THE MAKING OF ART THROUGH THE UNFOLDING OF TIME

A DISSERTATION

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BY

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To the Dean of the Graduate School:

I am submitting herewith a dissertation written by Laurie Mareta Sanda entitled "The Making of Art through the Unfolding of Time." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Dance.

Penelope Hanstein, Ph.D.
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ABSTRACT

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The purpose of this interdisciplinary study is to investigate the temporal experience of artists during the conception and generation of artworks.

The hybrid methodology of this qualitative study establishes a philosophical framework to integrate ideas from philosophy, psychology, physics, neurobiology, and the arts. Phenomenological language illustrates the philosophical line of reasoning throughout.

Two composers, three choreographers, two visual artists, one novelist, and one fashion designer were interviewed through a series of open-ended questions.

Chapter I initiates discussion of the 'now' moment of creative action and sequences the phases of artistic creativity including: *incubation, impulsion, the action/event, encounter, the emergence of the voice/life of the artwork itself, entrainment, creative/aesthetic engagement, and feedback looping*.

Chapter II details methodology and procedure and identifies the theoretical contributors to the research, particularly Stephen Hawking, Edmund Husserl, John Dewey, and Mihaly Csikszentmihalyi.

Chapter III discusses of the temporal substrate of the imagination, named the *matrix of subjective time*. The matrix of subjective time facilitates 1) a synthesis of memory and expectation, 2) an evolving range of possibility and probability, and 3) a fluid *juxtaposition of temporal referents* that facilitates the conception and construction of new artistic ideas.

Chapter IV describes of the temporal dynamics and *temporal strategies* that surround the artist's transition from creative imagination to creative action. The dynamics are represented as vectors whose summation must produce a *disequilibrium* in order for concrete creative action to occur.

Chapter V magnifies the artist's working rhythm. The artist balances and shifts many temporal components to move the artwork toward completion. These components include: *imagination, self-critique, sensory interaction with the materials, sensory perception of the emerging form, the demands of the medium,* and *documentation.*

Chapter VI explores the temporally transcendent state of creativity that artists occasionally access. *Time dilation* is described as the entry point for the experience of creative *hyper flow* (an extension of Csikszentmihalyi's *flow state*) in the realm of *deep time*.

Chapter VII presents a summary of the artist's ongoing negotiation of time. By studying the patterns of temporal negotiations that artists experience, we come to a deeper understanding of both time and creativity.

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CHAPTER I

MAKING TIME, MAKING ART

Swiftly the head-mass becomes an enchanted loom where millions of flashing shuttles weave a dissolving pattern, always a meaningful pattern although never an abiding one; a shifting harmony of subpatterns.
(Sir Charles Scott Sherrington, *Man On His Nature*, p. 225)

The Loom of Time

All human activity is woven upon the loom of time. Just as a weaving reflects the shape and size of the loom upon which it was made, human endeavors reflect the shapes and sizes of our cultural and individual concepts of time. Human beings all over the world share cycles of night and day, the alternation of the seasons, the internal rhythms of human physiological functions, and the cycle of life from birth to death. But even these references are personalized by culture and by habitat. A day in the Arctic does not mean the same thing as a day in the Amazon. A season in Saudi Arabia has a different definition than a season in Scandinavia. The human life cycle today has a very different shape from the life cycle of 500 or 5,000 years ago. So it is not surprising that different cultures build different looms out of their perceptions of temporal reality.

Within each culture, each individual is a repository for a unique blend of temporal experiences that continually shape and reshape that person's memories, actions and potentialities. We encounter time in many conscious and unconscious ways – the sight of a photograph, a case of the hiccups, the sound of

the refrigerator motor rhythmically humming, the position of the shadows cast by the sun on the ground, the advent of hurricane season, the death of a grandfather, the deepening color on the skin of a tomato. What is common to all of these things? Change is common. Change is the continual expression of time. The loom that each of us builds for our understanding of time is our way of locating ourselves in ceaseless change.

Acts of creation are consumately about change, and a temporal journey is inextricably woven into the creative process. As an artist enters into the conceptual stages of creativity, engagement with the new idea may affect his or her awareness of the passage of time. Everyone experiences this to some degree when deeply engaged in an activity. We have many expressions which reflect this experience, "Where did the time go?" "I lost track of time." Conversely, when we are having trouble focusing on an activity or idea, time seems to slow down. We 'watch the clock' as time 'drags on.' Artists experience these challenges in both the conceptualization and the realization of their creative ideas. When engagement with an idea is unproductive for an extended period of time, artists refer to the state as 'block.' Writer's block is the most commonly known, but the concept extends to all art forms and, indeed, to all creative activity.

Objective measures of time, like clock time or calendar time, may play varying roles in creativity. They may stimulate creative work and/or they may condense it. Different artists have varying ways that they work with and through measured time periods. A deadline, for instance, may be a driving force

to the artist, either a goal or a nuisance. On the other hand, measured time may be incidental to the work. Instead, a work may be allowed to evolve completely 'in its own time.' Just as time awareness is different for each person in day to day life and for each culture in general, it is also individual to every artist and every particular artwork. What do we find when we 'get inside' the temporal experience of an artist at work? What is revealed when we explore the variety of temporal awarenesses that drive, block and accompany creation?

A Narrative of Time

The intent of this chapter is to present a picture of the organizing structure or loom upon which the subsequent narrative of time is woven. This particular loom or armature is a general sequencing of artistic process, a start-to-finish, step-by-step description of the stages or phases of artistic creativity. Mihaly Csikszentmihalyi (1996) refers to the traditional stages of creative process as preparation, incubation, insight, evaluation, and elaboration (p. 79 – 80). In this narrative the traditional stages will be broken into additional identifiable components that highlight temporal transitions in artistic process. Each stage or step is identified by a term or by terms drawn directly or indirectly from a particular set of ideas in the literature about time and creativity. In order of appearance, they include the following: *incubation, impulsion, the action/event, encounter, the voice/life of the artwork itself, entrainment, creative/aesthetic engagement,* and *feedback looping*. I will define each of these phases briefly in this chapter and elaborate upon their temporal components in detail in subsequent chapters. In addition to the phases or stages of artistic process, I will touch on an artistic

modality that may supersede or temporally transcend some of the characteristics of these phases. *Deep time* and *hyper flow* and are the descriptive terms that I will develop in Chapter VI to explore this transcendent creative state.

In this chapter I will also briefly define what I refer to as 'now' moments, theoretical freeze-frames in the minds and actions of artists at work. I will use hypothetical 'now' moments to illustrate each of the phases in the sequence of creative process. Looking at these moments reveals information about the creative process itself and its relationship to temporal perception and experience. The idea that 'now' moments can be isolated and studied is a central assumption of this narrative and will be explored in detail in Chapter IV.

Broadly, the narrative is organized as follows: The opening gives the reader a sense of the territory covered by the research and identifies what is meant by 'now' in artistic process. The next section contextualizes the study by presenting its precedents in the literature and by identifying visual models that help to 1) locate and identify 'now,' 2) describe subjective temporality, and 3) introduce creative flow state. Subsequent sections explore specific themes or threads that recur in the literature and the interview data. To conclude, the threads of the different sections are drawn together to weave a theoretical fabric of the temporal experience in art making.

The emerging theoretical fabric has its origins in three sources. The first, as mentioned, is the literature on time and creativity. The second is a series of observations and interviews of artists in various disciplines. The third is my own personal experience, thirty years of professional art making in dance, music and

theatre. Although the theory that is presented as a result of this work may have applications to creative process in many endeavors, artistic creativity is the primary subject of study.

Sequencing Artistic Creativity and Introducing 'Now'

Any conversation about the world of art making and art experiencing would be incomplete without acknowledging the writing of John Dewey. Taking his impetus from the writing of William James and Graham Wallas, Dewey's seminal work, *Art as Experience* (1934), established a serious foothold for a contemporary philosophical approach to art making and aesthetics. As the title implies, Dewey delved into creativity and aesthetics from a wholly experiential point of view. He sought to 'de-isolate' art from its rarified ivory tower and to 're-vivify' its connection to everyday life. He explained creative process as both a natural outgrowth and an intensification of how "man uses the materials and energies of nature with intent to expand his own life... " (p. 25). Dewey was specific about the role of time in the "esthetic experience." He stated evocatively that "time ... is the organized and organizing medium of the rhythmic ebb and flow of expectant impulse, forward and retracted movement, resistance and suspense, with fulfillment and consummation" (p. 23).

Dewey's words are full of tantalizing leads into the temporal nature of creativity. A sense of "rhythmic ebb and flow" may be one indicator of temporal awareness. Time as an "organized and organizing medium" may reflect the role of linear time during the creative journey. The achievement of "fulfillment and consummation" may be a temporal marker that indicates the end of a cycle of

creativity. Dewey later states that the cycle of fulfilling and consummating is, indeed, a pattern that is ongoing and processual, not saved up exclusively for the termination of the artwork (p. 56). Investigating these leads draws us more deeply into the experiential world of the artist at work.

One way to investigate the experiential world of an artist is to try to find out what is occurring in his or her mind at any given moment of artmaking. If we could take infinitesimal slivers of the temporal experiences of artists, we would be better able to locate and describe creative phenomena. Although the process is hypothetical, the concept of the 'now' moment is useful as a descriptive and analytical tool.

The what, where and why of 'now'

What is 'now'? Edmund Husserl (1964) was one who wondered and worried prolifically at the concept of 'now.' In his 1905 lectures he addressed the vanishing nature of 'now' thus, "Above all, the now-moment is characterized by the new. The now, just sinking away, is no longer the new, but that which is shoved aside by the new. In this being-shoved-aside lies an alteration" (p.86). Husserl's work helps us to understand the construction of the past, out of the ever-vanishing present. In this particular quote, the word "alteration" links the concept of 'now' to the artistic process. Acts of creation are consumately about change. 'Now' is a point of transition, a nexus of change.

Where is 'now'? Husserl might say that now is everywhere and nowhere, always and never. In order to approach an understanding of artists' experiences of 'now,' we must look around, across, and through these experiences as they are

described by artists. We may think of the work of Eadweard Muybridge (1984), who, in the 1880s, captured frame after frame of an athlete doing a broad jump (p. 54-55). We may recall seeing a slow motion film of a cat falling and turning itself over in the air to land on its feet. Coordination that happens too quickly for the eye to perceive is revealed by stop action photography. Each frame, each 'now,' gives us more information. Obviously, the long jumper and the cat don't stop in mid-air any more than the potter normally makes a conscious roster of the pros and cons of each change of pressure in her fingertips. The observer, however, wants to be able to stop this clock, to bring into the light the gems of an instantaneous, conscious perception.

Why 'now'? If we were able to record all the mental and sensory bits and pieces of information that are at play between an artist and an artwork in a single evanescent moment of creation we would have captured a 'now' moment. In any one, single, tiny, enormous 'now,' held momentarily still for our reflection and contemplation, we would be able to find an entire world of transitory phenomena. We would be able to investigate the artist's layers of awareness and better understand the components of creative/aesthetic choice. As exciting as this prospect is, it must be remembered that in any 'now' that we choose to isolate from artistic experience, we have proposed an abstraction. The meaning of 'now' is only relevant inasmuch as it is part of an artist's ongoing experience of temporal flow.

In the narrative that follows, I will illustrate the phases of artistic process by describing hypothetical 'now' moments of a particular artist, Miriam Mitchell.

Miriam is a visual artist in Denton, Texas who works in a variety of media. In April, 2003, I observed and videotaped Miriam's work as a potter and interviewed her extensively about her creative process and her creative history. At the end of each of the following sections, a short 'narrative of now' will appear, indented and in italics, based on Miriam's creative process as I observed it and as she described it to me. These hypothetical, captured 'now' moments distill and extrapolate her experience and serve as illustrations for *incubation, impulsion, the action/event, encounter, the voice/life of the artwork itself, entrainment, creative/aesthetic engagement,* and *feedback looping*.

Incubation

Creating is about making decisions and solving problems. The process of *incubation* includes all of the decisions, circumstances, thoughts and feelings that the artist has about a given art work before he or she actually begins the work itself. Csikszentmihalyi (1996) posits incubation as the "empty space in between sensing a problem and intuiting its solution" (p. 98) inferring that incubation is not part of conscious awareness. The definition of incubation set forth here includes an array of mental and sensory attention. In wavelike form, ideas may crest into active thought and recede into the subconscious over and over before they actually move the artist toward action.

Everyone works and thinks differently, but it is not unusual for an artist to be *incubating* a number of ideas at once. Each of these 'eggs-of-potential' is likely to mature at a different rate and each may be wrapped around a different kind of idea. For instance, a choreographer may have a little stockpile of future dances

in his mind. One is a solo for a beautiful dancer who inspired him at a concert he saw last week. Another is a long-planned collaboration between himself and a composer who lives in a distant city. A third may be a rapidly developing theatrical piece on an anti-war theme, fueled by images that have been bombarding him in the media. A fourth may be germinating from a movement phrase he taught in a technique class just this morning. Each of these ideas take hold at a different time and each is propelled and/or impeded by different decisions and circumstances toward or away from the choreographer's threshold of the 'now' of action.

Which of those 'eggs-of-potential' is going to hatch? Our theoretical choreographer may not really know until he actually begins to move, to respond kinesthetically to the strongest influence among his several ideas. Circumstances may play a part. The inspiring dancer is not available to work for another six months; the composer in a distant city has decided to change careers and become a magician. Or the choreographer may have a strong emotional pull toward one or another of the ideas. In a case like dance, because it is a symbiotic art form, he may have had to lay some groundwork before he even sets foot in the studio. If he decides on a group piece, for example, he may want to start right off with a group of dancers. This necessitates a selection process, many telephone calls or emails, and the matching of people's schedules with availability of a studio. Each part of the preparation phase, each selection of a cast member, each mental exploration of the dynamic shape of the future dance affects his eventual artistic direction and decisions.

Miriam's 'now:' Incubation
Miriam is in the grocery store parking lot. She has just loaded five bags of groceries into her trunk and has just raised her arm to close the lid. She is thinking about what she will work on in her studio this weekend. She could make another set of goblets. She ought to make another set of test tiles to see if she can fix the color of the blue glaze that didn't turn out quite right. If she wants to be part of the summer arts festival, she should start stockpiling bowls, cups and teapots now. On the other hand, the last big abstract work she made cracked in the kiln and she wants to find out why. Was it the thickness of the clay? The temperature of the kiln? On the other hand, she has been redecorating her work and home space and she has a strong image of a set of whimsical, little clay garden lights for the walkways around the house. All of these possibilities flash through her mind in this one 'now' moment, just before she pushes down the lid to the trunk.

Impulsion

As the incubated idea acquires more specificity and/or urgency, the artist has a sense of incipience, of something impending. John Dewey (1934) calls this sense of incipience an "impulsion." Impulsion is not a passive sensation. It is not like the sense of foreboding one may experience before a tornado or a hurricane. It is a kind of internal pressure that presages action. The urge to action may have a long or a short fuse. It may lie inchoate at the back of the artist's mind, gradually building toward the decision to act, or it may seem to burst upon his or her consciousness in a full-blown éclat of inspiration. In either case, the artist's decision to walk into the studio is an act of impelled volition.

The character of impulsion changes with every artistic experience and each one has temporal sensations. Is there a sense of delayed gratification? A sense of anticipation? Of inevitability? Are there memories of previous artworks dancing in the mind of the artist? Or is there a conscious effort to erase or set aside the memories of previous artworks and start fresh? Walking through the

studio door, sitting down at the computer, sharpening the drawing pencils, taking the staff paper and calligraphy pen out of the drawer, going to the marble quarry – each of these actions seems like a definitive point, an identifiable 'now' when the experience of creation leaves the realm of the abstract and enters the realm of the physical.

> *Miriam's 'now:' Impulsion*
> *It is Saturday at 11 a. m. Miriam is walking into the studio that adjoins her house. As she walks through the door and starts down the two steps into the studio, she knows exactly what she will be making today. The image of the little clay garden lights has been developing with increasing clarity over the past few days. She isn't going to worry about the arts festival this summer. Instead, she will spend the summer working on her palette of glazes. But for now, in April, while she is still balancing teaching and artmaking, she wants a project that is manageable and satisfying. The garden lights will be variations on a theme. They will look like mushrooms with hats or caps in different shapes and sizes. She doesn't yet know what the cap shapes will be; she'll decide as she goes along, but she does know that the finished height will be about twelve inches. The light will be inside of them and spill through a series of perforations that she will make in the tops. In the 'now' moment between the first step and the second step down into the studio, she is reviewing all of these plans. She is also cataloging which tools she'll need, what weight of clay will be right for the first lantern, and how she will shape the correct diameter of the cylinder from the wedged clay.*

<u>The action/event</u>

The *action/event* is a single 'now' moment in the artistic process. It is the first moment that the artist begins to physicalize an artwork: in movement, in sound, on paper, on canvas, in any other medium that is perceivable by another person. Instead of all the other possible future actions that might have been chosen – feeding the cat, going to the dry-cleaner, checking stocks online – the artist proceeds to a work space, walks in, and begins to experiment.

The action/event is the first time any trace of the artwork exists outside of the imagination of the artist. Whether or not someone besides the artist is actually there to see, hear, or touch it is not relevant. The point is that the idea of the artwork has begun to manifest sensorily because the artist has begun to make concrete choices. Whether or not these choices are changed later in the process is also irrelevant because the changes will be based on this very first set of decisions. The artwork may be finished in a single creative session. If so, the first action/event stands alone in the creative chronology of the work. If additional sessions are required to finish the work, the artist will return to the studio or workspace and experience multiple initiations of contact with the physical form of the artwork. Some characteristics of the first action/event will still apply while other characteristics will have changed.

The instantaneous nature of the action/event is dictated by the nature of perception. In the instant after concrete action is initiated, the body's sensory modalities begin to send signals back to the artist's brain. Perception of the work has begun and the next phase of the process, *encounter*, has started. While much of the definition of the action/event comes from Husserl's (1964) "sinking away" (p. 86) of the 'now' moment, the language for the action/event comes from Stephen Hawking (1988). "An event is something that happens at a particular point in space and at a particular time" (p. 23). Hawking's description of the "EVENT/PRESENT" (p. 26) places 'now' as a non-dimensional point in space/time at the intersection of the endless possibility accruing to the past and the endless possibility inherent in the future. Because any 'now' moment in the

artistic process and any 'now' moment in time can be expressed as an event in Hawking's terms, I have chosen to distinguish this specific and minute phase of creative process as an action/event.

> *Miriam's 'now:' The action/event*
> *Miriam lifts the taut wire above the block of clay. The 'now' moment comes as the wire makes its first impression into the clay and begins to slice downward. She uses her eyes; she has a practiced idea of how large a chunk will give her the volume she needs; the position of the wire on the top of the large block is like a map. She uses her kinesthetic awareness; the clay is thick and resistant; she needs force, so the muscles in her arms and shoulders are braced against the frame of the wire. She uses her sense of smell; the clay smells familiar; it smells different according to how much water is in it. At the precise moment of the downward slice, Miriam is using all of these senses, balancing and moving between them as she makes the first concrete choice in this new creative act.*

Encounter

Maxine Greene (1978) refers to the meeting between a person and artistic materials as an "encounter" (p. 165). Greene is largely concerned with aesthetic education and, hence, looks at encounter from the point of view of an audience member, reader, or viewer of the artwork. The term, however, is equally applicable to the artist at work, perhaps doubly so. The artist is not only the creator who is physically encountering and forming the materials but is also a constant perceiver of the work from the moment it begins to emerge. *Encounter* is a significant marker in the chronology of the artwork. It is also a nexus of previous experience, current decisions, and future expectations. These threads assure that the artist is not starting each new work in a vacuum. In this sense, the' now' of encounter is linked to the past and to the future through decision and action.

The physical form of the artwork is at its peak of potential and possibility at the threshold between impulsion and encounter because so much of the decision-making is yet to come. Possibility, experience, and volition are at play, connecting memories of past artmaking experiences to the expectations for the new artwork. To a novice artist, the yawning maw of limitless choice may be an action-freezing precipice. No young poet would be likely to confess to the number of crumpled sheets of paper that litter her floor, each adorned with a single sentence or even a single word. To some mature artists, beginning a new work is a wrenching moment every time, like ongoing stage fright. To others it is a moment of pure joy, of release from all those other possible future actions (well, someone eventually has to feed the cat, but the dry cleaning can definitely wait…) into a realm of familiarity, excitement, and challenge. Artists' varying emotional and cognitive states are likely to result in varying experiences of how time passes for each of them during an initial creative encounter.

> *Miriam's 'now:' Encounter*
> *Miriam has run her wire under the piece of clay that she cut from the block, picked it up and hefted it in her hands. In the moment that she feels the weight of the clay in her hands, Miriam remembers the last time she worked on a piece of this size. It was a fairly large vase, more delicate and taller than this lantern is going to be, but made with about the same amount of clay. Because she has been working clay for 25 years, her body will automatically begin to prepare the clay for the wheel; her hands will start to form it into a ball, alternately squashing it together and smoothing the surface. Part of her mind is racing ahead to various stages in the future of this particular piece of clay. What shape of cap will it have? What color of glaze will she use? How many lanterns had she decided to make? Does she have enough clay on hand? In the moment that she picks up the clay from her cutting table and turns toward the potter's wheel in the center of the room, Miriam has gone backward and forward in time. She has also flashed through signals from inside - her sensory sensitivities - and outside - her sensory responses to the piece of clay. There are already inklings of self-critique or evaluation feathering into the edges of her awareness.*

The voice/life of the artwork itself

The *voice* or the *life of the artwork itself* begins in the initial encounter between the artist and the emergent artwork. The moment that there is the smallest bit of a product – a movement phrase, a few notes on the page, a few brushstrokes – the artwork takes on a life of its own and the artist takes on the role of perceiver as well as creator. As a perceiver, the artist receives information from the artwork that is taking shape in front of her eyes, inside her auditory canals, and/or under her hands. From the moment of *encounter*, this information has a continual impact on the choices she makes, the "What's next?"

Many artists deal with the information they gather as they interact with the artwork by anthropomorphizing the work itself. Just as creating a work of art has long been compared to the gestation of a baby in its mother's womb, the development of an artwork is often viewed by the artist as a reflection of the growth of an individual, complete with personality and birth date. It is not uncommon to hear an artist say of an artwork in process, "It needs more…(clarity, layers, polish, etc…)." "It's coming along." "It's really demanding." " It won't leave me alone." These comments imply a kind of conversation between the artist and the artwork. The artwork pursues the artist, speaks to her at night, is alternately obstinate, accommodating, surprising, alluring, much like an adolescent. In this sense, the artwork acquires its own *voice*. Conversational moments between artist and artwork are all separate

instances of 'now' that may reveal temporal information - memories, expectations, associations, and rhythms, for example.

