas. Conscious fractals are also found as the series of works artists make on a specific theme like Rembrandt's self-portraits or the haystacks and cathedrals that Monet painted in different light throughout the day. Like fractals in nature, they are self-similar but not identical.



**Fig. 7.** Wind on the Lake.



**Fig. 8.** Le Mal du Pays.

All of my works mentioned in this paper, with the exception of Chasadim, exist as fractal images in part of a series. Chasadim will also become a series but right now it is the first drawing of this image. The series of fractal images presented here focuses on the archetype of the mother and child. Archetypes are strange attractors in the collective unconscious (Abraham, 1995) and form part of the inherent order in its vast chaos. They appear to the conscious mind as archetypal images, which are similar across cultures and throughout time. The images partaking of a specific archetype are in a fractal relation to each other and to the original archetypal essence they embody. As a major archetype, the image of a mother and child (Neumann, 1974) is recognizable despite its many variations. *Compassionate Heart*, as shown in Fig. 6, is a black and white print showing the mother and child without a background, while in *Wind on the Lake*, as shown in Fig. 7, they float on water, and in *Le Mal du Pays* (Homesickness), as shown in Fig. 8, they are flying upside down.

#### **SAMENESS, DEPTH OF MYSTERY**

At first glance *Sameness, Depth of Mystery*, as shown in Fig. 9, appears to be an image of hierarchy with the small young acolyte holding an umbrella for the monk. Umbrellas are signs of status in the East where

dignitaries have umbrellas held for them by people of lesser rank (Eberhard, 1986). But careful examination of the painting reveals an opposite meaning. All of its forms fade into darkness or light and also fade into each other intimating the basic oneness of existence. Hierarchy is an illusion. The work refers to a Buddhist religious text, the Heart Sutra, which says that form is emptiness and emptiness is form (Conze, 1958). As in *The Mother of All Things* this painting also implies an underlying nonlinear ground of being from which all differentiation arises.



**Fig. 9.** Sameness, Depth of Mystery.

Like all my work, *Sameness, Depth of Mystery* is symbolic and symbols are catalysts. For Jung (1976) symbols are transformers that convert energy from a lower to a higher level. Van Eenwyck (1997) calls symbols “dynamics to be experienced” (p. 71) and writes that, “Every experience of the chaos that ensues from an encounter with a symbol has the potential to lead to a different outcome” (p. 114). In *Sameness, Depth*

of *Mystery*, symbols point to enlightenment, the ultimate paradigm change. Solar imagery, symbolic of enlightenment, is seen in the yellow robe of the monk and the umbrella with its radiating spokes. As a sheltering protection, the umbrella also suggests the bodhi tree under which Buddha became enlightened.

Having a little boy hold the umbrella reveals that enlightenment may result from even the smallest stimulus. Systems in chaos react to stimuli that would be negligible to systems near equilibrium (Prigogine & Stengers, 1984). Psychological realizations may also come from small stimuli, such as the sudden insights that facilitate personality integration. But to reach the point where self-evolution can be catalyzed by a small stimulus takes a chaos of extensive effort. "Chance," says Pasteur "favors only the mind which is prepared" (cited in Vallery-Radot, 1923, p. 76).

### CHASADIM

This unfinished drawing *Chasadim*, as shown in Fig. 10, is still on my easel in the studio. Like previous works, it contains the nonlinear element of water. For Eliade (1965, p. 202), water symbolizes "the pre-formal, the potential, the chaotic." Here it is rushing in and frothing to create a very active chaos as the man bathes partly submerged. He is from Yemen and the title, *Chasadim* is a Hebrew word. Putting them together shows my hope for peace in the Middle East.

*Chasadim* comes from the Kaballah, a compendium of Jewish mysticism, and refers to Chesed the fourth of the ten sephiroth, which are active emanations of divine power (Kaplan, 1990a, 1990b; Poncé, 1973). Chesed is associated with love, mercy, water, and the first day of creation. Bathing in its waters is a self-baptism of realization and renewal. Eliade (1971) calls baptism a ritual death of the old life that is followed by the birth of a new self, and says it repeats the original act of creation. He connects it symbolically with a great deluge, whose chaos dissolves the old, making way for new order.

Cross-culturally, worlds begin in chaos. Polynesian mythology says the new world emerges from chaotic dark waters (Eliade, 1971). In the Hindu religion the Hiranyagarbha or Golden Germ of the new world floats for eons on a primordial sea (Mookerjee, 1966) and according to the Judeo-Christian tradition, a pre-formal chaos existed before the differentiated world (New English Bible, Genesis 1.1). Like the birth of a world, the psychological rebirth of an individual takes place in a chaos that destroys old paradigms. But it is only through chaos that the new world of our new self begins.



**Fig. 10.** Chasadam.

### CONCLUSION

It is not surprising to find references to chaos in visual art because we, artists and viewers alike, are nonlinear beings. As the dynamic of our existence continues, it is likely that additional meanings will emerge in these and in other works of art because we express ourselves and we view the world through the nonlinear complexity of life.

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