We may alternately say that the artwork acquires its own *life* because it also has communicative value to others at any point after its initial entry into physical existence. Granted, the artist usually either prohibits or limits access by outsiders to the art work before it is 'finished,' but its existence has been established whether it is finished or not. Think of the sketches of da Vinci or the musical notebooks of Webern. They were never meant for public consumption, yet they live for us precisely because they have perceivable form.

> *Miriam's 'now:' The voice/life of the artwork itself*
> *Miriam has set the ball of clay down in the visual center of the wheel. She has started up the motion of the wheel by pressing on the foot pedal and has started a process called "choking up" the clay to get the air bubbles out. As she presses in with her hands, she has a tactile, kinesthetic conversation with the revolving object. "Are you centered?" "You're not centered." "Well, maybe you are centered." "You feel a little off, but I can probably fix it. " "We'll see." In this moment, Miriam recognizes that even though she has controlled every part of the process up to this point and will continue to determine the ultimate fate of this particular piece of clay, a new dimension has been added. The artwork itself may now surprise her, may change her mind, may take on characteristics of its own.*

Entrainment

Entrainment is the sensation of being pulled into the artmaking the way that Alice was pulled into the mirror in *Through the Looking Glass.* When the artist is entrained in artmaking he or she begins to bracket out day-to-day concerns and to experience an intensification of concentration. An investigation of various sources can help to form a composite definition of entrainment. Barbara Lex's (1979) definition of entrainment is "the process by which biological rhythms are synchronized by environmental stimuli" (120). Lex's definition

links entrainment to the physiological reality of the artist at work. The encounter of the artist with the materials provides the stimulus that pulls him or her into a synchronized state. Two more aspects of entrainment as it is used here appear in Webster's second definition of entrainment: "to draw in and transport through flow." The "drawing in" shows the property that entrainment has to transport the artist from encounter into creative/aesthetic engagement. The mention of "flow" links entrainment to Mihaly Csikszentmihalyi's (1990) exploration of flow state as a heightened creative consciousness.

I would also link entrainment to Alfred Schutz's (1967) reference to "wide awakeness" as "the subjective experience of a shock… a radical modification of the tension of our consciousness, founded in a different *attention à la vie*" (in Greene, 1978, p. 173). Greene goes on to elucidate the experience of entrainment. "These shocks, these shifts of attention make it possible to see from different standpoints; they stimulate the 'wide-awakeness' so essential to critical awareness, most particularly when they involve a move to the imaginary – away from the mundane" (p. 173). The artist is already participating in the work of the imagination; entrainment furthers that endeavor by moving him or her "away from the mundane." In sum, the artist experiences entrainment when his or her encounter with the materials of artmaking has the effect of synchronizing biological rhythms, transporting consciousness away from the mundane, and intensifying and focusing attention on artmaking.

For each artist, entrainment may happen at a different point during each artmaking encounter. Some artists have a working rhythm that triggers

entrainment at a fairly predictable point each time. For Miriam it happens as a result of the contact of her hands with the medium. She says that this has always happened for her. As early as she can remember, she has been drawn fully into the artmaking experience by tactile sensation (personal communication, 2003). Sharon Underwood, an experienced textile designer, is also pulled almost instantaneously into her work when she arrives in her studio and picks up her pencil. For Sharon, the immediacy of entrainment is aided by working in the middle of the night, often through the night (personal communication, 1995). For other artists, the initial encounter with the materials does not always result in entrainment. An entire work session may be spent in a succession of conscious decision-making steps. The work may seem tedious or even painful. It may result in an early termination of the work session. Entrainment is a gateway that leads to full *creative/aesthetic engagement*.

> *Miriam's 'now:' Entrainment*
> *Miriam's potter's wheel is spinning; she is sitting behind it, hands firmly pushing the lump of clay on the wheel together and upwards, creating a cylinder. As she shifts her hold on the clay, her two thumbs start to make a depression in the top of the cylinder by digging them down into the malleable surface. In this instant, she has an awareness of everything around and inside herself, the ongoing manifestation of the skills she has acquired during the past twenty years, the memories she has of past creations and her plans for the future of this particular clay piece right here on her wheel. Miriam has made a continual string of decisions that have led up to this moment of putting her thumbs into the top of the cylinder. How far will she press down? How wide will she make the mouth of this piece? How thin will the clay walls be? Does she even know any of these answers yet? Because Miriam is in a state of entrainment, she may not be addressing any of these questions in a verbal-logical, right hemisphere way. She may be experiencing a state of pure sensory response to the clay. This kind of body-logic produces a spatio-temporal location in which the decisions seem to be making themselves, the vessel's form emerging under her hands.*

Creative/aesthetic engagement

Creative/aesthetic engagement is a concept that is welded together from the work of John Dewey (1934), Rollo May (1975) and Maxine Greene (1978). Dewey (1934) differentiates *experience* - the normal, run-of-the-mill contact between a person and his or her objects and activities, like a person mowing the lawn, from *aesthetic experience* - the contact between an artist and his or her materials or a perceiver and an artwork. (Of course, elevating the lawnmower, too, into the sphere of high art objects was the province of Dada…). Dewey states, "that connection of art and aesthetic perception with experience… signifies heightened vitality… active and alert commerce with the world…complete interpenetration of self and the world of objects and events" (p. 19). Rollo May (1975) speaks of *creative encounter* as a "degree of intensity of encounter, or what I would call passion" (p. 87). Maxine Greene hearkens back to Dewey, "[I]n the aesthetic experience, the mundane world or the empirical world must be bracketed out or in some sense distanced, so that the reader, listener, or beholder can enter the aesthetic space in which the work of art exists" (p. 164). If this is true for the perceiver of the artwork, it is more true for the creator of the artwork during the process of creation. Greene then brings the term "engagement" into the mix: "To engage authentically with a painting, a ballet, a musical work, we must – by dint of imaginative activity – be released into our own streams of consciousness, our own inner time. We must cultivate an awareness of our awareness, even as we work to realize an object as a work of art" (p. 199). Because the artist is having an experience not only through imaginative activity but also through the

physical construction of the artwork, his or her engagement is reinforced on many sensory and intellectual levels.

By using the term *creative/aesthetic engagement*, I wish to pull together salient features of each philosopher's related ideas and to use a term that is at once comprehensive of and more specific than "esthetic experience," "creative encounter," and "engagement." The term *engagement* implies a specialized kind of experience, one that includes both "release into our own streams of consciousness" and "awareness of our awareness," resulting in what Alfred Schutz calls a state of "wide-awakeness." The word has an active, hands-on, in-the-middle-of things connotation that is less pronounced in the terms "experience" and "encounter." Even though Dewey is at some pains to differentiate various kinds of experience, experience can be passive. Encounter suggests a kind of immediate recognition between two entities and lack of resolution that one might associate with Humphrey Bogart and Ingrid Bergman in *Casablanca.* For this reason, it is a perfect way to describe the initial meeting between the artist and the manifestation or his or her idea, but less-than-perfect to describe the ongoing activity of "fulfillment and consummation" that I mean to describe when the artist is fully involved with the work. For that, "engagement" is more suitable.

Greene (1978) brings up the idea of "our own inner time" (p. 199) in her discussion of engagement. Without entrainment and creative/aesthetic engagement, artmaking tends to be characterized by many *temporal markers.* A temporal marker, in the context of this discussion, is anything that calls the

attention of the artist away from the work at hand and toward the passage of time. Glancing up at the clock is the most overt manifestation of a temporal marker. The glance may be preceded by any number of thoughts or feelings. The artist may remember an appointment that is scheduled later in the day; she may feel hungry; she may be wondering if the mail has come yet. These are all temporal markers because they concern the sequencing of events, causal relationships that are arranged, ordered, and/or expressed through calendars, clocks and biological rhythms. All of these thoughts and feelings reflect the artist's own inner sense of time and take her outside of the world of encounter with her materials. They break up the flow of her work. Conversely, during the experiences of entrainment and creative/aesthetic engagement, temporal markers tend to diminish.

> *Miriam's 'now:' Creative/aesthetic engagement*
> *Miriam has been working for half an hour. One cylinder is finished and set on a table in front of the potter's wheel. Without a pause, Miriam has gone back to the block of clay, cut another piece, set it up on a bat [a round support for the piece that sits on top of the wheel], and is now in the middle of cylinder formation. Her hands are pressed in against the rising tower of clay, her body is pitched forward, elbows out. She is looking down at the piece in front of her. Miriam has 'caught her stride.' She is deeply focused on the work at hand. On some level, her thoughts may stray to other topics, but these are drifting, fleeting thoughts like clouds above the terra firma of her attention to artmaking. She has relegated the fact that I am sitting in a corner of the studio running a video camera and writing notes on a legal pad to an unimportant corner of her awareness. The only sound in the studio is the humming of the motor that turns the wheel.*

Feedback looping

The work progresses and new information continues to flow toward the artist from the artwork. The information is synthesized and returned toward the

artwork in the form of creative actions - additions, refinements, revisions - in short, change. Ernst Cassirer (1979) iterates this functional interdependence thus: "To [the great artist], the words, the colors, the spatial forms and designs, the musical sounds are not only technical means of reproduction; they are the very conditions, they are the essential moments of the productive artistic process itself" (p. 161). It is interesting that Cassirer refers to the communication between the artist and the medium as "means of reproduction," "conditions," and "moments" in the same sentence. In doing so, he links physical manifestation of art making with both the action of creativity and its temporal immediacy. The description results in a picture of the ongoing current of flow between the artist and the artwork as a *feedback loop.* Each pass of the chain of feedback loops results in alteration, so that a new 'now' constantly presents a changing artistic product to the senses of the artist. Howard Gardner (1983) attaches the idea of feedback to neuroscience.

> Feedback mechanisms are highly articulated, so that motor movements are subjected to continuous refinement and regulation on the basis of a comparison of the intended goal state and the actual position of the limbs or body parts at a particular moment in time. (p. 211)

The constant experience of these feedback loops is at the heart of the artistic process.

Mihaly Csikszentmihalyi (1990) writing about the "optimal experience" of the creative person describes the mechanics of feedback looping thus, "...flow always involves the use of muscle and nerve on the one hand, and will, thought, and feelings on the other..." (p. 118). Apprehension of the object or work being

created stimulates thought and feelings that affect the artist's decisions. These decisions are then translated to the artwork through his or her will. Will manifests outwardly in actions of "muscle and nerve" that effect change in the evolving artwork. The artwork's 'audience of one,' the artist, views the performance or the object over and over so the feedback loops act like a circular conveyor belt continually bearing information in and action out. Unlike a conveyor belt, this looping may happen at different rates of speed. It may be meditative or it may happen in the blink of a neural response.

At some point, feedback looping between the artist and the artwork produces less and less will to effect change. Individual artists experience the concluding phases of their artworks in many different ways, but at some point the time for 'wrapping it up' becomes evident to the artist. In Husserl's construction of the now moment – memory and expectation - the memories of previous feedback loops overshadow future expectations for the development of the work. The "sense of rightness" (Norwood, 2004) in the whole artwork and the sense of being finished are not always congruent, but the artist hopes for a satisfying conclusion in which they are, in fact, the same. To know when the Haiku is perfect, when the chords of the coda should finally resolve into silence, when the lights should fade to black on the proscenium stage is an artistic skill that is born of the decisions, experiences, and expectations of a lifetime.

> *Miriam's 'now:' Feedback looping*
> *Miriam leans back slightly on her potter's stool, allowing the pressure of her hands on the clay to lighten as she breathes and assesses the result of her most recent 60 seconds of contact with the piece. In the very next moment, she glances over at the lantern she finished an hour ago. What is contained in that glance? It*

is a direct look, as if she is internally photographing the shape on the table. What will be brought back to the work at hand, the emerging garden lantern that now sits on her wheel? Mentally she is assessing the similarities and differences that she may want between the two pieces. She is evaluating the job she did with the first piece. She is letting it speak to her about the possibilities before her. She is thinking about the practicalities of clay and water and air and time. Isolating this 'now' moment among Miriam's innumerable feedback loops gives us multiple vantage points from which to investigate the phenomenon of making choices.

Deep time

Occasionally artists may have experiences with creativity that seem to defy the parameters that usually surround and support their work. These are rare and unpredictable phenomena that artists describe as quintessential examples of inspiration and creativity. The experience may be likened to an intensified form of entrainment where day-to-day life fades away in importance while the emerging artwork takes on an unmatched brilliance and clarity. All of the artist's temporal awareness is in service to the making of the art. The artist enters a realm that I call *deep time* where temporal experience is malleable and where the artist seems to be able to journey at will into the past and into the clearly designed future of the artwork. The outcomes of these transcendent creative states are described by artists as extremely fulfilling and meaningful.

Instead of closing with a 'now' moment of Miriam Mitchell's, I have chosen the words of Masami Sato (2002), a bead artist. Sato describes a deep time experience succinctly, mentioning its similarity to dream state. The result of Sato's experience, a stunning, award-winning red bead necklace, was pictured next to the quote, reiterating the almost magical quality inherent in deep time creativity.

> For thousands of years, humans have been fascinated with beadwork. I, too, have been captivated by the simple charm of the bead. As I stare, my hands naturally begin to work, and time becomes irrelevant. I daydreamed of a red choker to go with a simple black dress. When I woke from my thoughts, the piece was done. (p. 29)

Following Time's Arrows

The discussion so far has laid out a general sequencing of the artmaking process and has highlighted many of the temporal issues that pervade the study of artistic creativity. Through the processes of incubation, impulsion, the action/event, encounter, the voice/life of the artwork itself, entrainment, creative/aesthetic engagement, and feedback loops the artwork attains a voice, a life independent of its creator. Each stage of creative process provokes and/or encompasses temporal awarenesses that vary from artist to artist, from experience to experience, and from art form to art form. Moments can be identified throughout artistic process that may yield rich stores of information about the function and character of time sense during creativity. These moments are identified as 'now' points, which we have imagined as captured by a stop-action camera. Getting inside the temporal experience of the artist at work involves magnifying the 'now,' opening up the pinpoint aperture of a moment in order to see and describe the complex levels of interconnected activity that result in creative action.

Several questions of interest arise from the framing of the study.

1. What definitions of time and time perception are most applicable to the context of art making?
2. How do artists arrive at the 'now' moments of artmaking?

3. How do artists describe their temporal awareness during the conception and generation of art works?
4. How does the character of an artist's creative process change throughout the period of time that the artwork is taking shape?
5. What are the implications of such descriptions and the emergent theory of temporal experience in art making for the larger understanding of both time and creativity?

The investigation of each of these questions in turn forms the essential structure of the discussion that follows.

CHAPTER II

FINDING TIME

ROSALIND: I pray you, what is't o'clock?
ORLANDO: You should ask me what time o'day; there's no clock in the forest.
ROSALIND: Then there's no true lover in the forest, else sighing every minute and groaning every hour would detect the lazy foot of time as well as a clock.
ORLANDO: And why not the swift foot of time? Had that not been as proper?
ROSALIND: By no means, sir. Time travels in divers paces with divers persons. I will tell you who time ambles withal, who time trots withal, who time gallops withal, and who he stands still withal.
(Shakespeare, *As You Like It*, Act III scene 2)

Whether ambling, trotting, galloping or standing still, time is intimately connected with motion and with the human body. In the West, we have some distinct conceptions of the direction in which time moves. The timelines that permeate our history books move from the past (or early time) on the left toward the future (or later time) on the right. Timeline directionality may be an outgrowth of the way Amero-European script moves from left to right across the page. The same orientation is preserved in the writing of music, whose five-line staff moves musical pitches and rhythms across the page in a similar sense of left-to-right flow.

We also tend to think of the future as being 'in front' of our bodies. "We have our whole lives in front of us," we are told at every graduation. "Put the past behind us," is the cry for reform and/or reconciliation. Dewey's (1934)

"forward and retracted movement" (p. 23) is distinctly spatial and physical. Both the left-to-right and the backwards-to-forwards directional schemata imply either physical or metaphoric movement toward the future and away from the past starting from a body-oriented central point. The point is both spatial and temporal. It is 'here' and 'now.' Both directional models of time passage are common Western conventions. But does this mean that individual *perceptions* of time correspond neatly from person to person, even in the same culture? Anyone who has had a roommate, spouse or family member can testify to the differences between what people mean by "I'll just be a minute." The individual experience of time is one of the most elusive aspects of human perception. Shakespeare's use of poetic and metaphoric language in *As You Like It* paints a clear picture of the subjective nature of time. The passage also lends itself to a conception of time as connected to human movement through the phrases "lazy foot of time," "swift foot of time," "time ambles," "time trots," "time gallops," and "[time] stands still."

Theories of Time

Shakespeare was not alone in his fascination with the subject of time. J. T. Fraser (1981) concluded his compilation of essays on time with a general invitation to the public to develop what he called *chronosophy*, the study of time. He listed five purposes or intentions that would be addressed by such a field:

1. to encourage the search for new knowledge related to time;
2. to set up and apply criteria regarding which fields of knowledge contribute to an understanding of time, and what they may contribute;
3. to assist in epistemological studies, especially in those related to the structure of knowledge;

4. to provoke communication between the humanities and the sciences using time as the common theme; and
5. to help us learn more about the nature of time by providing channels for the direct confrontation of a number of views. (p. 591)

Does *chronosophy* exist? If it does exist, what literature and practice belong to such a field? The study of time has been approached through many scholarly disciplines. Philosophers, physicists, anthropologists, biologists, musicians, psychologists, and geologists all have their own vocabularies or "looms" for weaving particular constructs of time. Inquiry on the subject of time has been as varied as the researchers themselves.

Literature that exists on the concept of temporality may be related to physics and time measurement (Shallis, 1983; Morris, 1985; Hawking, 1988); it may consist of anthologies of articles written from various disciplines (Doob, 1971; Fraser, 1981). Some anthropologists and sociologists (Eliade, 1949/54/65; Hall, 1983; Chacalos, 1989; Nowotony 1990) as well as historians (O'Malley, 1990) have approached time through cultural viewpoints. Psychologists (Piaget, 1946/69; Fraisse, 1963; Cottle, 1976; Gregson, 1983; Csikszentmihalyi 1990) have approached time through experiential descriptions and/or the measurement of particular temporal responses. Philosophers (Husserl, 1905/64; Heidegger, 1926/62 & 1925/88; Merleau-Ponty, 1962), strive to describe the essence of time from an ontological perspective. Artists (Calabrese, 1987; Novack, 1990) or aestheticians (Berger, 1972; Siegel, 1991) have analyzed temporal elements in particular art works.

All of these writers contribute to the development of chronosophy and many of their theories have a bearing on the relationship between time and creativity. Sometimes these relationships are not immediately apparent. In narrowing the focus of this study and in following the temporal trails that run through the interview data, I have sifted through this literature to find the concepts that describe the phenomena I am investigating. The search through literature on time has been conducted concurrently with a similar search through the literature on creative process.

Theories of Creative Process

Books and theories on creativity in general are becoming widespread. Most of them come from the field of psychology. Some studies attempt to quantify creativity by using instruments like Creativity and Future Time Perspective (FTP), Future Problem Solving Tasks (FPST), the Torrance Test of Thinking Creatively with Pictures, the California Test of Personality, and the Barron- Welsh Art Scale. As with the literature about time, psychology-based anthologies have been written to present various points of view on creativity (Sternberg, 1988, Runco and Albert, 1990). *Einstein's Space and Van Gogh's Sky: Physical Reality and Beyond* (LeShan and Margenau, 1982) was co-written by a psychologist and a physicist and is concerned with how various organizations of reality including temporal reality overlap and/or diverge. It is interesting that recent dissertations on creativity (Gallan, 2001;Walker, 1999;Lish, 1997;Cahn, 1996) come from across the map of disciplines, as well. Voices from the worlds of poetry, music, visual art, dance, neuroscience, human ecology, history,

biography, religion, philosophy, and education all join with the chorus from psychology in attempting to describe and/or theorize about creativity.

The study of creative process as outlined in Chapter One might be considered a subset of creativity studies. As its title implies, creative process theory is concerned with the *doing, making,* and *engagement* aspects of creativity as distinct from creative people's life histories or the analysis of creative works. Creative process theory specifically related to artistic creativity is a relative newcomer to the scholarly arena. The diversity of its contributors is similar to the diversity of contributors to the literature on time. The work of John Dewey (1934) has been taken up by other philosophers, for example, Rollo May (1976), Susanne Langer (1953), and Maxine Greene (1978) and especially by Richard Schusterman (1989, 2000). Philosophic writers tend toward the "What *is* creative process?" question. Psychologists, like Howard Gardner (1993) and Mihaly Csikszentmihalyi (1990) are involved with the question, "How does it happen?" Educators Doris Wallace and Howard Gruber (1989) want to know how specific creative persons have developed. Artists like Penelope Hanstein (1986) and Larry Lavender (1996) theorize aspects of the nature of artmaking and their implications for pedagogy.

As with the literature on time, the challenge has been to find the concepts that are relevant and useful. Each category of writing on creative process yields bits and pieces of research and theory that are applicable to this study. I have relied heavily on Dewey and Csikszentmihalyi whose work closely parallels my own, but I have also been 'flung afield' by following the leads I found in my

research. Relevant concepts appear not only in temporal and creative process research, but also in research on memory, neurobiology, and dream state. Pulling these disparate threads together is part of a larger endeavor that Edward O. Wilson (1999) calls "consilience" (p. 8), an integration of approaches from varying fields to inform a topic. The outcome of this particular process of integration is related in the conclusion, Chapter VII.

Two Strands

This study emerges from the realm of creative process and concerns the nature of the experience of time. Therefore, it has diverse points of entry. A selection of relevant theories from philosophy, psychology and physics supports the research. For example, it builds upon both the ideas of *flow state* developed in psychology by Mihaly Csikszentmihalyi and the conceptual models of time developed in physics by Stephen Hawking. Through these and other theories, an ontology for examining the temporal experience in artmaking emerges in the narrative. Uniting ideas from varied sources into a coherent explanatory theory as revealed by the interview data is one of the main goals of the research. An integrated understanding of time, time sense, and temporal engagement within the creative process will form the conceptual framework that guides the analysis.

Since acts of creation are consummately about change, the creator's temporal awareness is a compelling vantage point from which to view creative process. Although creative process is not limited to artists, art making is an appropriate human activity to use as a model for creative process studies. Artistic process theory can be seen as a subset of creative process theory, itself a

subset of creativity studies. In this narrative, artistic process is the focus of the discussion. I have developed a specialized vocabulary to discuss creative/temporal experience, activity and relationships.

Temporal Foundations

What is meant here by the use of the word *time*? A working definition of time can be synthesized from the ideas of Maurice Merleau-Ponty (1962) and Jean Piaget (1946/1969). First, Merleau-Ponty's poetic description of time:

> In every focusing movement my body unites past, present, and future, it secretes time, or rather, it becomes that location in nature where, for the first time, events, instead of pushing each other into the realm of being, project round the present a double horizon of past and future and acquire a historical orientation. My body takes possession of time; it brings into existence a past and a future for a present; it is not a thing, but creates time instead of submitting to it (pp. 239-240).

Merleau-Ponty leads the reader to an interpretive sense of time. He states that it is located and experienced through the body. At any given moment, the individual is in the process of synthesizing/creating/"secreting" a personal time that is informed by an entourage of past events and future possibilities. This perspective helps to invigorate a notion of time that applies to artistic creativity. First, time is described here as experienced individually rather than as divinely or universally ordained. Second, Merleau-Ponty links the physical and the intellectual apprehension of temporality together rather than keying into old notions of duality. Third, there is an intimation of active participation in the making of time as well as in the sensing of time. These three points are congruent with the activity of art making in which the artist pulls together

threads of past experience and future vision. Chapter III is devoted to an investigation of this activity. The way that the artist then "takes possession" of these elements and "brings into existence" a work of art through one or more bodily modalities is examined in Chapter V.

Piaget takes a more universal and structural view of time. "[T]time remains a simple dimension inseparable from space and part and parcel of that total coordination which enables us to correlate the kinetic transformations of the universe" (p. 2). His definition answers the "So what?" question. What does this experience of time do for us? Why do we have it? Piaget links individual experience to the world at large. He states that time is the way that we find ourselves in relationship to everything that surrounds us. Importantly, the "everything that surrounds us" is also changing moment to moment. In Piaget's view, time is a tool. The other aspect of Piaget's definition that bears repeating is his linking of space and time. This view from the world of psychology dovetails with the views of modern physics and links them. In terms of the focus of this study, Piaget provides a bridge between the individual world of the artist at work and the milieu in which he or she is operating. Through Piaget's view, we can step back and see temporal relationships between the artist and the world just as Merleau-Ponty's view has invited us to step inside the individual artist and see temporal relationships as they form within the core of the artist.

The key concepts of both views may be united in the following definition: *Time* is a bodily dimension, inseparable from space, which orients consciousness in the kinetic transformation of the universe. Or, as Mihaly Csikszentmihalyi

said, "*Time* is the way we experience change" (personal communication, October 2001). *Time sense*, then, is how particular characteristics of transformation or change reveal themselves to our awareness. It is a continually emergent and labile property because it is dependent on bodily, spatial, psychological and kinetic factors.

Locating Now

The interrelatedness of space and time in these definitions meshes well with similar definitions in post-relativity physics. The locational or orientational nature of time is expressed by Stephen Hawking (1988). "In relativity, there is no real distinction between the space and time coordinates…It is often helpful to think of the four coordinates of an event as specifying its position in a four-dimensional space called space-time" (p. 24). In this quote there are implications for time-as-a-tool that parallel Piaget's notions. According to Piaget, time "enables us to correlate the kinetic transformation of the universe" while in Hawking's version, time is one of "the four coordinates of an event [that help] specify its position." While clearly not designed to describe the notion of artistic creativity, post-relativity physics provides us with a useful set of ideas to clarify 'now' and how it is located. This investigation pinpoints particular moments, locations in the process of artistic creativity. These 'now' moments can reveal the internal dimensionality of the work, the busy-ness of a given point in creativity's space/time.

Historically, specifying a particular point in space and time has been a straightforward operation. If we describe an event as occurring at 3 p. m. on

September 15, 1736 on the steps of the great cathedral in Amiens, France, we, as members of a culture may be able to summon up a stable, shared image of the event's placement. However, modern physics has uncovered many variables in the way the universe behaves. Through these observations, a description of space/time emerges that moves away from a static version of the external world and more closely approximates the space/time of internal human consciousness. Hawking (1988) elaborates:

> Before 1915, space and time were thought of as a fixed arena in which events took place, but which was not affected by what happened in it…Space and time are now dynamic quantities… Space and time not only affect but are also affected by everything that happens in the universe. (p. 33)

Hawking's explanations substantiate our contemporary understanding of time as dynamic and dimensional and describe the evolution in our ways of thinking about time and temporality.

It is possible to frame a dialogue between Hawking's and Merleau-Ponty's definitions that further enlivens our understanding of time as a bodily dimension.

M-P: "My body…secretes time,

S.H.: its dynamic quantities

M-P: projecting round the present a double horizon of past and future. My body takes possession of time … creates time [which]

S. H.: not only affect[s] but is affected by everything that happens in the universe."

This cut-and-paste dialogue gives us a general sense of a lived 'now' moment. It accounts for the personally generated and universally connected aspects of the moment. It centers the moment and surrounds it by the past and future. The specific "dynamic quantities," and the specific views of "a double horizon" during the now moments of artistic creativity are the quarry of this investigation.

The word "nexus" comes up in the literature that describes moments in time. Two definitions of nexus combine to give the sense of the word as I will use it here. First, a nexus is a connection or link associating two or more things. In this case, the link is between the past and the future which meet in the 'now' moment. Second, a nexus is the center or focus of something. In this case, artmaking is the focus of the creative 'now' moment. Edmund Husserl (1964) first associates the word "nexus" with the location of now. In Husserl's model, every nexus of now is the crossroads of a "manifold infinity" of memories with a similar infinitity of intentions (p. 139). Hawking's nexus of now is the intersection of two expanding "light cones," the past and future, each of which contains an infinite set of possibilities.

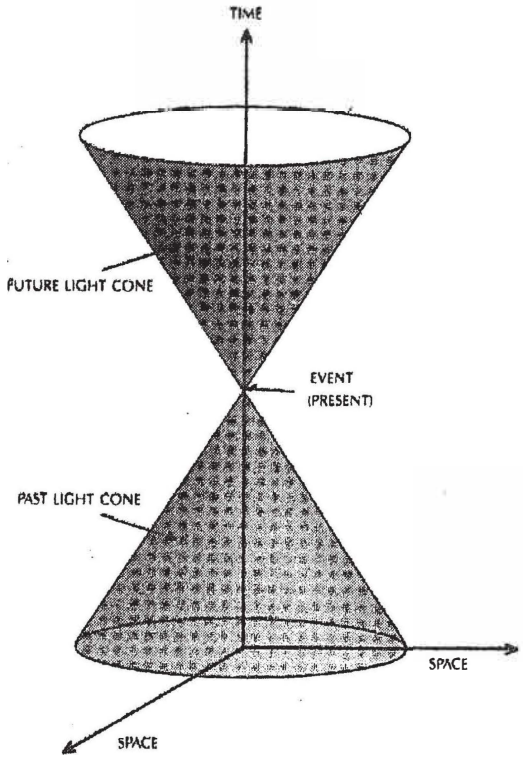


Figure 1. Hawking's space/time model

Figure 1 presents one of Hawking's space/time models (p. 26) and allows us to see his concern with light and its speed. This is understandable because the visual feedback from stars gives physicists empirical support for the description of time. Creative time is concerned with the speed of thought and action. Both modes connect past and future through the *nexus of now* which Hawking refers to as "EVENT (PRESENT)." The three-dimensional shape of the cones shows that although western culture has chosen to display time as a linear function (vertical in Hawking's model), the questions "What happened?" and "What might happen?" are far more layered and complex than a simple line can represent.

There are a number of ways to enter into discussions about the nature of the past, the 'now,' and the future. Long before the advent of modern physics, humans developed ways to describe and even interact with the potential inherent in both past and future. In some cultures, this multiplicity is so pervasive that the idea of a linear progression of time does not exist. Hawking is dislodging Aristotelian notions of time in order to describe the multiple potential of the past and future. "Newton's laws of motion put an end to the idea of absolute position in space. The theory of relativity gets rid of absolute time" (Hawking, p. 33). Hawking has prepared the reader for this statement by describing how each 'now' ("*P*" in *A Brief History of Time*) has not just a single strand of antecedent moments, but a volume of influences that lead up to its specific existence. "The absolute past of *P*... is the set of all events that can possibly affect what happens at *P*" (p. 28). The relevance of this idea to the study of artistic creativity is that it acknowledges the unlimited sphere of past experiences, both personal and collective, that the artist brings to each moment of creative action. It also acknowledges the unlimited potential that exists on the other side of 'now, ' the future.

Edmund Husserl, whose philosophical expositions both of time and of phenomenological methodology are seminal to the field, describes the layering of past experiences with expectations for the future that comprise the 'now' moment. *The Phenomenology of Internal Time Consciousness* (1964) is a collection of lectures given by Husserl from 1905 – 1910. In Section 2, Husserl provides a prototypical time consciousness/analysis model (p. 49).

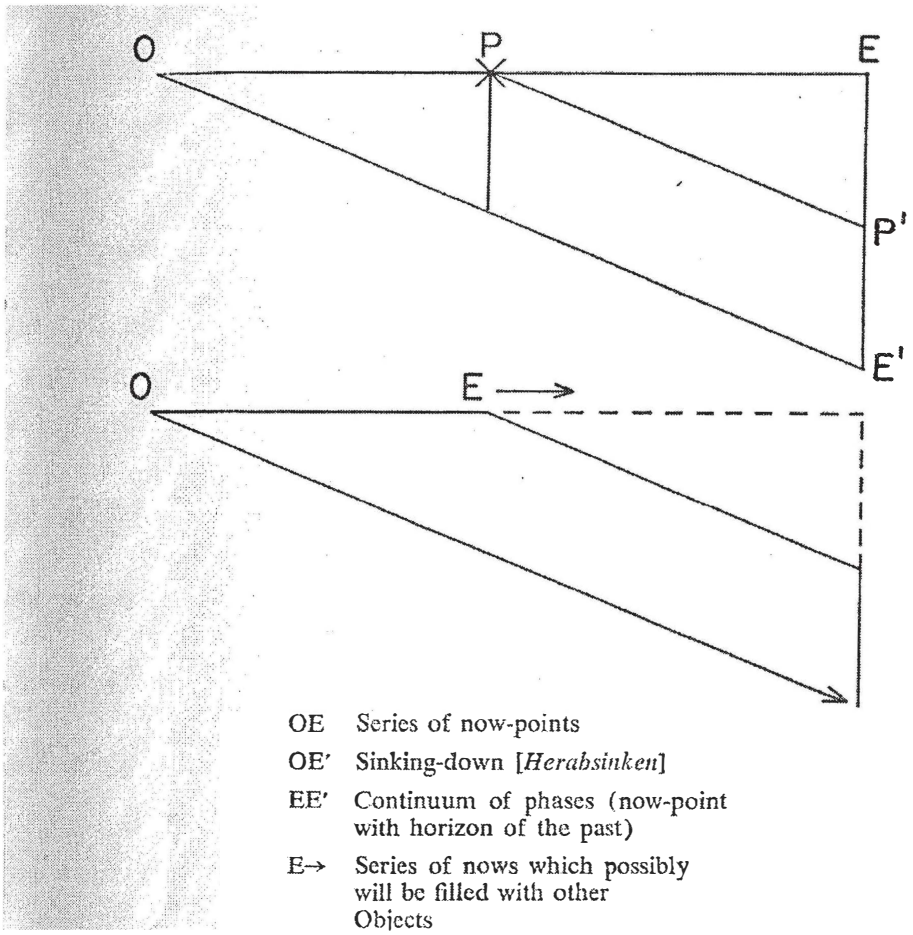


Figure 2. Husserl's "modes of temporal orientation."

Husserl refers to the phenomenon shown in Figure 2 as "modes of temporal orientation." The progression of time on the model follows the traditional Amero-European left-to-right = past-to-future orientation (succession). In the top triangle the points "O," "P," and "E" show a progression of 'now' moments that continually become moments in the past. The vertical line that runs from "E" down to "E' " shows the accumulation of memories that accompany each now moment. Later in the text he refers to this as a "sinking down" (p. 50). The bottom triangle extrapolates the operations of the past and present into the

possible future. The line becomes broken to indicate the uncertainty of the journey. From any present 'now' point, the future is a "series of nows which possibly will be filled with other objects." Thinking about this possible series of future nows is referred to as "expectation." He describes the whole layered temporal process as a "continuity of constant transformations" (p. 48).

The temporal model is a series of infinitely expanding triangles that illustrate Husserl's process-oriented modalities, for example *now-ness* (p. 86) and *the difference between memory and expectation* (p. 79 f.). An understanding of these modalities links the ontology of time with the operational concepts of creative process analysis. Each artist operates within his or her own personal sense of *now-ness* during art making and each blends memories and expectations into the construction of the art object or event in particular ways. In this narrative, I am referring to *temporal engagement in art making* as the artist's sense of now-ness and his or her transformation of memory and expectation. When and how does this occur?

The notion of *temporal engagement* can be related to the literature on creative process by expanding on Rollo May's (1976) definition of engagement, or "the degree of absorption, the degree of intensity, " which characterizes participation in an activity (p. 40). In order to arrive at full artistic engagement, the artist experiences a shift of attention during the act of art making. As discussed in Chapter I, this shift occurs during entrainment. The whole process involves, as Greene says, "being in touch with our inner time, which is time inwardly lived rather than time by the clock" (p. 200). *Temporal engagement in art-*

making occurs when our time sense becomes largely defined by an absorbing creative encounter.

Perception, Consciousness & Flow State

As entrainment in the creative encounter progresses, the artist may experience variations in temporal perception. The concept of *perceived duration/succession* is tied to Piaget's (1969) concept of "intuitive time," which is based on direct perception (p. 2). Perceived duration/succession is the way that we assign felt time values to events and order them. "How long did that take?" "What happened first? Next?" Examples of perceived duration/succession can be seen in any courtroom drama. "About what time did you hear the gunshot? Did you look at a clock, or did you know in some other way?" "Did you find the body before or after you noticed the bloodstains?" Perceptions and memories of duration and succession (or sequence) are weighed, compared and analyzed.

Perception is central to the action of artmaking. This is because artmaking is a sensory endeavor through both the perception of and interaction with the materials of the artistic medium. In the past, the sensory origins of perception have made the study of perception-based activity somewhat suspect in the quest to define intelligence and "higher-level thinking." Maxine Greene (1978) works to debunk this attitude when she states,

> Perceptual reality ought always to be considered one of the multiple realities available to us: a recognizable set of experiences, once they are reflected back upon, characterized by a distinctive mode of attention, one too many people have repressed or refused. (p. 216)

The "distinctive mode of attention" to which Greene refers includes the idea of entrainment and creative/aesthetic engagement as they have been discussed here. Chapter V addresses sensory perception and sensory interaction, describing the way they are woven into artistic process. Elliot Eisner (1982) writes about the role of the senses in the same vein that Greene writes about perception.

> Because the senses have often been separated from the mind, their contributions to thinking have often been unappreciated. Activities that appear to rely upon the use of the senses or upon affect are often regarded as nonintellectual, that is, as activities that make little demand upon thinking or human intelligence. This tradition is based upon a limited and...counterproductive view of mind. (p. 34)

Eisner takes the rest of the book to make his case for sensory activity as an important part of the development of human intelligence. Throughout this narrative, sense-based "perceptual reality" is recognized as part of the unified work of the mind. References to "the mind" are inclusive and I will take as an assumption that academic thought has moved beyond traditional dualism.

Another way of approaching creative action as intellectual endeavor has been explored by psychologist Mihaly Csikszentmihalyi in *Flow: The Psychology of Optimal Experience* (1990). Csikszentmihalyi's work is especially cogent because it targets the same kind of experience that I am investigating, high-level creative process. Csikszentmihalyi calls this experience "flow." "*Flow* is the way people describe their state of mind when consciousness is harmoniously ordered, and they want to pursue whatever they are doing for its own sake" (p. 6). Csikszentmihalyi states that the optimal experience of flow results when the

skills of the person are just able to match the challenge of the task at hand and that this task is always connected to purposeful activity. For Csikszentmihalyi, the continual achievement of flow state results in an augmentation of consciousness because skills are continuously expanded to meet expanding challenges – 'pushing the [personal] envelope' – to use a popular expression.

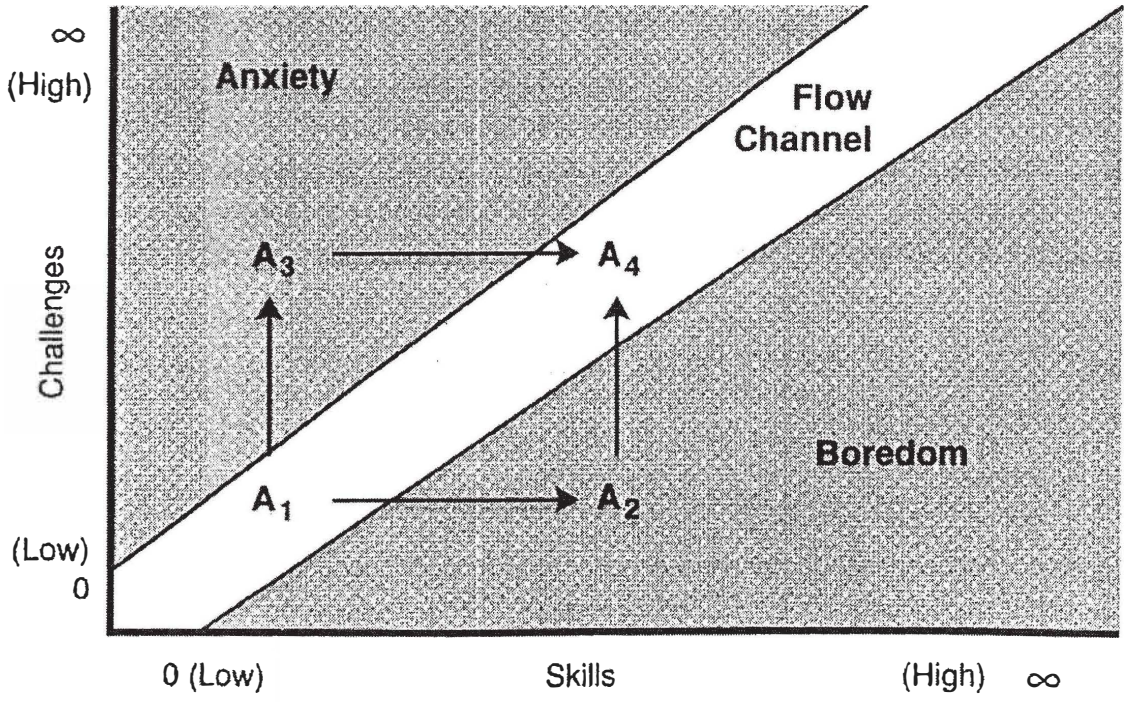


Figure 3. Csikszentmihalyi's "flow channel" model.

Figure 3 shows Csikszentmihalyi's visual conception of what he calls the *flow channel* (p. 74). The flow channel passes between two affective states, boredom and anxiety. When the challenge of a task can just be met by the skills of the individual, he or she is working at maximum capacity; problem solving is

characterized by discovery and a high learning curve is in effect. Notice that Csikszentmihalyi conceives of flow as occurring in a channel rather than along a line. The channel encompasses a range of experience that can be classified as flow state. Notice also the idea of directional forces that move into and out of the channel both from the past (skills achieved) and from the future (challenges presented). This can be seen as a conceptual link to the *memory* and *expectation* in Husserl's "modes of temporal orientation," Figure 2. In Csikszentmihalyi's model, the lower-left to upper-right progression of the flow channel indicates that flow state is dynamic. The situations that trigger flow state at an early stage in the artist's career are replaced by tougher challenges as skills increase. Csikszentmihalyi is theorizing about many different kinds of activity. I conceive of *creative/aesthetic engagement* as a particular version of flow or as a stream-within-the-channel of flow state.

By introducing perception, consciousness and flow state and adding them to the foundations of temporality and creative process, we have assembled all of the main concepts that inspired the inquiry. By identifying the phases of artistic process and by locating 'now' we have established a formal structure that can be used as an anchor or point of reference for the discussion that follows. All of the sources and points of view about time and creative process that have been presented so far in this narrative are part of the preparation for 'running the race' of the writing. They are the philosophical points of entry. While appearing diverse, they were selected because they are particularly useful for analyzing the

interaction between time and the artist at work. Discovering how to best frame the study has been a journey in and of itself.

Weaving a Methodology

To find the methods that fit the task it is necessary to specify the ultimate aims of the research. These are:

1. To describe the artist's experience of time during creative process
2. To design visual and theoretical models that account for this experience and that link it into existing conceptual frameworks
3. To generate new ways of looking at the creative/temporal relationship through philosophically coherent discussion

Describe. Design. Generate. Each of these aims requires a different research methodology, yet the three are linked by a shared focus on a particular phenomenon, the temporal experience of artmaking. This focus provides consistency by aligning the direction of all of the actions involved in the research and writing. Whether the actions are philosophical, like establishing definitions and premises or practical, like designing interview questions and models, all were consciously directed toward the common purpose of discovery.

Chronology of a hybrid methodology

The road I took to discover the methodology for this inquiry was a curvy one. In 1995 I completed a research project for a Choreographic Process class taught by Dr. Penelope Hanstein. For this study I interviewed six artists about their sense of temporal flow during creativity. They were: Dr. John Calabrese, a visual artist; Sharon Underwood, a fashion designer; Vernon Windsor, a

composer/choreographer; and Jo Byrnes Miller, Eluza Santos, and Juanita Suarez, all choreographers. Each of these individuals was (and is) a mature, accomplished artist. I used a series of open-ended interview questions and a visual model for each of them to draw representations of their flow experiences during artmaking. The writing was phenomenological. I had no idea at the time that this would become the pilot study for the rest of my doctoral work.

When writing the first prospectus for the dissertation in 1996, I had decided to use a case-study methodology. I was intending to include an investigation of the temporal aspects of artworks as well as of artistic process. During this research period (2001) I conducted extensive interviews with novelist Jane Smiley. I prepared for these interviews by studying two of her novels and rereading several novels by Virginia Woolf that Jane had suggested. I asked her to respond to an expanded set of open-ended questions and to complete the visual modeling tool that I had used in 1995.

In 2002, I returned to Texas. During the period between 1996 and 2002, my reading and thinking had brought me closer to a philosophical point of view. Through a directed reading project, a refresher course on qualitative methodology with Dr. Tommie Nelms, and discussion with my advisor, Dr. Hanstein, it became apparent that philosophical inquiry was the best methodology to synthesize and present the work that I had been doing.

At the same time, I was working with Dr. Deidre Sklar on some of the concepts I had been developing. During this research, I conducted interviews with and made observations of visual artist Miriam Mitchell and composer Keith

Fleming. As part of the study, I debriefed my own creative process as a choreographer, recording a stream of consciousness monologue as I thought through ideas and worked with my dancers. I also videotaped our creative sessions and asked a colleague to interview me using the same questions I had been asking my participants.

I wrote a second prospectus in 2003, limiting the scope of the study and describing a "hybrid" methodology. This methodology hinges on the establishment of a philosophical framework that integrates ideas from philosophy, psychology and physics and that resonates with the data I have collected through interviews and observations. Passages of phenomenological language as well as the words, skills, experiences, and points of view of the artists/participants serve to illustrate elements of the philosophical line of reasoning throughout. This hybrid methodology turned out to be the "method that fit the task."

Parameters of the methodology

In this study, all of the participants were artists whose professional creative lives spanned at least twenty years. I made this choice because I wanted to gather data from individuals who had long histories as artists and had experienced a degree of success and accomplishment in their fields. I also looked for artists who would be able to talk vividly and evocatively about their work. Among the artists were a potter, a writer, two composers, a painter, several choreographers, and a fashion designer. The artists' introspective accounts and

their insightful descriptions of their experiences both shaped and supported the philosophical inquiry as it unfolded.

My own personal experience as a creative artist in dance, music, and theatre has also informed the work. The heuristic component of the narrative shows in passages of evocative language that surround and illustrate the philosophical lines of reasoning. Evocative language also provides a sense of the artist/participants' original experience. It is always difficult to translate another person's subjective experience through the eyes, ears and pen of a researcher, across a page of language symbols to the consciousness of a reader. Admittedly, temporal experience *and* creative process are highly subjective; however, when they are approached from a variety of angles, a clear picture can be developed.

Yet another aspect of the methodology for this dissertation is visual modeling. Visual models can help to clarify concepts. They can also illustrate how the patterns of different thinkers intersect. The visual models created by Hawking, Husserl, and Csikszentmihalyi that were presented in this chapter have been catalysts for my thinking about the concepts. The visual models that I develop in subsequent chapters reflect the progression of those ideas through the process of the inquiry.

Questions Create Questions

An old saying goes, "The more we know, the more we realize that we don't know." It seems that in the pursuit of knowledge and understanding, the questions we ask beget more questions faster than we can answer the originals. As the concepts of time, temporality, creative process, and flow state become

clearer, the questions raised at the end of Chapter I break open like eggs and hatch clusters of new questions. By now, at the end of Chapter II, the questions have become more specific; the language has become more specialized:

1. How do artists experience and describe the incubation of an artwork?
2. What kinds of preparations does the artist make to help ensure that engagement will be achieved in a creative session?
3. Are there interventions and/or solutions that the artist has at his/her disposal to maintain creative/aesthetic engagement?
4. Is there a relationship between the way an artist experiences a given now-moment and the moment's location in his/her sequence of creative process?
5. What is involved in the synthesizing of memories and expectations as the artist works?
6. How does the sensory engagement of the artist with the evolving artwork affect temporal engagement?
7. What is the influence of the artwork itself upon the artist during the creative process?
8. What is the relationship of the artist's sense of 'rightness' and 'doneness' in the work to his or her time sense?
9. What kinds of connections does the artist feel between the work at hand and his/her past and future oeuvre?

Each chapter will attempt to shed light on one or more of these issues, and, in the process, hatch yet a third generation of further topics for investigation. Some

will be addressed in turn. Some of the third generation questions will be recognized as leading down paths that diverge from the focus and purpose of this study which is to examine the phenomenon of temporal engagement in artmaking with a particular emphasis on how time is experienced during the creative process. To fit this task, "intuition, analytical skills, technical skills and knowledge, imagination, and personal experience" (Rainbow & Froelich, 1987, p. 23) will be employed in a hybrid methodology of discovery.

CHAPTER III

DESCRIBING THE TEMPORAL SUBSTRATE OF THE IMAGINATION: THE MATRIX OF SUBJECTIVE TIME

Different parts of the brain hold on to different aspects of an experience, which in turn are linked together by a special memory system hidden deep within the inner recesses of our brains.
(Daniel Schacter, *Searching for Memory: The Brain, the Mind, and the Past,* p. 9)

Memory is part of the way that we experience time. If we had no memories we would live in an eternal present, unable to speak and unable to interact with our environment in an adaptive way. This is because our experiences are stored in memory and thus, all of our prior learning is accessed through memory. Memory also gives us the reference points by which we navigate into the future. The first time a child burns his hand on a hot stove, a memory of pain associated with the stove is encoded in his mind. His future thinking or his *expectation* when he is in the vicinity of the hot stove is referenced according to this memory and his future actions are guided by the same association: hot stove→ pain. Memory is a mental transportation system through which we can locate *before now* and *before before now*. If, as Mihaly Csikszentmihalyi said, "time is the way that we experience change," (personal communication, October 2001) then memory is the way that we verify time, the way that we verify our experience of change.

If memory is the way we verify that time has passed, expectation is the way we express belief that time will continue to pass, that there will be a future.

We construct our expectations based on our memory of past experience. In the example of the child and the stove above, if the child were unable to formulate expectations, he would have no ability to assess in advance the consequences of touching the hot stove for the second time. *Expectation* gives the child a framework for future action. Ideas about the future and future actions range from simple pain response to complex theoretical constructs like quantum mechanics that seem barely tethered to human experience. In the arts, an expectation for the future could be as simple as the intention to make a new dance and as complex as a detailed mental formulation of how a large group of dancers will dynamically fill a stage space for thirty minutes. For the artist, expectation drives both creative thought and creative action. Expectation is a temporal tool that allows the artist access to possible futures.

Incubation is the idea-generating phase of artistic process. All of the decisions, circumstances, thoughts and feelings that the artist has about a given art work before he or she actually begins the work itself are part of the process of *incubation*. The germ of an idea rises to the surface of consciousness and either stays there, in the forefront of the artist's thoughts, or is supplanted by other concerns that the artist may have. When the same idea comes back into mental focus at a later time, it may seem to be essentially the same or it may have changed. The original idea may now have broadened, revealing an array of different possibilities or the idea may return in a more tightly focused form, as though a winnowing process had cleared away all but the essential element of the idea. Whether the artist attends to the idea in a directed, conscious way or by

'letting it percolate' in a back room of his or her mind, the artistic incubation of an idea is temporal because it happens over time. The artist's memory of experience and his or her expectation for the future are engaged to further the process of incubation. In this chapter, I will examine the temporal aspect of artistic incubation especially in relationship to memory and expectation.

Chronology and Sequence

Life experience occurs in a chronological sequence. That is to say one event follows another. We are five before we are six. We generally lose our baby teeth before we need dentures. Memory is not necessarily chronological. The human mind can skip around through various intervals of the past without proceeding sequentially. We can remember learning to ride a bicycle at age six, then switch to a memory of getting a driver's license at age sixteen, then flip back to a memory of riding a toboggan at age four, and forward again to riding an airplane for the first time at age ten. The free-ranging, or spontaneous and non-sequential, availability of memory is one of the temporal characteristics of memory.

Expectations for the future are characterized by a similarly free-ranging chronological availability. We can imagine going to Bermuda in five years, then think about cooking dinner this evening, then think about living in a nursing home in forty or fifty years, then mentally jump into planning for a party that will happen in two weeks. The projected chronology for these events does not have to match the sequence in which they enter our conscious minds. Moreover, since the sequence for our expectations has not yet become the established

chronology of the past, the temporal fluidity of expectation is even greater than the fluidity of memory. We can rearrange the imaginary future over and over. Perhaps we will go to Bermuda next week, before the party. Perhaps we will never go into a nursing home. Perhaps we will go out to dinner instead of cooking tonight.

The temporal freedom that we experience during both memory and expectation is crucial to the play of ideas that characterizes artistic incubation. During incubation, ideas flow in and out of the artist's conscious consideration. These ideas are predicated on the artist's past experiences and projected forward as possible future events – the creation of new works of art. Part of the artist's 'play' consists of assessing different combinations and permutations of past works while considering new subjects and untried techniques. During incubation, the idea for a new artwork is like a puzzle that can be taken apart and put together in any number of ways. Some of the 'puzzle pieces' come from the artist's memories; others come from anticipated results of future actions. The chronological relationship of remembered, present, or projected events is not sequentially binding in the mind of the artist during incubation. Memories and expectations can be accessed at will, in any order.

The artist processes memories and expectations in many ways during incubation. For example, the mobility that the artist has with respect to sequence and chronology enables him or her to consider ideas, events, and memories in various relationships. Potential relationships or *juxtapositions* between images or ideas can be tried out imaginatively, then discarded or altered. Because the

images and ideas can come from anywhere in the artist's past, present or potential future, *juxtaposition* takes advantage of the artist's ability to manipulate ideas temporally.

Juxtaposition

There are many ways to discuss expectation. Since visual stimulus is one of the primary ways that we gather the experience that we process, we are apt to say that we 'visualize' the future. We create an imaginary image of an event or an object that has not yet been experienced. As we accumulate more information about the event or location or object that we are visualizing, we can manipulate the image. As we create and recreate an image, we also create an expectation of a possible future *encounter* with that event, location, or object. Let us look at two illustrations that are designed to show the temporal play of memory and expectation through visualization. In the first illustration, the individual is creating an expectation of a trip to a place that exists, but that she has never visited before. In the second example, an artist is creating an expectation of an artwork that does not yet exist.

In this example a woman is planning a trip to Japan. Her first exposure to images of Japan was looking at pictures of Tokyo and of Mount Fuji. The pictures were taken twenty years ago so they represent a Japan that is part past, part present, part future: Tokyo and Mount Fuji existed twenty years ago, they are somewhat altered from the image today, and they will exist for some indeterminate time in the future. The woman's initial experience of looking at the pictures is now a memory of visual images. She is able to manipulate parts of

the images that she recalls because she expects that clothing and automobile styles, for example, will have changed. But in her mind, the images of the buildings and the images of the mountain remain the same. Later, she reads a historical novel that describes a seventeenth-century fishing village on the Japanese coast. From her reading, she builds a visual image of the village. Part of this image-building or visualizing comes directly from the words of the author. Part of it comes from her memory of the pictures of both Tokyo and Mount Fuji. Part of the visualization that she makes comes from a juxtaposition of memories of other locations she has seen or visited, a seashore village in Maine and a fish market in Portugal. So, in creating an expectation for what she will see when she goes to Japan, she is blending multiple memories from her own past and her knowledge of the present with the twenty-year-old vision of the photographer who took the pictures and the verbal description of the author, written several years ago, but depicting a time that is 400 years in the past. The composite may contain a boat from here, a mountain from there, and an image of people drawn from her current or past Japanese acquaintances. She may create a set of tight, fully detailed mental images or she may leave large areas of her shifting visual canvas ambiguously formed to accommodate the 'unforeseeable' aspects of her anticipated visit. In either case, her visualization is a *juxtaposition* of images made possible through a *juxtaposition* of temporal referents.

For the second illustration we will use the incubation process of a hypothetical painter who has been commissioned to make a large new painting for the foyer of the Sanyo headquarters in San Francisco. He has visited the

building and has seen the space intended for the finished painting. The patrons have indicated that they want a painting that has 'some feeling' of Japan in it, but they are not interested in a realistic representation. The location, the size of the canvas, and the request of his patrons all contribute to the initial visualization that he makes for the painting. His memory of the physical space is from his past visits to the building; his idea of the scale of the work is an expectation for the future; his initial images for the painting are a combination of his and his patrons' ideas for the work. He visualizes mountains because of the scale of the space and because he remembers that Japan is mountainous. He visualizes a Buddhist temple to give a Japanese context to the landscape.

In the past, he has made several large semi-abstract landscapes. He calls up memories of these past artworks and casts a critical inner eye over them. What formal elements have worked in the past and what new directions does he want to try? He goes to the library and checks out the same book of photographs seen by the woman in the previous example. In his mind, he compares the photographic image of Mount Fuji with the image of the mountain he had already created. He decides to keep the distinctive contour of Fuji in his mental image, but keep the pattern of foothills that was originally in his mind's eye. He then decides to eliminate one side of the Fuji-shaped mountain so that the entire mountain goes up and off the canvas to the right. This gives the more abstract feeling that he favors. In this imaginary revision, he is anticipating creating an outcome that will please him aesthetically. Next, he plays with placing the form of the temple somewhere in the canvas. Where will it balance the sweep of the

mountain? How much of the structure should he include? What size should it be? Should it be identifiable as a temple or a mere suggestion of Japanese architectural design? He can create a multitude of visualizations to answer each of these questions in a variety of ways.

Before the painter ever stretches the canvas or picks up a brush, he has blended and shaped images from his own past with expectations for the future. The painter's visualization for the new work is also a *juxtaposition* of images made possible through a *juxtaposition* of temporal referents. Mount Fuji exists in Japan in the present; the photograph is the twenty-year-old artwork of a photographic artist; the painter's original image of mountains is already a composite of his memories of mountains. In this case, the visualization that the painter makes is of an artwork that does not yet exist rather than of a place that does exist.

In both cases, though, the visualization exists solely in the mind of the individual. For the traveler in the first example, the visualization itself will become a memory and will eventually be supplanted entirely by her direct encounter with the 'real' Japan. Then she will have images of Japan that are memories of her experience. For the artist the imaginary nature of the visualization will change when the painting actually begins to take form on the canvas. Then he, too, will have memories of the experience of painting but he will be continually reacting to partial realizations of his expectations. The many composite visualizations that he has made during the course of incubation may resurface as future artworks or as new temporal referents to initiate future

visualizations and explorations leading to other new artworks. Although the temporal and imagistic 'play' will continue through the artistic process, it is during incubation that juxtapositions can be most freely tested and altered.

Through memory and expectation we verify the temporal nature of our experience and conceive possible future actions and events. We are able to reproduce, manipulate, or ignore chronological sequences as they have occurred in the past or may occur in the future. Juxtapositions are one of the ways that we manipulate images of the past and future. Through juxtaposition, we can cut and paste bits and pieces from both memory and expectation to create composite visualizations that are new ideas, new ways of looking at old ideas, and new approaches to present problems.

The mechanics of retrieving these bits and pieces, of transforming experience into memory and expectation, and of accessing and manipulating images is part of the process of *encoding*.

Encoding, Depth of Processing, and Engrams

As illustrated by the example of the child and the hot stove, everything we take in through sensory channels is organized to make sense so that we are able to survive in the world. Sensory perception is the first line of awareness not only for the child but for the adult as well. We have many sensory channels –visual, auditory, olfactory, and tactile. When a sensory experience that a person is having becomes a sensory experience that he or she has had, the experience is translated into a memory. Daniel Schacter (1996) refers to this process of translation as *encoding*, "…a procedure for transforming something a person sees,

hears, thinks, or feels into a memory" (p. 42). The procedure is a result of experience plus attention. Some experiences, like touching a hot stove, command attention through sheer intensity of sensory input. Some experiences, like hearing the news that President Kennedy was shot, command attention because they are unexpected and/or emotionally laden. Ordinary, run-of-the-mill, unremarkable experiences are the most likely to be forgotten, but there is no way to categorize priorities of attention to experience irrespective of the person who is having the experience. What is unremarkable to one person may be remarkable to the next. For example, we may not have paid attention to the positions of our bodies when we woke up yesterday morning. Were we lying on our fronts, backs, right, or left sides? A person whose right shoulder is injured would probably be able to remember the position of his or her body upon awakening yesterday morning. This is because *attention* was focused on the issue of body position even during sleep.

From this, one might think that more attention to an experience would necessarily lead to more memory of the experience, and to a limited extent this is true. Schacter (1996) suggests that when only a single kind of attention is focused on an experience, like repeating a phone number over and over, or like trying to take a mental snapshot of an accident scene, the memory is encoded only superficially. "To establish a more durable memory, incoming information must be encoded much more thoroughly, or deeply, by associating it meaningfully with knowledge that exists already in memory" (p. 43). When attention is paid to an experience such that lateral connections are made to other

memories of experience, the resulting "depth of processing" (p. 43) can make the memory both more detailed and more accessible at a later date.

The "knowledge that exists already in memory" is encoded in many forms. Artists may encode memory by using sensory channels in ways that are deep and wide-ranging. Because the work of the artist acknowledges from the outset that sensory experience is valued – painters are visual, dancers are bodily/kinesthetic, musicians are musical – artists are sensitized to and appreciative of sensory input. Sensory awareness, agility, and analysis is encouraged and cultivated in painting classes, dance classes, and music classes, for example. In artistic training, links are also forged between seeing, moving, and listening. The painter's hand is kinesthetically responsive in order to produce the visual image in her mind. The dancer 'sinks into' the music to dance more expressively. The composer is sensitized to the emotional affect that sequences and combinations of sounds may have on the listener. The novelist is able to see locations and situations deeply and completely in order to describe these fully to readers. As a result, the encoding process that turns experience into memory and the retrieval process that accesses memory are functions of lateral thinking and dimensional networking rather than linear journeys through a chronologically ordered consciousness.

Miriam Mitchell has been creating visual art for over twenty-five years. She has also been teaching people of all ages how to approach and create visual art and has instructed in programs for talented and gifted high school students. Miriam describes three aspects of paying attention that she considers crucial for

artistic development: sensory sensitivity, the ability to see detail, and passion about the work. In the first quote she describes her own process, the way that she perceives and pays attention to the world around her. In the second quote she speaks more as a teacher. As she describes the ability to see details, she links this ability to slowing down perception enough to take in more aspects of what is being seen. Slowing down, in turn is abetted by passion for the work and passion for the process.

> I just feel so connected to this planet and to nature and to beautiful living things, and animals and everything else, it's like I feel that visual experience inside. It's like having nature in your veins. I don't know how to explain it to you, I have a real – just a heightened sensitivity to everything visual, everything that comes into my environment… And feeling so deeply that it's all intertwined… I think what makes me want to create and be able to is that heightened sensitivity to everything around me. Physically, and visually. (personal communication, April, 003)

> You have to be able to slow down long enough to see what's there… If you don't care about what you're doing, you're going to rush past that. But if you're really getting involved in what you're doing, and you're passionate about it, then you're going to take time to see that detail. It's the same thing as in dance or in music, you know, taking the time to just hear the fine-tuning in that note and really work on that note until you get it right. You have to have that audio sensitivity to hearing that change. And some people just don't either have the ability to hear it, or they choose not to, because they're in too big of a hurry, or they don't feel passionately enough about it to change that, to get into that. (Personal communication, April, 2003)

In Miriam's view, the requisite attribute for perceiving and processing detail is sensory sensitivity. The two quotes make a full circle that returns us to the idea that focused sensory perception is the key to depth of processing.

Miriam's words provide an excellent illustration of the specialized kind of attention that Alfred Schutz calls "wide-awakeness" (cited in Greene, 1978, p.

173). It is an active, hands-on, in-the-middle-of-things kind of attention that leads to detailed, deeply embedded memories. During artistic incubation, these encoded memories provide rich source material for the creative 'play' of juxtaposition and the development of multiple and varied expectations.

After a memory is encoded, it is synthesized and linked to other bits of sensory information to produce an *engram* or "representation of the memory in the brain" (Schacter, 1996, p. 58). In the early example of the child and the stove, for example, the child's engram for the memory may be the tactile sense of his hand upon the hot metal. Or it may be a visual picture of his own hand reaching up and touching the stove. Or it may be an emotional recollection of the commotion and anxiety caused by his screams and his pain. A repetition of any of these circumstances or similar circumstances can call up the entire memory of the hot stove experience. An engram is fluid and mobile. The mind links and associates a memory of an experience with other memories. When something is remembered, the engram triggers, "the simultaneous activation of sensory fragments that were once linked together. The retrieved memory is a *temporary constellation of activity* [italics added] in several distinct brain regions" (Schacter, 1996, p. 66). The "temporary constellation of activity" is temporal in many senses. First, the activity of remembering is not only an exploration of a particular past experience, but also a networking of experiences from many different times in an individual's past.

The following is an example of the temporal networking that can come from an engram. The illustration comes from the artistic process of novelist

Wally Lamb[1]. In this interview, Lamb is describing his incubation period for *I Know This Much Is True*. At first he struggles with the inception of the novel. Then an image of a man driving a truck pops into his head. As Lamb goes on to define and refine this image, his juxtapositions of bits and pieces of memory trigger a revelation about his new characters' connections to his own life. The first engram, wishing for a brother, connects to one of the main themes of the book, sibling relationships. The second engram, riding past the state hospital in the back of his parents' car, comes into play much later in the writing process as part of one character's actual experience. The book is not autobiographical, but both of Lamb's memories become part of the fabric of the novel and both are present in the incubation process of the book.

> The novel actually began with almost like a little...maybe 30 seconds of a movie going on in my head. And that moving picture was a guy behind the wheel of a pick-up truck. And he's out there in the middle of the night, in the middle of the road and he's driving around because he can't sleep. ...so I started playing a guessing game. Why can't he sleep? Who does he love? Or what does he hate? What's his deal? And so I started writing in that character's voice...So with Dominic... certainly before I had any of an inkling of his story, I had his anger. Beneath the surface of that anger, I had his despair.
>
> I think I was maybe three weeks into it when I discovered that part of that anger had to do with a brotherhood, with a sibling. And that relationship was troubling to him. Now I think that, ultimately, all writers write from their needs, longstanding or short term. I don't have brothers of my own. I have two older sisters. I remember, when I was a kid, standing in front of my illuminated birthday cake every year and wishing for a brother and then blowing out the candles. Of course, that never happened. I think maybe if I reach back or play a little psychology with myself, I may have been still looking for that. I wasn't banking on a brother like Thomas!

[1] Wally Lamb is the author of *She's Come Undone*, and *I Know This Much Is True*. Lamb's comments come from a 1998 interview he did with the performer of the book on tape, George Guidall.

> I started working with Thomas and started writing a couple of scenes between Dominic and Thomas. I realized that he was mentally ill, but I had no idea what his problem was. I grew up in Norwich, Connecticut. Norwich houses an institution that has now closed but was, through most of the twentieth century, one of the largest state mental hospitals in that particular state. When I was a kid, I would drive by that place in the back seat. Actually my parents were at the wheel and I'd be in the back seat, looking. So it looked ominous; it looked creepy, but it was fascinating to me. The state hospital. (published interview with George Guidall, 1998)

In Lamb's own words we can see the "constellation of activity" at work. Lamb's wish for a brother exists in his mind as an engram linked to his birthday, and also as an engram for an event that never happened. His memory of being fascinated with the state mental hospital is an engram that is linked to a memory of being in the back seat of a car. These two memories have somehow associated themselves in a part of Lamb's mind. They come together as he creates the character of Thomas. Lamb does not mention that one of the most poignant scenes in the book portrays Thomas approaching the state mental hospital in the back seat of a police cruiser.

The second temporal aspect of retrieving memory is that the process of remembering has variable duration. The engram can trigger an instantaneous flash of memory or it can ignite a slow fuse for a succession of revelations that take place over a period of time. One of the kinds of engrams most linked with instantaneous flashes of memory is an olfactory engram. A familiar smell has an almost uncanny way of triggering deep chains of memory. In the movie *Harold and Maude* (Higgins & Mulvehill, 1971), Maude shares an intriguing invention of hers with Harold. It is an aroma machine that can call up a whole array of interesting and provocative scents. Different "olfactory banquets" immediately

transport the characters back to particular times and places, for example "snowfall on 42nd street." The aroma machine's symbolic place in the story is as a life-affirming reminder that the ability to have sensory experience is a precious part of being alive. Memory retrieval can also go on over an extended period of time. For example, the visual engram of facial structure can often trigger a protracted search through volumes of memory to find a match. A person we have just met reminds us of someone we know. Who is it? From what epoch of our lives has this similar face reappeared? What part of the face is the element that triggers the memory? We sort through all kinds of engrams to locate the answer and it may take us weeks or even months to finally have the Aha! moment of recognition.

The third temporal aspect of retrieving memory is that an engram can be a representation of an expectation, an experience that has not yet occurred. To differentiate this kind of engram from the engram for a memory of actual experience, I will refer to it as a *phantom engram*. It is a shadow of a possibility that exists in the mind. In the example from Wally Lamb's interview, his lifelong wish for a brother exists as an engram. If he visualized such a brother and created a projection of the brother's character and the relationship the two would have, the engram of the wish would be connected to the phantom engrams of the visualized brother. For an artist, a phantom engram may be a representation of a visualization for an artwork.

Let us take the example of an architect who has been dreaming about designing a house that contains a suspension bridge connecting public to private

spaces. He may think about this over a long period of time before putting pen to paper to begin sketching his ideas. Over time, the mental image becomes more developed. Perhaps he finds a location that suits the design. He can clearly picture how the bedroom wing of the house is connected through the bridge to the living/dining spaces and how all three will reflect the swooping curves of the suspension cables. The memory of his mental work becomes a detailed expectation for the future and it is symbolized in his mind by an image of the suspension bridge. The bridge image becomes a phantom engram for a future possibility.

At the same time the phantom engram is a record of hours of thinking that have occurred in his past. But it is not a memory of an actual architectural project, or even an actual drawing of an intended project. So the point on the timeline at which the architect *began* to conceive of this particular house design is the first point at which the line of expectation is cast into the future. As he continues to revisit the design in his mind, it will gain detail and may change altogether. Perhaps at some point he begins to visualize a light-filled atrium with a garden as the focal point for the house instead of a suspension bridge. Then the phantom engram, too, for the expectation involving the house will change. In this case, the image of the suspension bridge will also be laterally attached to his thought process about the house. In this way a matrix of expectations is built up for the possible future just as a matrix of memories is built up to describe the past.

An understanding of the way that sensory experience is encoded as memory helps to clarify how the chronological flexibility of memory and expectation is possible. An examination of depth of processing brings forward the idea that attention to experience is a qualitative variable that is directly linked to both the durability and the richness of memory. An exploration of the flexible and associative nature of the engram helps us understand the mechanics of juxtaposition. Separating out the concept of the phantom engram helps to describe the way that expectation both resembles and differs from memory. For the artist, all aspects of the process - perception, encoding, synthesis, formation of the engram, retrieval of the memory, and construction of phantom engrams - are sensory and connective. As the incubation of an artistic idea progresses and the corresponding phantom engram acquires more detail, more agency, or more urgency, the idea is pushed from incubation to impulsion. Although the push is not one-way, it does cause a difference in the artist's temporal consideration of the potential artistic project. It moves from a *realm of possibility* to a *zone of probability*.

Possibility → Probability = Incubation → Impulsion

Possibility is the set of all events, ideas, and actions that have occurred or have even the remotest potential of occurring in the past, present, or future. Probability is a progressively narrowing subset of possibility. As it is used in statistics, gambling, and weather forecasting, probability is an attempt at predicting what events will actually precipitate out of the vast potential of possibility. As we know from the outcomes of sporting events and from our

encounters with unanticipated weather, just because something has a high probability doesn't necessarily mean that it will happen. The realm of possibility is huge, the border of the zone of probability is fuzzy, and the traffic into and out of probability is high.

In artistic process, incubation can be likened to possibility because the doors of potential are wide open. Although choices may be made in the realm of the imagination, there are no marks yet made on paper, no notes yet played on the piano, no blocks of marble yet chosen from the quarry. All choices are still subject to change and all options still remain. Impulsion can be likened to probability. By the time an artistic idea has reached the stage of impulsion, it has gathered a certain amount of force and hence, the likelihood of becoming an actual artistic work-in-progress. As with the more general notion of probability, the idea that an artistic concept has reached impulsion is not a guarantee that it will happen as an artistic event, but it does signify a temporal prioritization in the mind of the artist. The discussion that follows explores 1) how the notions of possibility and probability fit into the context of memory and expectation, and 2) how the temporal characteristics of artistic incubation and impulsion mirror the general temporal characteristics of possibility and probability.

In a traditional, Western left-to-right timeline, past events fill tidy, marked spaces in an orderly sequence and future events will eventually become tidy, marked spaces as they become past events. In the world of memory and expectation, past and future events occupy a much more multi-dimensional space than a simple linear progression. In English, we have developed many

verb tenses to describe and deal with the realms of possibility and probability. The following example points out how verb tenses indicate an event's likelihood. The grammatical constructions are reflections of our ability to accommodate uncertainty, even within the context of an 'historical event.'

The death of President Kennedy occupies a secure place on the timeline of United States history in November of 1963 in Dallas, Texas. President Kennedy *might have been* shot by a single gunman. He *could have been* shot from the grassy knoll. The bullet trajectories indicate that he *was probably* hit by a bullet fired from the book depository. Lee Harvey Oswald *may have been* in the employ of the Soviet Union. Or *perhaps*, if filmmaker Oliver Stone is to be believed in the movie *JFK* (Ho & Stone, 1991), Oswald *was* an operative for a junta of U.S. politicians, military entrepreneurs, F. B. I. men, and mobsters. This story is *improbable*, but Oliver Stone has made convincing art out of the nimbus of uncertainty that surrounds a single timeline event. There are *probably* still people alive who know some of the factual answers to the questions that fascinated and puzzled a bereaved America. By factual answers, we mean *all the true* and *only the true* events that led up to and followed the 1963 tragedy. But we are left with a *strong probability* that we *will never know* what really happened on that day. The example of President Kennedy's assassination is one of the most well-known examples of how even an event in the past - as we know it, as we describe it, and as we teach it in our history classes - is constructed out of varying shades of possibility and probability.

If expectation has greater latitude and flexibility than memory because the events have not yet occurred, then the range of possibility and probability is even greater for the future than for the past. Some things lie close to the line of future certainty. Some things lie farther out, in the range of possibility. Still others seem patently absurd, but are still within the range of conjecture:

1. There will still be air to breathe when we wake up tomorrow morning. (high probability)
2. We expect to have a United States presidential election in November of every fourth year. (probable)
3. It is possible that there is such a thing as global warming. (depends on who you ask)
4. All the European nations could share not only a currency, but also a government by 2025 A.C.E. (low probability)
5. Little green people might be living deep in the canyons of Mars just waiting for the opportunity to attack Earth. (extremely marginal possibility)

An entire art form, science fiction, has been built around the exploration of possibility and probability. Science fiction, too, has splintered into many realms: hard science fiction, fantasy, speculative fiction, revisionist or alternative history, and further sub-genres like cyber-fiction. The proliferation of these genres is an outward indication of our fascination with possibility and probability and our ability and our willingness to consider a variety of potential futures.

So far, the discussion of possibility and probability has been based on a collective, societal version of the 'real' or 'imagined' past and the 'likely' or 'highly unlikely' future. Artists live and make art within the milieu of their own cultures, whether or not they espouse the reigning views of the past, present, or future. The artist's own, individual sense of possibility and probability is therefore both influenced by the temporal beliefs and configurations of the culture and may have influence over those same beliefs and configurations. Through the artist's knowledge of the historical past and his or her ability to imagine a future beyond his or her own death, the artist is able to participate in and perhaps influence a temporal awareness that goes beyond the limits of his or her life span. Possibility and probability are part of the artist's process on two different levels, cultural and individual.

The same multi-dimensional spread of potential that exists for events in a cultural setting exists in the imagination of the artist during the incubation of an artwork. As the probability increases that an idea for an artwork will actually be made into an artwork, the phantom engram that represents the idea moves closer to the timeline of the future, the location of highest probability. When the probability becomes so strong that the artist experiences a sense of incipience, an urge to action, the idea moves into the *impulsion* phase. The process can be compared with waiting on the telephone for a customer service representative for the electric company. "Your position in the queue is now 3." As your position in line moves up, you are more likely to be able to speak to an actual human being. As an idea's position in the queue moves up, it is more likely to be

made into an actual artwork. Unlike the system the electric company uses, "Your call will be answered in the order in which it was received," the chronological point at which the idea was conceived may have little or nothing to do with its position in line. An idea that has been incubating since the artist's childhood, for example, may not reach the stage of full impulsion until her middle age.

Margery Franklin (1989) illustrates the submerged/emergent property of incubation and impulsion in her description and analysis of sculptor Melissa Zink's creative process. Franklin is concerned with representing "the inherent temporal dimension" (p. 264) in Zink's work, especially when Zink's artistic ideas and mode of expression seem to take a radical change of direction. Franklin conceives of the "interconnected set of feelings, ideas, and activities that a person considers to be his or her work and that is experientially extended in time" as the "work stream" (p. 264). As she describes Zink's work stream, Franklin cites "childhood play," "archaeology/art," "imaginative visualization," "language: words and phrases," and "personal experience" as tributary streams that flow into and enrich the work stream (p. 273). In the terms of the discussion that I have been developing in this narrative, all of these tributary streams are connected not only to the work stream, but also to each other. Phantom engrams travel throughout the "imaginative visualization" stream and engrams for memories travel along the other streams.

In order to trace the temporal layering and connectivity of Zink's creative process, Franklin makes a multi-layered timeline. At the bottom of the timeline

she labels the years of Zink's artistic transformation, 1974 - 1979. Above the years she divides the line into identifiable periods like "Assemblage, Construction, Painting," "Early Explorations in Clay," "Period of the Nine Walls," "Age of Discovery," and "First Show" (p. 273). The work stream and its tributaries are spread out in another layer above the periods. The reader can see how "tributary streams" are initiated in Zink's consciousness long before the effects of these streams emerge in her artworks. In this way, the dimensionality and flexibility of Zink's inner temporality are integrated with the linearity of the timeline progression.

Over a period of five years Zink made a transition from painting large abstract canvases to making intimate, figurative sculptures. During the process she began to make detailed, active visualizations of her artworks before beginning to construct them. In Zink's words, "...the medium gives you some kind of impetus to learn to move your mental images around, to concentrate, to improve them...you can open doors" (p. 269). Some of the doors that Zink opened led to her own childhood behaviors of imaginative play and some led to "thematic material previously excluded from the work stream" (Franklin's words, p. 269). Zink was able to realize ideas in her new three-dimensional medium that had lain dormant while she was working on canvas. Her incubation periods became rich with interconnections between her past and her possible future. Transitions from the possible to the probable, from incubation to impulsion, flowed easily.

The possibility always existed that Zink's artistic work would change radically both in form and in content. Its probability was low, however, until Zink crossed a threshold in her personal and artistic life. During the "Early Explorations in Clay" period, Zink seemed to keep the realm of possibility wide open as she let herself 'play' in the medium without imposing structure on her work. Then, as she felt more at home in the new medium and began to let associative streams flow into her work stream, she began to actively push ideas into the zone of probability through intense visualization.

The idea of "depth of processing" can be applied to expectation just as well as to memory. As Franklin writes about Zink's tributary streams - art, archaeology, language, personal experience, childhood play - she describes how they all are called into play during the incubation of Zink's works. The same types of lateral association help to develop the phantom engram of an idea as develop the engram of a remembered experience. Depth of processing helps to push the idea for an artwork toward impulsion and action, but there is nothing necessarily permanent about a phantom engram's position in the zone of probability. It can be supplanted at a moment's notice by another idea.

The Matrix of Subjective Time

The temporal fluidity and malleability of the processes associated with memory and expectation are present in all stages of artistic process, but nowhere are they so pronounced as during incubation. The artist can travel imaginatively through his or her past, present, and potential futures as well as through a cultural and even multicultural past, present, and future as he or she

understands it. Metaphorically, the temporal landscape of the imagination can be described as a multi-dimensional matrix. The matrix facilitates temporal travel and association between any of the individual's memories and expectations. The matrix is a subjective construct because it is uniquely formed by each individual's experiences, perceptions, interpretations and projections. Hence, I have called this temporal substrate of the imagination the *matrix of subjective time*. The *matrix of subjective time* encompasses all of the temporal modalities of creative incubation that have been presented in this narrative so far. The following recapitulation of temporal modalities sets them in relationship to each other and to the larger concept of the matrix of subjective time.

Memory is the way that we verify for ourselves the passage of time and *expectation* is a temporal tool that allows us to access possible futures. During creative process, both memory and expectation are fluid and mobile, allowing spontaneous, non-sequential access to events that may have occurred in sequential, chronological order. The non-linear *juxtaposition of temporal referents* is one way to create new ideas, new ways of looking at old ideas, and new approaches to present problems.

The "*temporary constellation of activity*" (Schacter, 1996, p. 66) that occurs during the retrieval of a memory is temporal in many senses. First, the activity of remembering is a networking of experiences from many different times in an individual's past. Second, the act of remembering has variable duration that is not a replication of the time passed in the original experience. Third, the

memory can be of a thought process that is a projection into the future rather than a memory of experience.

Memories are encoded as *engrams* or representations of experience and expectations are encoded as *phantom engrams* or representations of ideas for the future. These engrams are triggers for recalling the sensory experience that composes either the memory or expectation. The more complete and associative the depth of processing of a sensory experience, the more durable and rich the memory. Likewise, the more complete and associative the depth of processing involved in the incubation of an artistic idea, the more durable and rich the expectation for the artwork. Depth of processing is accomplished through modalities of attention that connect incoming information to "knowledge that exists already in memory" (Schacter, 1996, p. 43). Some of these modalities include sensory sensitivity, sensory connectivity, time spent noticing detail, and passion for artistic process.

In the same way that the mind can deconstruct sequence in order to have free access to memories and expectations, it can construct potential sequences and temporal priorities in order to explore the *realm of possibility* and the *zone of probability*. The artist is at work in at least two nested realms of possibility and probability. One is the encompassing realm of the culture, which has its own temporal viewpoints and configurations. Cultural temporality also goes beyond the lifetime of the artist into the past and into the future. The second is the realm of the individual. The artist's individual temporality partakes of cultural temporality while having characteristics and configurations that are unique. As

the incubation of multiple artistic ideas evolves into an impulsion toward one particular idea, the *phantom engram* for that idea moves into the *zone of probability.* The idea may go forward to the action phase of artistic process, or it may be supplanted by another idea.

The artist's memories and expectations can be conceived of as a multi-dimensional temporal substrate through which the artist travels to gather, compose, examine, discard, play, associate, juxtapose, and rearrange the past, the present, and the future. I call this temporal substrate the *matrix of subjective time.* Through the *matrix of subjective time,* the artist explores the *realm of possibility* to *incubate* new ideas and moves these ideas toward the *zone of probability* as they reach the stage of *impulsion.* The ideas may or may not become an artworks. The outcome is partly a function of the artist's conscious choice and partly a function of events and circumstances over which the artist has no control. Inasmuch as the artist <u>does</u> have control over the incipience and consequent implementation of an artistic idea, he or she engineers both the probability that an idea for an artwork will become a perceptible form and the ensuing action phase of the creative process. The way that the artist engineers moments of creative productivity is the subject of the next chapter.

CHAPTER IV

FROM PREPARATION TO ACTION: THE ENGINEERING OF 'NOW'

The difference between creating inside oneself and creating outside oneself by means of an extension is basic and crucial....It takes ten to fifty times longer to do things outside the body than inside.
(Edward T. Hall, *The Dance of Life: The Other Dimension of Time* p. 128)

In the world of the artist, *incubation*, the internal act of producing new ideas, precipitates the action of producing them in the physical realm. Between incubation and action (or *event* in Hawking's terms) lies *impulsion*, characterized by growing intent. Intent becomes concretized in physical action. As the idea for the artwork makes the transition into the physical realm, its temporal sphere also shifts. The artwork makes a transition from existing solely in the artist's matrix of subjective time to existing also in a realm of measured time / space that can be perceived by others. Helga Nowotny (1988) sums up these two kinds of time in the terms "proper time" and "public time" (p. 13). Although Nowotony is not specifically concerned with artistic process, she is concerned with "unsolved problems and what solutions there may be" (p. 13). Action, Nowotony states, is characterized by decision and the whole problem solving process is, "...about people playing with time" (p. 14). Artists play not only *with* time but also *between* kinds of time, between the external world of measured, shared time and the internal world of subjective, sensed time. The next section sets out parameters for 'kinds of time' and for the places *between* "public" and "proper" time, the 'now' moments of action, when imagination takes on physical form.

Time's Terms and the Location of 'Now'

In day-to-day life we have come to think of time as a measured, partitioned, progression of moments. We measure time in terms of the second, minute, and hour hands sweeping around the face of a clock. We locate ourselves in the work week by grouping five days together - Monday through Friday – and two days together - Saturday and Sunday. We understand the progress of our historic past by plotting points on a timeline that reads from left to right across a printed page. We get a picture of our prehistoric past by quantifying the number of carbon atoms that remain in a charred piece of firewood. If we want to locate and agree upon a when, we contextualize it through the use of nested systems: 4:25 o'clock p.m., Tuesday, November 18, 2003. The systems interlock to form blocks of centuries, geologic ages, and stellar eons. The terms we use to denote measured time are varied. A few examples are: linear time, objective time, clock time, quantitative time, and time as a function of decaying isotopes. Each of these terms pertains to a standard, a symbol, or a system that can be recognized and used as a tool for synchrony. No single term describes standardized time comprehensively. Indeed, the vocabulary for measured time multiplies 'as time goes by' rather than distills to an essence. In this narrative, the terms linear time, objective time, clock time, quantitative time and public time will be used interchangeably to denote measured time.

The subjective experience of time is personalized through perception and experience. We can describe the subjective experience of time in many ways.

Time can be accelerated or delayed, lost or found, despised or embraced irrespective of the measured time involved in the experience. Emotion, activity, and circumstance can particularize temporal experience. The study of biorhythms attempts to bridge the gap between subjective and objective time. By describing how hormonal, diurnal, and seasonal changes affect our bodies and, hence, our sense that time drags or rushes, biorhythms coordinate systems of measurement (i.e., photoperiod, menstrual cycles, blood chemistry) with patterns of internally experienced temporality. There are many terms that denote the variety of ways that individuals experience and process temporality. A few examples are: sensed time, internal time, subjective time, felt time, non-linear time, imaginative time, and qualitative time. Each of these terms pertains to perception. All are derived from descriptions of experience and must be approached through descriptive language. As with the terms used to denote measured time, each of the terms used to denote perceptual time has its limitations and shades of meaning. In this narrative any of the terms above may be used to denote perceptual time in general. Terms that identify a specific genre of temporal perception will be defined as they appear. The *matrix of subjective time*, described in the previous chapter as the temporal substrate of the imagination, is an example.

The concept of 'now,' or of a moment, or of an instant, partakes of both sides of the temporal coin. We can identify it as a location in measured time, i.e. 4:25 p.m. and 12 seconds exactly, Central Standard Time, Tuesday, November 18, 2003. But the experience of 'now' is always either approaching or receding, even

as we constantly carry it with us. So 'now' is also an imaginary location, deeply subjective and describable only in retrospect. Even the time that it takes someone to verbally articulate what he or she is thinking or feeling at any given moment puts him or her at a temporal remove from the moment that is being described. In any kind of research that relies on a participant's memory of a phenomenon, the researcher must acknowledge that the description of the phenomenon can only approximate the actuality of the phenomenon. A researcher getting close to a description of 'the sensation of now' or 'the temporal components of a particular now' is no exception.

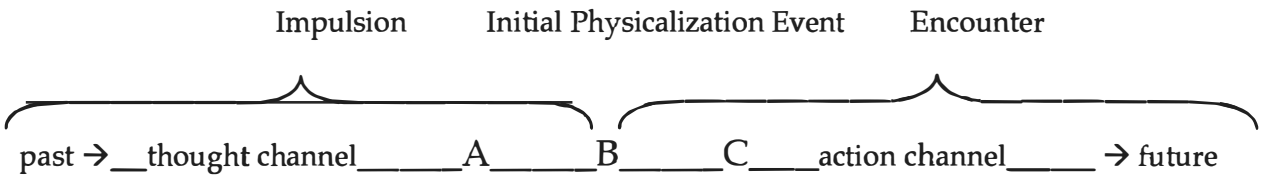
People can also generate expectations of now moments to come. As we have seen in Chapter 3, this is an extremely complex and subjective operation. We direct a great deal of our energy, as individuals and as members of cultural groups, into engineering a succession of potentially satisfying moments. Helga Nowotony (1988) describes the process of developing expectations thus, "The open horizon is to be preserved, and what has not been conceived is to remain conceivable, yet the positive and negative repercussions are equally to be known and controllable in advance" (p. 51). Although the future is ultimately unknowable, we expect these "controllable" moments to become our future now points. We even create phantom engrams for them. Artists are deeply involved in both the experiencing and the engineering of 'now' as they work through the "open horizon" of the future to conceive and physicalize their ideas.

The concepts proposed in this chapter are designed to answer the following questions: *What* is the artist experiencing during the fleeting transition

from expectation to action? *How* does the artist take agency so that the transition actually occurs? As Husserl (1905/1964) reminds us, the present is always vanishing into the past whether we decide to take agency or not. *What do artists do* to engineer the moment that a dream begins to take on a physical form?

Preparing a Small Cross-Section of Time

The engineering of future 'nows' concerns turning an expectation (*impulsion*) into an action (*event*) that then becomes a dialogue (*encounter*). Let us examine three hypothetical now moments that occur in a cluster around the emergence of an artwork's physical existence. To help the reader visualize these three moments, they may be put on a traditional left-to-right timeline thus:



Moment B is the pivotal point in the sequence. It represents, for example, the painter applying the first brushstroke to a canvas, or the choreographer's first movement, or the composer's first notes either as they are sung, played or written. Moment A occurs just before the brushstroke, moment B during the stroke itself, and moment C just after the stroke has been made.

'Now' moment A marks the end of the initial preparatory phase of the work. It is a result of the triage of ideas that occurs during *incubation* and the accumulation of momentum that characterizes *impulsion*. When the painter raises the brush - when the choreographer gets up and begins to explore movement or says to the dancers "Let's try this…" - when the composer sits

down at the piano bench or starts up the computer's notation program, there is a sense of anticipation, like an intake of breath. How do artists experience subjective time at this discernible moment in measured time?

'Now' moment B is the first physically generative moment in the artistic process. It is the *during*. The painter places the paint-loaded brush at a particular point on the canvas and moves arm, wrist, fingers, and brush directionally across the surface. The brush against the surface of the canvas exerts pressure through the hand of the painter. The choreographer shifts weight onto the left leg in order to lift the right and begin to travel across the floor. The unfolding exploration of movement travels through the body of the choreographer. The composer lets the weight of the fingers drop against the smooth keys of the piano so that the little hammers inside the soundboard strike taut strings. The patterns of pitches and rhythms resonate against the delicate bones of the composer's inner ear. The first moment of action and the first moment of sensory feedback are a split second apart. What characterizes temporal perception at the 'now' moment of *during*?

'Now' moment C, when the artist looks at the canvas with the new brushstroke upon it, marks the beginning of *encounter*. It is the first moment of *reaction* following the action at moment B. The artist now has a physical form to which he or she can react, whether it is visually present, as in a painted brushstroke, or it is present as an engram of a memory, as in a line of melody, a visual picture, or a muscle memory. I use two metaphors to describe the physical form of the idea at moment C, 1) the emergence of the *independent life* of

the artwork itself, or 2) the emergence of the *voice* of the artwork itself. Both metaphors contain descriptive elements. The first recognizes the nature of the artwork as distinct from the self of the artist who made it. The artwork has begun to emerge from the subjective matrix of time that encompasses the artist's imagination, and has begun to occupy a space/time of its own. The second metaphor recognizes the art fragment's communicative power. Because so much time and/or mental energy may have been invested in the *incubation* and *impulsion* phases of the idea, the artist may be extremely sensitive to the first discernible product of the generative process. Just like a newborn, squalling lustily in the delivery room, the mark left by the brushstroke has immediate and forceful communicative power. At first the work has a very tenuous life. It can be discarded at a moment's notice; the painter can paint over an offending brushstroke; the choreographer can obliterate the movement by simply deciding to forget it; the composer can erase the notes on the page or play a different succession of pitches; the writer can crumple a sheet of paper and toss it on the floor or simply press the 'delete' key. The very uncertainty of the early life of an artwork is largely related to the loud voice it possesses the moment after its birth.

At moment C the intentionality of all preceding thought processes (up to and including Moment A) and the sensory engagement with the medium (Moment B) is immediately accompanied by the artist's response to the manifestation of the idea. The response is qualitative and evaluative. Thenceforth, imagination, action, and response are carried along side by side and/or in patterns of alternation. If the artist does decide to terminate the work

and start over, 'now' moments A, B, and C are also repeated. The earlier experience, the short life of the original artwork, becomes part of the information-gathering aspect of incubation and impulsion and part of the matrix of subjective time.

In the course of a new artwork's creation, the initial sequence of moments A, B and C – thought (impulsion), action (event), and response (encounter) – creates a prototype. Succeeding moments in the artist's process as he or she works on the emerging form will reference back to the memory of initial action. This is not to say that all moments will be temporally alike. There can be extended periods of thought between minute moments of action, or action moments can come thick and fast without any conscious intervention of expectation or response. But each new artwork begins to take on a character right away as does each new artistic process. From the first moment that the voice of the new artwork can be perceived in the physical world, a dynamic of encounter is established between the artist and the artwork.

'Now' Moment A: Preparation Meets Opportunity

In each new creative endeavor, what the artist brings to the process in the studio, at the computer, or upon the canvas, is the sum of both the intentional and the unconscious preparations he or she has made in a lifetime leading up to that moment. Artists accumulate memories and expectations through life experience. They also build memories and expectations purposefully. The cross-referencing of both kinds of activity is necessary in order to arrive at each new 'now' moment A, the precipice of action. In Chapter 3, the *matrix of subjective*

time was developed to describe the intricate and mobile network of memory and expectation. When the moment of action is imminent, the artist's temporal consciousness is at work in a specific process of association that takes him or her through the matrix of subjective time in a characteristic way.

Antonio Damasio (1999) uses the term "extended consciousness" (p. 195 f.) to name the complex functioning of the brain in processing memories and making associations. Extended consciousness orchestrates the first level of consciousness or the "core consciousness," with the concept of a surrounding world and with retrievable, coded memories of the past and expectations for the future.

> The scope of extended consciousness, at its zenith, may span the entire life of an individual, from the cradle to the future, and it can place the world beside it. On any given day, if only you let it fly, extended consciousness can make you a character in an epic novel, and, if only you use it well, it can open wide the doors to creation. (p. 195 – 196)

This complex brain functioning results in what Damasio calls an "autobiographical self" (p. 196). He goes on to define the conditions under which an autobiographical self is possible and to set out criteria for assessing its function.

> Autobiographical selves occur only in organisms endowed with a substantial memory capacity and reasoning ability, but do not require language... The autobiographical self hinges on the consistent reactivation and display of selected sets of autobiographical memories" (p. 196 - 198).

The mature artist has access to many sets of memories that relate to his or her work. Some of the engrams lead to direct memories of life experience and others lead to the learned knowledge base and/or skills that have been developed over

years of study and practice. One of the linking pathways between directly sensed life memory and purposefully learned artistic knowledge is the perception, synthesis, and manipulation of form and pattern.

All life experience is potential information. Much of this information is immediately processed as perception of pattern. When we see the waves rolling in to the shoreline, when we hear the repeated cries of the sea birds, when we feel the ebb and flow of the water washing around our ankles in the surf, we perceive pattern. It may be rhythmic, kinesthetic, visual or aural pattern. Pattern makes an impression on us because it is a way of organizing the huge volume of sensory information that is coming in at any given moment in time. Much of the training that artists receive reinforces the perception of pattern. For example, placing areas of interest on a canvas in a specific arrangement, like a triangle, helps the perceiver's eye to travel across the canvas in a particular order and rhythm. Unison dance movement on stage has a more grounding, stable effect on a viewer than simultaneous, separate movement phrases. The pattern of intervals in a major key in music has a different emotional affect than the pattern of intervals in a minor key. As artists practice their art, they develop techniques for creating pattern in their works.

The sensory input that results from repeated perception and manipulation of a medium is another part of the preparation that guides the first steps of a new art making endeavor. For example, a weaver beginning a new weaving carries with him an embodied knowledge of how to control the openness or closeness of the weave in the piece he wants to make. He has often felt the texture of the

emerging fabric in his fingers and has learned to make adjustments in the tightness of the weave by differences in muscular effort that travel from his hands and arms through his shoulders and into his torso. He may check this information with his eyes, but the process is a gestalt. After years of practice, his body 'knows' weaving. The repetition involved in practice partakes of temporal awareness in a number of ways. First of all, whenever an act is repeated it reinforces sequence and chronology. Every "again" implies a "before." In the case of the weaver, repetition of the act of weaving also creates "depth of processing" in the encoding of memory. Knowledge of weaving is absorbed through visual and kinesthetic channels and may also become linked to rhythmic patterns as the shuttle is passed from hand to hand. Every time he weaves, the weaver incorporates information about weaving more deeply and associates it more broadly within his matrix of subjective time.

The analysis of incoming bits of information is not often a linear, conscious function. It is cumulative and may be completely 'un-conscious.' For example, artists often speak of solving problems or coming up with creative ideas in their dreams (Csikszentmihalyi, 1996, p. 99). Deep synthesis of the analytic work of the brain and body is an embodied experience and occurs over measured time periods and inside the matrix of subjective time. This partly explains why child prodigies in the arts are so remarkable. They have not had the time to accumulate the perceptual information that is gained by repeated exposure either to a medium or to life experiences. Likewise, their minds have not had much time to encode and synthesize memories. Yet their work is

recognized by their cultures as partaking of artistic form in a mature and expressive way.

As an idea for a new work is taking shape during incubation and impulsion, the artist considers elements of form as part of his or her decision-making process. The ceramic artist, for example, may have ideas about shape and size, glaze colors and kiln temperatures. The novelist may have the formal elements of a particular kind of plot structure in mind. A composer may set out to write a fugue or a sonata form. Experienced artists usually have an ingrained consciousness of formal elements, learned and refined over time and through the creation of many works. The awareness of form is often carried along in a kind of 'cumulative memory' in Damasio's (1999) "autobiographical self" (p. 196). Jane Smiley explained her own consciousness and *un*consciousness of form succinctly in one of our discussions.

> …all the facets of novel writing – structure, style, scene and character and whatever else there is… when I'm writing my novel, all the things that I'm coordinating, the things I just listed for you, most of those things are being coordinated semi-consciously. If I thought about them all, simultaneously with every word, I would never write a word. The reason that they're being coordinated semi-consciously is because I'm participating in form. Let's say I decide I'm going to be a novelist at age twenty-five and I've been reading novels for fifteen years. So I've assimilated all kinds of things about narrative. Very unconsciously. And when I first start reproducing what I've assimilated of course it's very derivative. So it doesn't satisfy me. I begin casting about for new ways to say things that are different from the ways that I've assimilated. But I only do it with small variations. And then the variations get larger and then sometime when I'm in my early to mid thirties, I achieve my own style. Well, the achievement of one's own style is really only another way of saying that I begin to be mature enough to integrate all those facets fairly naturally into my own way and to be able to express it. But if I hadn't had those forms to rely on all through my teens and twenties I wouldn't have been able to achieve my own style. Those forms were

> constantly teaching me lots of different things that if I tried to learn them consciously I wouldn't have been able to learn. I couldn't learn them by rote. (Personal communication, August, 2001)

Jane carries an accumulation of past experiences into the impending creative endeavor. Some of the memories that are logged in her autobiographical self include sensory experience, her own past work, the other novels she has read, analyses of all of those novels, sometimes consciously, sometimes "semi-consciously," and a meta-analysis of the formal elements of novel-writing. But, as she says, if she carried all of these things in the front of her mind as she sat down to her computer, she would never write a word. For Jane, getting ready to write is a simple progression.

LS: Okay, lets talk about getting set up, what you do as an artist to get set up to write.
JS: I go get a diet Coke out of the refrigerator.
LS: Okay.
JS: I mean that's all.
LS: That's all?
JS: Uh-huh.
LS: Okay. And is this generally in the morning when you wake up?
JS: No. It could happen any time during the day. Sometimes I ride first. Sometimes I write first. Depends if any kids are in residence.
LS: Do you have a room that you write in?
JS: Yeah.
LS: And do you have any other sort of ritual that you do?
JS: No. No.
LS: Or have to have certain light?
JS: No.
LS: And you don't give yourself a time period necessarily to write in?
JS: No.
LS: You just go in there and start writing?
JS: Yep.
LS: Do you have around yourself anything in particular?
JS: No.
LS: Do you play music?
JS: No.
LS: Does music bother you?

JS: No.
I can write pretty much any time, unless building is going on in my house. There were a couple of days when hammering was so intense that I couldn't write. And if my bookeeper's in there with me, and she's doing stuff and talking to me I can't write everything. I can write some things but not everything. But usually I can write pretty much in any kind of chaos.
LS: Kids coming in and out.
JS: Oh yeah. Dogs barking, phone ringing.
LS: And if the phone rings, do you interrupt your writing and go talk to them?
JS: Sure.
LS: So, it's not that fragile a thing?
JS: Oh, it's not fragile at all. Otherwise I would never have earned an income. (Personal communication, August, 2001)

Jane's preparations are straightforward and direct. She has reduced the necessary preconditions for her creativity to a minimum.

Other artists, or artists in other media may have a series of steps that are necessary before they begin to physicalize their creative ideas. They accomplish these preparations using a set of autobiographical memories, a subset of which is the artist's awareness of form. These steps can be soothing, almost ritual, lead-ins to the activity of art making itself. In the following quote, Miriam Mitchell reveals some of the preparations she makes just before a new piece begins to take on its own physical reality. Earlier in the interview, Miriam spoke at length about her glazes, how she mixes them, bakes them, identifies them, deals with their idiosyncrasies and their chemical components. When I asked her what she does to get started on a new piece this was her answer.

> Typically I have an idea, either I'm going to make a bowl, or I'm going to make a cylinder, or I'm going to make a pitcher, or goblet, or whatever. And you have an idea of how much clay you want, and if you're only making one of that piece, it's not really necessary to weigh it, just eyeball

> the amount, based on the size that you want, or if you know that you've thrown other pieces a certain size and it took sixteen pounds of clay, then you can go ahead and weigh the clay. And you have to wedge the clay, get it set up, get all your tools, and then you have to have some kind of an idea of what the decorative process is going to be, too. And that's the hardest part for me. I can throw all day long and have a whole shelf of pieces sitting there, but if I'm not excited about the glaze then I don't want to, finish, so it's important to have an idea how the glaze …(*she indicates a goblet)* This is that blue [that I was describing earlier]. It's supposed to be a shocking bright blue…and it's just like a baby blue. (Personal communication, April, 2003)

In a sense, Miriam's physical manifestation of a piece of pottery begins with the mixing of her glazes. But she is not necessarily visualizing a particular finished piece when she works on the glazes. She is creating a palette that pleases her and colors whose outcomes she can predict. By working on the glazes, she is investing time in one aspect of the work so that later on, when she gets to the stage of creating the piece, her creative flow is unimpeded. She is using extended consciousness to engineer a successful creative 'now' moment. Miriam is able to do this because she knows herself. She knows her mode of working and she says that doing the "hardest part" in advance circumvents potential blocks. Her active engagement in working with her materials, what I call the *action channel*, will not lock up before the piece is finished (personal communication, April, 2003).

All of the modalities previously discussed - perception and recognition of pattern, assimilation of the knowledge base of an art form, and embodiment of practice - together help to shape the autobiographical self of the artist. Through extended consciousness, autobiographical memories are linked with operational knowledge of the surrounding world. Within the matrix of subjective time,

autobiographical memories are linked with engrams for an individual and a cultural past and with phantom engrams for possible and probable futures. When the artist arrives at 'now' moment A, just before action, all of the preparations from across his or her matrix of subjective time are united and focused toward one thing, action. Even if the artist has no conscious idea of what the outcome of the first creative session will be, all of the lifelong preparations for the process of art making create both a forward pressure toward action and a sense of support for the creative endeavor.

'Now' Moment B: Creating a Sustainable Disequilibrium

The forward pressure toward action can be described as a sense of acceleration. There are many other factors that may contribute to the acceleration of the artist *toward* the actual creation of the artwork. Some of them are economics, status, habit, pleasure, and sheer curiosity. I will refer to all of these factors as *acceleration factors* and to their cumulative force as the *acceleration vector*. The factors will vary for every artist and for every new art work. The net force of the vector is also highly variable.

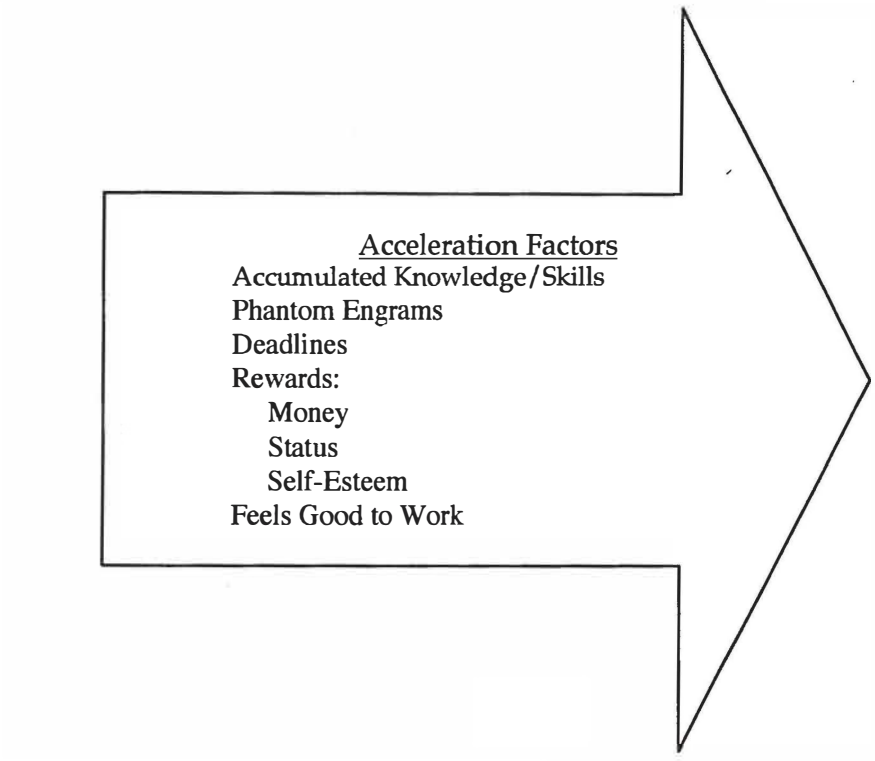


Figure 4. Acceleration vector.

It is interesting that some of the factors that may accelerate active engagement with artistic materials are the same ones that may also work against creative action. *Negative* economics, *low* status, and *dis*comfort may all be contributing factors to work avoidance. Self-critique, too, can be a force for delay. If an artist has ingrained the aesthetic credo for his or her particular medium too tightly, critical capacities may override the impulse to create. For example, a photographer may feel that it is impossible for her to produce a photograph as perfect as the last one. She may feel that her technique is not up to the latest standard. She may feel that her last several photographic essays are less inspired than her earlier work. In all of these cases, fear of failure is actively at work. Each of the factors that push the artist away from work exerts a force

that is contrary to arriving at creative action, 'now' moment B. I will refer to all of these factors as *backing away factors* and to their cumulative force as the *backing away vector*.

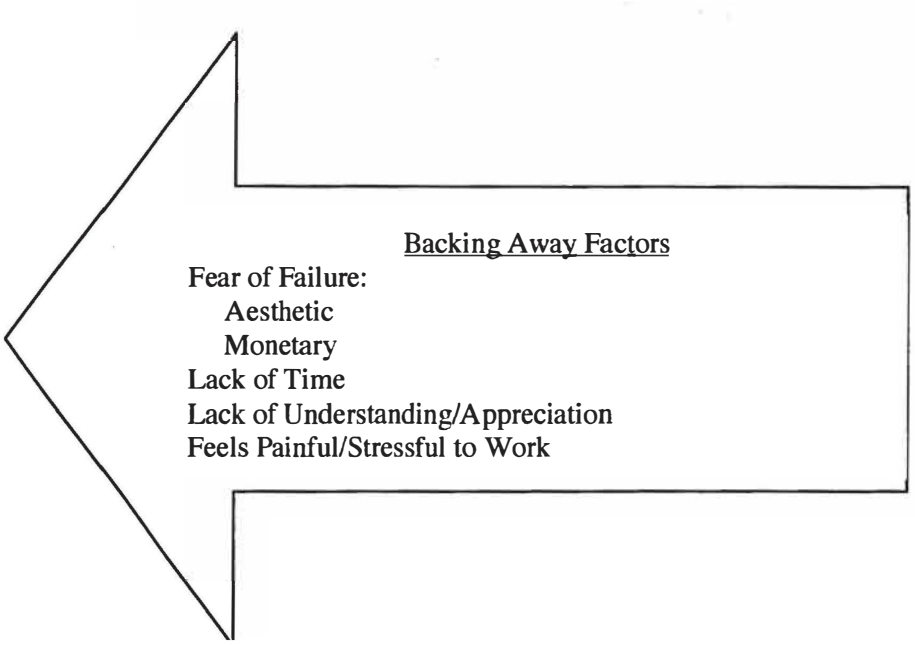


Figure 5. Backing away vector.

The list of factors in the *acceleration* and *backing away vectors* is not meant to be comprehensive. It is meant to give a sense of the forces that both promote and impede the action moment, 'now' moment B. Each artist will have many personal and unpredictable factors to add to both lists. Each new episode in an artist's creative chronology will also present variations in the factors and/or the force that each factor carries. If the artist were to add up the cumulative positive and negative forces in these two vectors and come up with a net positive, creative action should result.

"But this is only part of the story. Another force motivates us, and it is more primitive and powerful than the urge to create: the force of entropy" (Csikszentmihalyi 1996, p. 109). What Csikszentmihalyi defines as entropy is the energy-conserving impulse to relax in a comfortable spot "whenever we can get away with it" (p. 109). He states that this is a biologically built-in impulse originally designed to help us cope with the stressors of survival. In order to separate entropy as Csikszentmihalyi defines it from scientific definitions of entropy, I will refer to his "least effort imperative" (p. 110) as *stasis* and its dead weight as the *going nowhere vector*. When stasis acts upon us, we want to follow the path of least resistance; we want to bring time to a standstill at some point when/where we are reasonably comfortable and expending as little effort as possible.

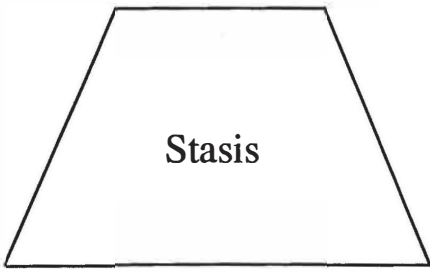


Figure 6. Going nowhere vector.

We all overcome stasis every morning that we get out of bed. In the modern world, one of the tools we use to overcome stasis on a daily basis is our reliance on an increasingly segmented and rigid construction of linear time. Nowotony (1994) traces the emergence of the modern-day fixation on linear time to the development of science during the Enlightenment. "...Every need for time

on the part of science that was met became translatable into a societal need and demand for these very time structures…from the rampant ideology of the machine age to the concrete working-time regulations invoking it…" (p. 80). The alarm clock helps many people get out of bed in the morning, and the clocks on every wall, wrist, computer screen, and automobile dashboard help them go into the office, work from 9 a. m. to 5 p. m., negotiate the freeway, relate to their children, make dinner, deal with life issues, relax, watch the 10 o'clock news, and go to bed. Artists, too, are motivated to overcome *stasis* by establishing deadlines, production schedules, and installment dates for creative material. But in some respects, artistic productivity is an effort of will that is not reinforced by societal time structures.

An example of how measured time and the artist's voyages into the matrix of subjective time may be at odds can be found in the relationship of contemplation and stasis. Often, artists must *find time* or *allow time* for contemplation above and beyond the demands and distractions of day-to-day life. To the artist, thinking about, thinking around, or thinking through an artistic idea is rarely an uninterrupted, sequential, galloping forward of thoughts that can be accomplished in an encapsulated measured time period. A direct, linear approach is usually too constrictive for the associative work of creative process (Csikszentmihalyi, 1996, p. 80 – 81). The weaving of 'on task' and 'off task' thought is part of what allows solutions to artistic problems to surface (Csikszentmihalyi, 1996, p. 242 & 253). But there is a subtle and shifting boundary between contemplation and stasis. If the artist is fortunate enough to

have unrestricted access to contemplative time, he or she then has a personal, temporal challenge of recognizing when contemplation has spilled over into stasis. The magnetic pull of *stasis* can keep the artist from working just as surely as the *backing away factors* can push him or her away.

Artists have an array of strategies for dealing with *backing away factors* and *stasis*. Many of these strategies are temporal. Temporally, the artist may be able to delay or block factors that may be in his or her *backing away vector* and to manipulate the static *going nowhere vector*. Some of these *temporal strategies* are 1) the creation of *temporal pressure*, 2) *temporal dissociation*, and 3) setting up an *internal rhythm*.

Temporal Strategies:

Temporal Pressure, Temporal Dissociation, and Internal Rhythm

In an art like dance, for example, where the choreographer's creative work may be done with and through the participation of others - her dancers, her composer, her designer, etc. - scheduling rehearsals is a strategy that sets a defined time for creativity to happen. Eluza Santos is a choreographer who has been teaching, choreographing, and producing her work in Brazil and the U.S. for 25 – 30 years. She says:

> …we deal with people's schedules. Sometimes it's me, I'm choreographing a solo for myself. If I don't have to be at a certain place at a certain time, I'll go into the studio and whenever I feel like I have done as much as I wanted to do, or I have played as much as I wanted to play with movement on that day, I'll leave the studio. But if I'm dealing with other people, I have to consider their schedules. I use a rehearsal schedule. And with a dance company, there's a rehearsal schedule. It's, "let's come into the studio at nine, whatever we get done, we get done." We all have things to do. (Personal communication, April 1995)

The choreographer makes a bargain with herself. She has made all the arrangements for the studio space and the dancers. She knows that if she comes right up to Point B – the opening of the *action channel* - and nothing happens, she is not only wasting her own time, but also other people's time and probably money as well. The choreographer shifts the perspective of a famous line from the movie *Field of Dreams*, "If you build it, they will come," to "If they come, you must build it." Essentially, the choreographer is creating *temporal pressure* to add force to the *acceleration vector*. Having a deadline in sight is another way to create *temporal pressure*. For most of the artists that I spoke to, deadlines and schedules are viewed as energizing, positive factors in their work process.

Artists may also use *temporal dissociation* to make sure they step into the *action channel*. They may schedule work times in the evenings or even in the middle of the night when they know they will not be disturbed by phone calls or responsibilities to others. In this way, they dissociate themselves from the external *temporal markers* that would alert them to the passage of measured time. Temporal markers are attention-getting triggers that mark sequenced events like breakfast, lunch and dinner, and causal relationships like hearing the mail truck and knowing that it is time to check the mail box. The temporal markers signify events that are arranged, ordered, and/or expressed through calendars, clocks and biological rhythms. Attention to temporal markers is liable to pull the artist out of flow or engagement with the work once it is started, so circumventing them in the preparation stage is an action of neutralizing *backing away factors*

through *temporal dissociation*. As we saw in the interview with Jane Smiley, this is not always necessary. Jane is able to work under quite an array of surrounding circumstances and at various times of the day. The force in her *backing away vector* is, at this point in her career, negligible. Jane has a firm hold on her response to stasis as well. She writes steadily at the rate of two pages a day or one novel every two years, never has problems with her publisher's deadlines, and basically doesn't agonize over the process at all (personal communication, August 2001).

Another temporal strategy that artists may employ is to manipulate their internal time sense. Setting up an *internal rhythm* before the work even begins is an example of an internal temporal strategy. Arranging an internal rhythm puts the artist into a particular pace and mood. John Calabrese, a visual artist whose drawing and painting career spans over thirty years, does this by playing music, not just any music, but a very specific selection of music.

> The music has to be right. Like some nights I need a certain kind of music to get me going, so I'll play it. That'll push it. When the music's right, it's right. Sometimes I can't use any music because it's interference so I'll shut it off. Usually music is a spur for me. It's a mood impetus. It's an enzyme I guess, catalyst... [the tempo is] never jangly, I never can draw with jangly unless I'm really in a certain mood. Usually I go with bluesy, or a clear voice. People who can sing, and carry a beautiful melody would work for me. This minimal music, to me that doesn't have enough melody, I can see right through that, there's not enough there. It's got to have some kind of mystery or feeling to it that I can relate to, otherwise I can't handle it. Elton John, for example. Pick him; I can't draw anything. I can tolerate him at best but I can't listen to him... See, I grew up in the East, so I can sing to Ella [Fitzgerald], and Sarah [Vaughn], and Della Reese, and all of those voice people...all the do wop groups. Of course, sometimes they get overdone because the newer ones, they don't have it, they don't have the guts, they don't have the soul feeling. Don't feel it anymore. The music of Frank Sinatra I can draw to. Mozart works for

> me. Haydn works for me. Debussy is one of my favorites. I have a lot of classical music. I have jazz…Miles Davis…I like Oscar Peterson on the piano. Stuff like that worked for me, but I've got to be in the right mood. All the standards, like "Tenderly," that stuff from the forties and fifties works good for me. (Personal communication, April 1995)

Based on the information in this quote and on my conversations with John, I would say that the music serves to decelerate his characteristic thought process. He is a rapid-fire kind of person, always thinking a mile a minute and very alert to his surroundings. The music he describes as working for him is ordered, focused, clear and smooth with enough complexity to engage him emotionally and/or intellectually. When part of his consciousness is successfully occupied, John siphons off some of his excess mental energy so that his creative action has a smoother, calmer channel. John has other temporal strategies that he uses to set up his creative process. He balances his art making with his teaching career, usually works on painting and drawing in the evening, and tries to isolate himself from the *temporal markers* of the telephone and the doorbell. He has learned all of these lessons from his autobiographical memories. The strategies enable him to engineer fruitful 'now' moments for his art.

An internal rhythm can also be chemically set. Most artists have definite ideas about the use of caffeine, either pro or con. Jane has her Diet Coke. Many artists have to start off their days with the accelerating kick of coffee. Contrary to popular mythology, none of the artists I interviewed and none of the artists I know personally ever opt for the decelerated state that is provided by alcohol or drugs when they work. There are some famous examples, like Edgar Allan Poe and Jackson Pollock, of artists who have been strongly associated with their

depressants-of-choice, opium and alcohol respectively. The depressants may have served to temporarily mask *backing away factors* like financial worries or self-esteem issues.

Combining the Vectors: Reaching the Action / Event

All of the temporal strategies we have been considering - temporal pressure, dissociation from temporal markers, and setting up internal rhythms - are designed to neutralize backing away factors and/or combat stasis. If the artist's acceleration vector generates more force than the sum of his or her backing away vector plus the going nowhere vector (stasis), the artist succeeds in reaching Point B, the action event.

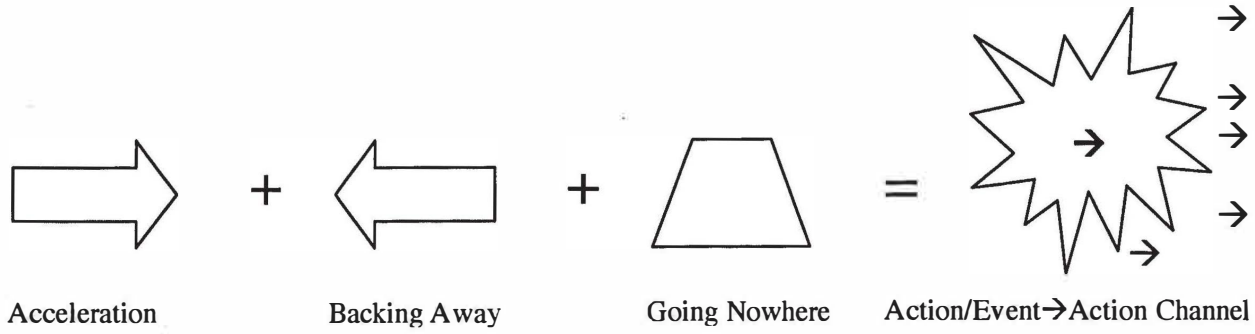


Figure 7. Creating a disequilibrium

The *action event* is the opening of the *action channel* in which the artist is physically creating the artwork. Although a similar process will have to be enacted every time the artist goes back to the artwork to continue working, there is general agreement among artists that getting started is the hardest part (Csikszentmihalyi, 1996, p. 117). The *acceleration vector* or the "Let's go" force has won out over *the backing away vector* or the "Oh, let's do something else" force

plus the weight of the *going nowhere vector* or *stasis*. Csikszentmihalyi (1996) calls this "balancing challenges and skills" (p. 116). As a result, the force in the *acceleration vector* can overcome the combined force in the other two vectors creating a *disequilibrium*, an overbalancing of energy, so that creative *impulsion* spills over into creative *action*.

At the threshold of the Point B 'now' moment, the initial action event, the artist experiences a positive energy flow; acceleration has won over the combined forces of backing away and stasis. The very next 'now' moment crosses that threshold and the potential energy of imagination transforms into the working energy of imagination plus action. Once the artwork begins to exist in the physical realm, it also begins to exist in the realm of measured time as well as in the artist's matrix of subjective time. Since the 'now' moment of first action takes a finite amount of measured time, not all of the energy accumulated in the *acceleration vector* can be expressed at once. The moment is simultaneously an opening in time and a constriction in time, much like a bottleneck. The bottleneck is caused by the disparity between the speed of imagination and the speed of action. As Edward T. Hall (1983) states in the quotation that opens this chapter, "It takes ten to fifty times longer to do things outside the body than inside" (p. 128). Because working in the physical realm has physical and temporal limitations, the *disequilibrium* is *stabilized* by the exigencies of the medium in which the artist is working. I use the term *stable disequilibrium* to describe the temporal experience of the artist at the 'now' moment of action.

At the 'now' moment of action, the artist makes a transition from working solely in the mobile, multidimensional, and vast realm of his or her matrix of subjective time into working also in a concrete world where expression of the idea must progress gradually through a finite set of materials. Inspiration and expectation must be meted out to match the rate of physical possibility instead of being tossed meteorically forward to completion as might happen in the development of a phantom engram. The artist decides, either consciously or unconsciously, what gets through the bottleneck first. This decision affects the whole cascade of decisions that follow.

At the same time that the artist is making the first of a series of concrete creative decisions, he or she is also experiencing 'now' moment B as a release into sensory engagement. Everything that has been done to engineer Point B has had the goal of opening the action channel so that the artist can interact with the materials of the medium. The sense of flowing through the channel is why some artists say "I am just a vessel for the work. It comes through me." Miriam Mitchell describes her own sensory engagement.

> I love working with my hands. Period. I love the way it feels to cook, or knead bread, or make clothing, or just anything. I'm just very sensory oriented. I mean touch, tactile. My tactile sensory qualities are very in tune. I'm also a very visual person so everything that I see visually, I experience very deeply…I just feel so connected to this planet and to nature and to beautiful living things, and animals and everything else. It's like I feel that visual experience inside. It's like having nature in your veins. (Personal communication, April, 2003)

Miriam says that the sensory satisfaction of tactile engagement is what draws her back again and again into her work. The sensation of propelling themselves and

being propelled into the next and next and next sensory moments of creativity is a state that feels very familiar to experienced artists in many media (Csikszentmihalyi, 1996, p. 119). In order to get to this state, artists have to go through preliminary creative processes. First, they may have to 'create time' outside of the realm of socially standardized patterns of time use. Second, they have to create a *stable disequilibrium* in which the force in their *acceleration vectors* is constantly spilling past the combined forces of their *backing away vectors* and *going nowhere vectors*.

'Now' Moment C: First Contact

The *voice of the artwork itself* is the first appearance of the artwork's discrete identity. That is to say, it is the first time that there is a glimmer of artistic product that the artist as well as someone other than the artist her/him self can perceive. This is the moment when the work ceases to exist solely in the imagination of the artist. Whether or not someone besides the artist is actually there to see it is not relevant. Whether or not this first glimmer survives intact in the final product is also irrelevant. The point is that the idea of the artwork is now something that can be sensuously apprehended and reacted to. Choices have been made. Something that did not exist before now exists in the world.

As the artist apprehends the first brushstroke, or word, or movement that he or she generates, the first moment of evaluative reaction occurs. The stream of creative consciousness that includes both imagination and sensory involvement incorporates yet another current, the current of self-critique. Artists have different ways of dealing with this, depending on whether self-critique falls

into their *acceleration vectors* or into their *backing away vectors*. Miriam, for example, begins to make judgments immediately about whether her piece is centered on the wheel or not (personal communication, April 2003). This is crucial to her continued success with the piece, so is part of the skills/knowledge that contribute to her *acceleration vector*. She may delay thinking about the height or ultimate shape of the vessel at first, though, and let her tactile involvement with the clay take over the greater part of her awareness. If an artist knows that he or she tends to be particularly self-critical, aesthetic judgement may be put forcibly on the mental 'back burner' until a sizeable amount of work is done. Jane Smiley, for example, says, "Every first draft is perfect. It is perfect because it exists" (personal communication, August, 2001). On the other hand, someone who makes extremely clear phantom engrams for a new work may be immediately checking and rechecking the actual appearance of each little detail of the artwork against the mental image that has been built up during incubation and impulsion. Mozart, for example, wrote a letter to the effect that he was able to compose whole symphonies in his head including all of the different instrumental parts, so that writing them down was merely a transcription of a finished mental product (in Ghiselin, 1952, p. 34 – 35). It is therefore probably true that the phantom engrams for many musical compositions vanished when Mozart died. But the distinction we are drawing here is based on the communicative potential of the artwork. Although the idea for an artwork may have a strong voice while it is still a phantom engram, this is a voice that only the

artist can hear. Once 'now' moment C is reached, the *voice of the artwork* can be heard, or seen, or both, by not only the artist, but also anyone else present.

Artists in the performing arts - dance, music, and theatre - have an additional issue in the action moment. Although the action/event creates an image that another person can see or hear, unless this image is recorded, it vanishes immediately. A playwright, for example, may be in the theatre with a group of actors, creating material from an improvisation that she sets up with them. The structures of the improvisations may be set in advance, but the actual dialog and stage movement that the actors perform in the improvised session do not come from a script. The moment they are performed, they exist only as memories in the minds of the actors and the playwright.

Choreographers and composers, too, may work from improvisation. In order to remember what they have just danced or played they have several options. They can do some of the work and then go back and re-create it. When this technique is used, an additional kind of attention is involved in the process right from the start of the action/event. Imagination, sensory involvement, and self-critique are accompanied by what I will call a *documentary stream.* The *documentary stream* is a splitting of attention so that a different function can be accommodated. The choreographer's or the composer's *documentary stream* notes and preserves the movement or the music as it is being created so that it can be replayed. This can be done through visual, aural, kinesthetic, or spatial channels, or some combination of them depending on the preferences of the artist and the exigencies of the form. A highly verbal artist may even create a narrative as he

or she goes along. For example, a choreographer may think, "I am sauntering into the upstage right corner. Now, I whip around on the right foot and face downstage in a crouch, right arm extended overhead, left arm dropped to the floor." The concept of the *documentary stream* goes back to Schacter's (1996) idea of "depth of processing." In order to encode memory more deeply, it must be linked and associated with other existing systems and memories as it is processed. Some of the attention is split away from sensory involvement in the creative act to create a retrievable engram. Developing a *documentary stream* is a skill that can be learned through repetition. Many artists are quite skilled at remembering what they do as they go along and the attention split doesn't seem to interfere with their unfolding, creating process.

For other artists, the attention split is too distracting. The most traditional intermediary step in creating and simultaneously remembering is to have some help. For example, the choreographer may dance a movement sequence and his dancers may be moving behind him, or just watching, or both dancing and watching. In the specialized vocabulary of dance, their job is to "pick up" the movement. One of the primary functions of training for the dancer is to refine the skill of replication. The dancer sees, moves, and remembers. When the choreographer turns around and says, "What did I just do?" (this is a commonly heard question), the skilled dancer has an immediate, accurate, physical response.

A third creative process choice is technology. Musicians can turn on a tape recorder as they play. Choreographers and playwrights can turn on a video

camera to capture evanescent moments of creativity. In this way, they can stay inside the sensory modality of the creative action/event longer, then go back and encounter the new material from a more detached, analytical perspective. The advantage for the 'now' moment of creativity is that the artist can 'lose himself or herself' in the creative process and still find the work later. Another advantage is that the creative sessions can be preserved and revisited as a mine of ideas later on in the construction of the art work or in the creation of future art works.

Regardless of which path the performing artist chooses, the artwork, like the work of visual and literary artists, has a voice the moment it takes on any physical form. Whether or not someone besides the artist is actually there to perceive it is not relevant; the phantom engram has been transformed into an encoded memory in the mind of the artist. In the very instant after the action/event has begun, a memory, a product, a sliver of an artwork re-presents itself to the artist as an entity that she or he can both work upon and that can work upon him or her.

Summary

During the incubation of an idea, the artist travels freely forward and backward through the matrix of subjective time, picking up bits of information from the past and creating phantom engrams for future work. As an idea becomes more developed, more interesting, more achievable, or more pressing through a self-imposed or external deadline, it moves from the *realm of possibility* into the *zone of probability*, from *incubation* to *impulsion*. The focus of the artist

shifts from the *what* of the idea to the *how* of the idea. How can this idea become a reality?

The answer to *how* is deeply embedded in the artist's autobiographical memories. These memories include skills learned through years of repetition and concepts of pattern learned through sensory perception and through study of artistic theories and principles. Through *extended consciousness* (Damasio 1999) the artist gathers the threads of all of these memories and is able to manipulate them in the panorama of his or her world. Before the artist can create the artwork, he or she must first create the conditions that support the work. There are conditions that are part of the external world and conditions that are part of the artist's internal state of readiness. The two are interdependent.

The forces that work both toward and away from the creative act can be represented as vectors. The *acceleration vector* is comprised of all of the conditions that support the work, the *backing away vector* is comprised of all the conditions that oppose the work, and the *going nowhere vector* is simply stasis. The artist must create a state of overbalance or *disequilibrium* so that the force in the *acceleration vector* exceeds the combination of forces in the *backing away vector* plus stasis (Figure 7, p. 107). Artists have many *temporal strategies* for making sure this disequilibrium occurs including *temporal pressure, dissociation from temporal markers,* and setting up *internal rhythms*. In essence, the artist creates a location in space/time that is conducive to work and engineers a succession of action/event 'now' moments.

The moment that the *voice of the artwork* begins to emerge as an independent form that can be sensuously apprehended and reacted to, the artist creates other kinds of balance. The pressure from the *acceleration vector* is balanced with the moment-to-moment reality of working in a concrete world. This balance creates a *stable disequilibrium* that helps to regulate the flow between the imaginative and material worlds of creativity. Another kind of balance the artist creates is between the voice of self-critique that wells up from autobiographical memory and the drive to stay in the action channel and 'not look back.' The balance between sensory involvement and remembering sequence and pattern is a third issue that may be resolved by introducing a *documentary current*. In performing arts, the *documentary current* allocates attention to documenting the work as it emerges, especially when it is generated improvisationally. All three of these kinds of balance affect the temporal experience of the creative process. As the artist continues to work on the idea, he or she is constantly making decisions both consciously and unconsciously about all three of these balancing acts, continuing to engineer 'now' moments in highly personalized ways.

Mihaly Csikszentmihalyi said that one of the characteristics of highly creative people is their ability to entertain a wide array of possibilities and to discard their own bad ideas quickly (lecture at Iowa State University, October 2001). Continual decision-making pushes the creative idea into existence. This applies to measuring chemical components of pottery glazes, translating multiple visions of dancers into actual physical shapes and movement, or directing and

observing as actors improvise scenes. Choice is the growth medium of an artwork while the artist is the midwife of its birth. The first whisper of the voice of the artwork itself is a culmination of many journeys backward and forward in time, a tacking between memory and expectation. In all of the cases I studied, the *rhythm* of the decision-making is dictated to a large degree by the materials themselves. In the next chapter, we will explore the rhythmic characteristics of art making as the artist enters into dialogue with the *voice of the artwork itself*.

CHAPTER V

THE MEDIUM SETS A PACE: THE RHYTHM OF MAKING ART

> *When we take a general view of the wonderful stream of our consciousness, what strikes us first is the different pace of its parts. Like a bird's life, it seems to be an alternation of flights and perchings.*
> (William James, *Psychology: Briefer Course*, p. 159)

Encounter → entrainment → engagement. This sequence describes the deepening progression of an artist's involvement in an artmaking experience. We define *encounter* as the meeting between the artist and the physical form of the artwork. The 'now' moment of the first encounter in a new artmaking process occurs at the opening of the action channel, when the artist begins to actualize or 'play with' an idea in the realm of measurable time and space as well as in the matrix of subjective time. Although the imagination of the artist is continually at work, imagination is now linked to action through a stream of creative 'now' moments.

The artist's continued interaction with the artistic medium may result in a synchronizing of his or her biological rhythms. When this synchrony draws the artist deeply into artistic process, we say that *entrainment* has occurred (Lex, 1979, p. 120). *Entrainment* is triggered by environmental stimuli, in this case the medium/materials of the creative process, and is a potential and desirable result of encounter. Without entrainment, creative process tends to be characterized by many *temporal markers.* A temporal marker is anything that calls the attention of the artist away from the work at hand and toward the passage of time. When the

artist is first *entrained* and then *engaged* in the artmaking process, temporal markers tend to diminish and, although measurable time is passing during the creative act, the perception of measurable time passing is deemphasized. Mihalyi Csikszentmihaly (1996) states, "...the creative process begins to hum, and all other concerns are temporarily shelved in the deep involvement in the activity" (p. 118). The diminishing of temporal markers is one signal that the artist is entering what Csikszentmihalyi calls *flow state*. Flow state is Mihaly Csikszentmihalyi's (1990) psychological term for all kinds of positive, active engagement experiences that challenge the individual and result in personal growth (Chapter 4). Artistic process, when it results in entrainment and creative/aesthetic engagement, is a subset of flow state.

Entrainment can be regarded as a gateway. The action/imagination interplay of artmaking transports the artist through entrainment into *creative/aesthetic engagement.* The term *creative/aesthetic engagement* denotes an active, hands-on, in-the-middle-of things artistic experience during which many things are happening at once. The artist is making the artwork, referring to phantom engrams for the work imaginatively, and creating a balance between self-critique and continued productivity. The continuation of the flow state that has begun during entrainment is characteristic of creative/aesthetic engagement. A kind of hyper-awareness that Alfred Schutz calls a state of "wide-awakeness" (in Greene, 1978) accompanies the flow state. Wide-awakeness contributes to the "optimal experience" (Csikszentmihalyi's term) of flow state by layering awareness of world with awareness of self. This double awareness is central to

the 'conversation' that occurs between artist and artwork during creative/aesthetic engagement.

The activity of creative/aesthetic engagement is what Penelope Hanstein (2003) calls "dialoguing with the emerging form" (p. 13) Hanstein defines the dialogue as a "...process of negotiating and responding to change in the context of the emerging form. They [the artists] are both shaping, and being shaped by, the thing they are creating." As he or she works in the action channel, the artist contributes to the physical product that is the artwork while the *voice of the artwork* speaks back. This dialogue between the artist and the artwork begins the moment after encounter and continues throughout the artistic process resulting in a series of *feedback loops*. *Feedback loops* are phases of creative work that occur in the thought channel and the action channel sequentially and/or simultaneously. Feedback loops occur throughout a single artmaking session and from session to session. Each time the physical reality – the shape, color, sequence, tonality, arrangement, etc. – of the emerging artwork changes, it presents new information to the artist who cycles the fresh sensory image back into his or her imagination. The body of this chapter is an exploration of 1) the changing components of the 'now' moments of creative action, and 2) the temporal character of feedback loops. What is the interplay between thought and action, between information out and information in? How does the medium in which the artist works affect the character of the artist/ artwork dialogue?

The Imaginative Stream

Writing in the late 1800s, William James (1992) has given us the concept of the "stream of consciousness" to refer to the depth of the process of thinking. The metaphor is apt because it connotes an ongoing, dimensional process rather than a sequence of discrete 'now' moments strung together like beads on a wire or like points on a one-dimensional timeline. I will use the stream of consciousness as a baseline metaphor and magnify the various currents that may contribute to the composition of the stream during artistic process. Margery Franklin (1989) has also used this approach in describing Melissa Zink's "work stream." For Franklin, the work stream is a river of thought and action that is a confluence of the many tributary components of Zink's past. The distinction between Franklin's use of the "stream" metaphor and the discussion that follows here is that this investigation is concerned with the process of the artmaking rather than the historical precedent for the work. Similar conceptual language may serve both vantage points. In focusing on process, we will look deeply into the stream of the artist's consciousness to describe its temporal components and to note changes that occur over time as the artwork takes shape.

When the artist is in the incubation phase of artmaking, he or she is working in the *imaginative stream*, a broad and deep resource that is constantly available. As discussed in previous chapters, the artist's temporal transportation system through this stream is the matrix of subjective time. Each artist has characteristic ways of being in the *imaginative stream* and of using the matrix of subjective time to create, retrieve, reshape and select ideas. Some of these

characteristic ways of being have temporal components like *repetition*, *duration*, *tempo* and *rhythm*. For example an artist may revisit an idea for an artwork over and over again through a period of years. In the following quotation, Jane Smiley is discussing Virginia Woolf's incubation process for *To the Lighthouse*. Through this discussion, we can see *To the Lighthouse* (first published in 1927) as a product of repeated imaginings before the actual writing of the book began. Woolf's imaginings concern both the form of the book – subjective experience – and the subject of the book – time passing. Woolf's eventual writing of *To the Lighthouse* did not exhaust her ideas about either subjective experience or time, but rather spawned two more novels that continued her interests over a period of at least ten years. We can see both *repetition* and *duration* at work in Woolf's incubation process.

> Virginia Woolf had several things on her agenda throughout her professional life. One of them was that she really did want to write a novel that was more authentically based in individual experience. She wanted to write a form of a novel about subjectivity, and a lot of it was about how a person subjectively experiences time…she goes in and out of various consciousnesses, and each consciousness experiences time and space relationships slightly differently. And that was very new, she was one of the first people to try and do that…Another Virginia Woolf book called *The Waves* [1931] and also *The Years* [1937] are about the subjective experience of time. (Jane Smiley, Personal communication, July 2001)

Woolf chose to explore one set of ideas repeatedly in various artworks. The repetition and duration in Woolf's incubation process is reflected in her output. This has been called "digging one hole deeply" as opposed to "digging many holes" (Choreographic Process Class, Penelope Hanstein, Professor, Spring 1994).

Repeated visits to the phantom engram of a creative idea and/or the extended duration of an artist's concern with an idea in his or her imaginative stream may result in a single artwork rather than a series. Or a single artwork may be the capstone for a variety of memories and expectations that the artist has visited over the years but does not even realize are connected until the artmaking is in progress. For example, the film *Schindler's List* (1993) was a complete stylistic and thematic departure for Steven Spielberg although it connected to personal and social concerns that had been brewing in his imaginative stream for many years before he actually began to work on the project. He says in a recent interview (2003) that making the movie "changed the course of [his] entire life" because it was "a journey into [his] own heart" (Spielberg, filmed interview, 2003). Spielberg knew what the content and the form of the movie would be before he started, but he could not fathom the way that it would link his memories, his expectations, his assumptions, his artistic process, and his future actions together.

Although all artists approach artmaking with a personal set of memories and expectations that affect their work, an artist may enter the action channel without consciously referring to a preconceived idea of what the form or subject of a creative endeavor will eventually be. In this case, the incubation phase of the work may contain only the briefest and most infrequent visits to the imaginative stream. In collaborative work, the purpose of this method may be to keep the work fresh and/or to allow for greater input by the collaborators. Rebecca Norwood (2004) observed and interviewed four choreographers as they

set new pieces on dancers. Each of the choreographers worked collaboratively with his or her performers to some extent, but there was variation in the kinds of expectation that each had when approaching the rehearsal process. The most open-ended of the four, Andee Scott, worked by providing an impetus for her dancers and then letting them generate movement improvisationally.

> Andee's performers had the most freedom in the construction and interpretation of movement material for the work…when Andee wanted to create a new phrase [of movement], she often gave her dancers one or two small tools, such as a list of words or a series of shapes, with which to construct a small movement phrase. She frequently completed the same exercise herself while the dancers were working. Then they would all look at the movement and Andee would find ways to merge the three phrases into one…Essentially, Andee saw her dancers as co-choreographers because the transformation she sought could only happen through the conscious intent of the performer to interact with the movement in a personal and individual way. (p. 74 – 75)

Norwood does not say when or how long it took Andee to construct her lists of words or her series of shapes. The sense of the narrative, though, is that the idea phase of Andee's artistic process was largely congruent with her entry into the action channel with the dancers rather than preceding action by means of an extended or oft-visited incubation phase.

There is also a large range in potential *tempos* and *rhythms* that characterize artistic incubation. Everything from the slow, arrhythmic "mental meandering, mind wandering" described by Donald Campbell (Csikszentmihalyi, 1996, p. 99) to the lightning strike of "the 'Aha!' experience" (Csikszentmihalyi, p. 103) can be characteristic of an artist's temporal experience during his or her negotiation of the imaginative stream. In the same way that the artist is entrained in the artmaking process through the interaction with his or

her materials, the artist can also be *imaginatively entrained* in the incubation of an artistic idea. Entrainment is generally triggered by environmental stimuli. In the active experience of artmaking, the environmental stimulus is provided by the materials of the artistic medium. In the imaginative stream, entrainment is often triggered by a repeated activity like gardening, walking, driving, or playing solitaire (Csikszentmihalyi, p. 99) that also tends to synchronize biological rhythms and hence, "draw in" the artist's consciousness and "transport through flow" (Webster's definition #2 of entrainment) his or her imaginative work.

Every artist is different as is every new process of artistic ideation, so the activity the artist selects to trigger imaginative entrainment may depend greatly on what tempo or rhythm best facilitates his or her work in the imaginative stream at that particular time. Sculptor Henry Moore describes two different tempos of imaginative work that were stimulated by walking on the beach.

> Sometimes, for several years running, I have been to the same part of the sea-shore – but each year a new shape of pebble has caught my eye, which the year before, though it was there in hundreds, I never saw. Out of the millions of pebbles passed in walking along the shore, I choose out to see with excitement only those which fit my existing form interest at the time. A different thing happens if I sit down and examine a handful one by one. I may then extend my form experience more by giving my mind time to become conditioned to a new shape. (in Ghiselin, 1952, p. 70)

Moore uses the activity of walking and the environmental stimulus of the beach to become imaginatively entrained in exploring concepts of shape. He describes his excitement, usually an indicator of a faster pace of ideation. He then sits down and uses the activity of sifting and sorting by hand to transform these concepts. A slower tempo is associated with the second activity. Both kinds of

rhythmic activity, walking and sorting, and both tempos of ideation, lively and moderate, are useful in Moore's incubation process.

As mentioned in the previous chapter, self-critique also has an effect on the pace of work in the imaginative stream. Csikszentmihalyi (1996) describes self-critique as a combination of "the internalized criteria of the domain, and the internalized opinion of the field" (p. 80) both of which are at work in the artist's imagination along with the artist's "life context" (Norwood, 2004, p. 69) and his or her cultural background. In the case of self-critique, *sequencing* can be key. If self-critique comes too soon in the incubation process, ideas can be squelched before they have a chance to reveal their full potential. If it comes too late, the artist may feel that he or she has wasted the imaginative time spent on incubating an idea that is of questionable merit. Self-critique can be described as an ongoing current in the imaginative stream. It is present to varying degrees when the work is in the incubation phase as a kind of phantom feedback looping and it continues as the work passes into the action channel.

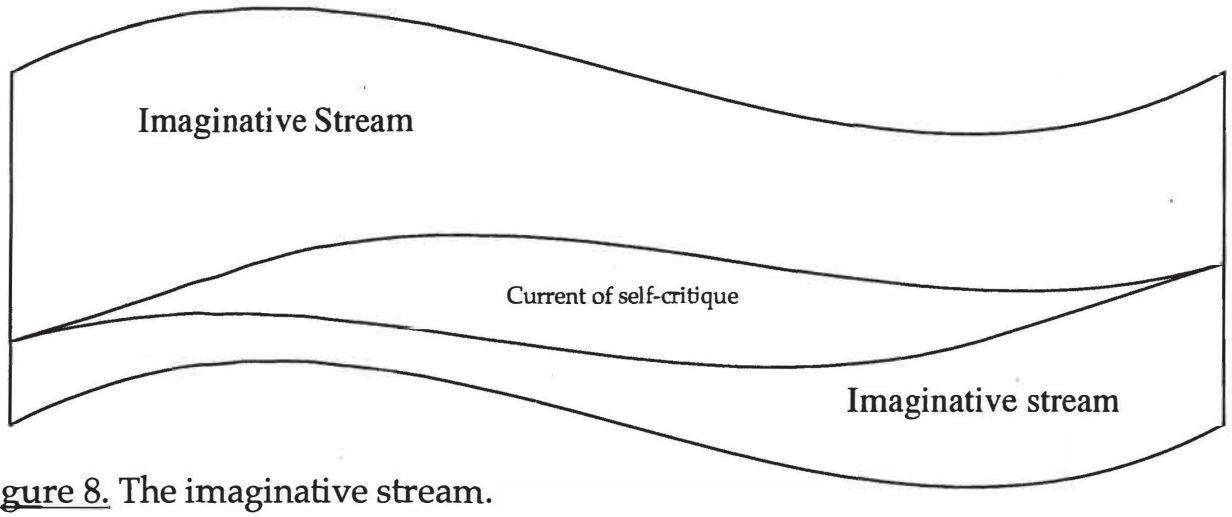


Figure 8. The imaginative stream.

The imaginative stream, Figure 8, encompasses all of the artist's thinking about the artwork, both conscious and unconscious. Because of the properties of its transportation system, the matrix of subjective time, the imaginative stream includes engrams for memories of past events and phantom engrams for the concepts of future possibilities. Inside the imaginative stream, a world of temporal currents moves artistic ideas along, stopping and starting them, repeating and extending them in duration, rushing them along in cascades of images, slowly unveiling them in seamless evolutions, or popping them out in single bursts of creative thought. The current of self-critique also runs inside the imaginative stream affecting the temporal characteristics of ideation in various ways. As the artist moves from incubation to impulsion to encounter, the imaginative stream opens to accommodate the action channel.

Entering the Action Channel: The Sensory Current

The moment the artist enters into the act of making the artwork, he or she adds another frame of reference to his or her consciousness. This is the sensory involvement with the medium. A sound is produced; a color is selected; a sentence is written; a movement is performed. The moment after that the artist adds yet another frame of reference, perception, because a fragment of the artwork now exists that can be perceived. "By 'perception' we mean the concerted activity of *all* the body's senses as they function and flourish together... a dynamic participation between [the] body and things" (David Abram, 1996, p. 59 - 62). Not only is the sound heard, the color seen, the sentence read and the movement kinesthetically felt, but also the pressure of the piano key

is felt, the smell of the paint is inhaled, the way the words sound is imagined, and the way the movement looks is apprehended. So the sensory current that is activated when the artist begins the artwork is actually a bifurcated current, action and perception in nearly instantaneous sequence and all sensory modalities participating in varying degrees.

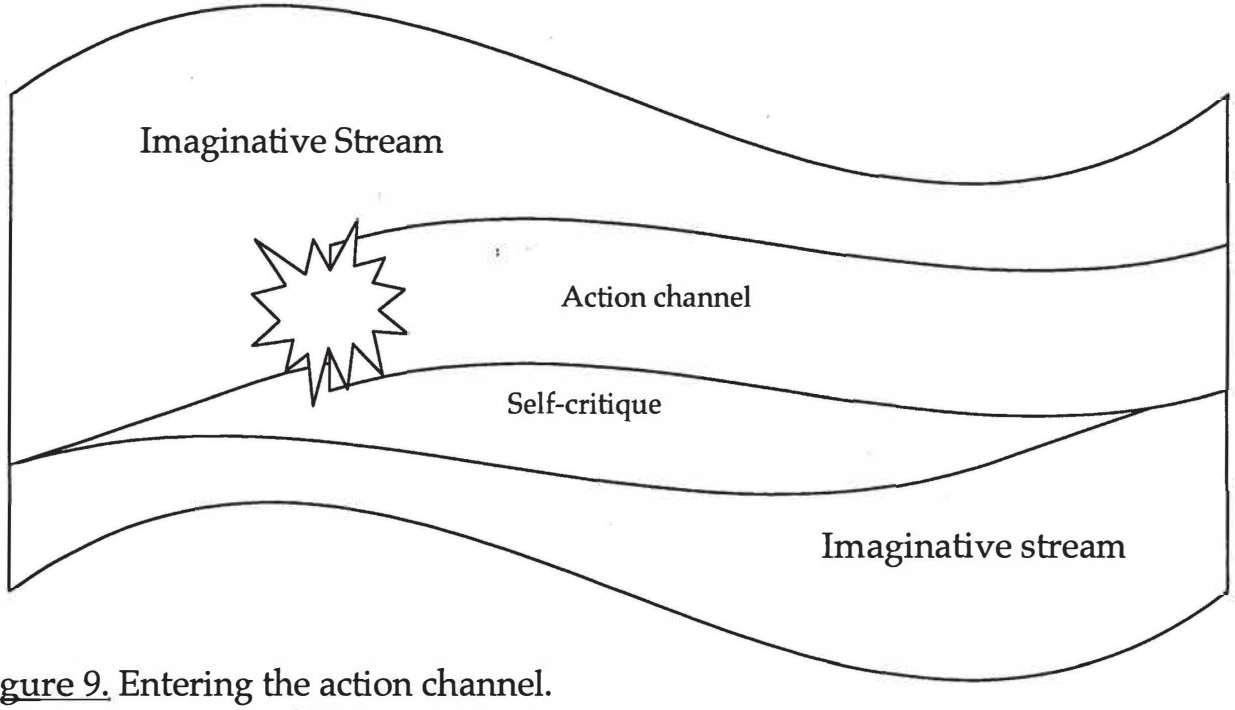


Figure 9. Entering the action channel.

The current of self-critique, already a part of the imaginative stream, now has an additional focus, the art fragment. Part of the current of self-critique enters into and mixes with the sensory current because the idea is no longer contained only in memory and expectation. It has begun to have an *independent life* which can be apprehended sensorily. As Eliot Eisner (1982) states, "experiencing the qualities of sound, of touch, of taste requires attention, selection, comparison, and judgment" (p. 37). The degree to which self-critique

participates in the process of artmaking varies. As in incubation, too much self-critique too soon in the process can be disastrous, effectively putting the artist at war with the brand-new voice of the artwork itself. But self-critique is already present in the imaginative stream, so when the artist reaches the stage of *encounter*, self-critique is ready and waiting to meet the artwork on some level. The way that the artist experiences and regulates self-critique during the process of artmaking is part of the rhythm of the feedback loop.

Jane Smiley has studied the life and work of Charles Dickens intensively. In the following quotation, Jane first describes the kind of frantic pace that characterized Dickens' process of leaping forward into the possible futures of his characters. He critiques himself in front of a mirror, then dashes back to his writing table. Then Smiley offers the contrast of her own *andante* tempo, the way that she lets ideas flow through her rather than pursuing them actively.

> Charles Dickens' daughter said at one time she was sick and convalescing in his study. So she saw him for a week while he was composing. And he would run around the room. He'd run over to the mirror and he'd stare into the mirror and he'd say things and make facial expressions and gestures and then he'd run back and he'd write things down. Then he'd run over to the mirror again and kind of act out all the parts and watch himself.
>
> So, he wrote a lot. He wrote very quickly and probably was in that state of flow very often. Some people would say that would be an indication of what it felt like to him. It felt like characters entering him and inhabiting him.
>
> Well, those two things don't quite get at what it feels like to me. It feels like, more like, [pause] it feels more like just things naturally occurring. Whatever they are in the book. They have a kind of natural inevitability. And you're just sort of admiring or marveling at their inevitability. And that goes all the way from both the largest things like

> the plot point and resolution to the smallest things like particular word choice. (Jane Smiley, Personal communication, July, 2001)

In Dickens' case, creating and critiquing ran on a visible, fast-paced, alternating current: invent/evaluate/record. For Jane, the pace of self-critique is in sync with both the pace of the creating and with the pace of the events she is describing, all three together in a calmer, more fluid tempo.

Working on his detailed pencil drawings, John Calabrese takes Csikszentmihalyi's (1996) "internalized criteria of the domain… internalized opinion of the field" to heart. This produces a working rhythm that contains many parts critique per part action and a tempo that John has described as "painstaking."

> [When I] approach my drawings, I'm so cautious. I treat them so much like precious idols that I can't fail too much because I already have the mind frame that it's going to be perfect. See? Which means, that I'm too cautious… I'm already starting out with a strong conservative or cautious approach rather than a real reckless kind of abandon that's governed by accident. I tend to work more classically I guess, take more slight variations on it. (Personal communication, April, 1995)

John's description shows yet a third working tempo. If we were describing the three artists' characteristic speeds of artmaking in musical terms, we might say that Dickens worked in a *presto*, or very quick tempo, Jane works in an *andante*, or "walking," moderate tempo, and John works in a *grave*, or deliberate, slow tempo. In these three examples, the tempo is shown in relationship to the process of self-critique.

Durational Levels of Feedback Loops

The interconnectedness of self-critique and the action of artmaking is described by Rebecca Norwood (2004) in relation to the choreographic process. In her discussion of the "sense of rightness," Norwood posits a simultaneity of knowing and doing rather than an oscillation between judgment and action.

> The guiding principle behind the epistemology of 'rightness' is the fact that *knowing* and *doing* are inseparable… At the beginning, this sense exists almost exclusively in the choreographer's mind. It is in the *act* of translating those ideas to the lived body of the performer that the choreographer begins to *know* what the work will eventually be... Until the completion of the work, 'rightness' exists as an ideal, a potential that the choreographer is attempting to reach, but at the same time it 'speaks' to the choreographer in a way that dictates moment-to-moment decision-making. (p. 169 – 170)

I believe that Norwood here is describing the "dynamic participation" (Abrams, 1996) of the body in an action/perception/evaluation gestalt. This point of view is particularly *à propos* in the medium of dance where the primary materials of creative action are the bodies of the dancer(s) and choreographer.

Earlier in her narrative, Norwood describes how self-critique becomes especially apparent *between* creative sessions. The choreographer works with the dancer(s), goes away, and comes back to the next rehearsal with new ways to alter the movement and/or music so that the emerging dance comes closer to the ideal of rightness that she describes above. Norwood chronicles Sean Curran's working process with Mary Williford-Shade; "By the next day, however, Sean's vision for the work had evolved drastically and he and Mary worked with an entirely different piece of music" (p. 119). In terms of Figure 9, the choreographer spent the intervening time between rehearsals working in the

imaginative stream and in the current of self-critique before returning to the dancer and the action of making new movement decisions. This kind of pattern is a feedback loop of a longer *duration* than the "moment-to-moment decision making" that characterizes work within a single creative session.

Several levels can be differentiated to describe the duration of feedback loops. The first level, the *momentary level*, is the level of shortest duration. We can associate it with the 'now' moments of creative action described in Chapter 4. This is the level at which action, perception, and evaluation are sensorily connected in any given instant of artmaking. Whether we perceive these elements as simultaneous the way that Norwood does, or occurring in patterns of miniscule alternations, the primary operational modality is sensory.

The second level, the *session level*, describes the duration of a creative session. An artmaking session can cover any amount of measured time from several minutes to many hours. Throughout a creative session, a discernible temporal dynamic can be observed. This is the level explored above in the working processes of Charles Dickens, Jane Smiley, and John Calabrese. At the *session level*, input and output are also largely sensory, although the artist may also stop for periods of time to inhabit or refer to the imaginative stream.

The third level, the *project level*, describes the artmaking process from the incubation of the idea through to the resolution of the particular endeavor and the release of the new artwork into the world-at-large. Feedback looping at the *project level* moves from session to session, alternating between work in the imaginative stream when the artist is at a physical remove from the artmaking

and the active creative sessions themselves. The duration of *project level* feedback looping can be any time frame from less than an hour to many years. Norwood's description of Sean Curran's choreographic process is an example of *project level* feedback looping.

The fourth level, the *life level*, describes the way the artist continues to form and reform aesthetics while creating the series of artworks that compose his or her creative life history. Margery Franklin's (1989) history of Melissa Zink's process and product illustrates the *life level* of feedback looping. The ongoing repercussions of Spielberg's work on *Schindler's List* that surfaced in *Amistad*, *Saving Private Ryan* and in Spielberg's creation of the Shoah Foundation are revelations of the *life level* of feedback looping. Art historians can create even more levels as they fit the work of an individual artist or of groups of artists, like the Bournonville style of ballet, the Bauhaus style of art and architecture, or the Baroque style of music and visual design, into the greater scheme of cultural critique and artistic action.

The Medium Sets a Pace

Inside the defined duration of each level of feedback looping is a periodicity between action, perception, self-critique, the demands of the artistic medium, and the *documentary stream* [or *current*]. As James (1992) puts it, "...an alternation of flights and perchings" occurs within and between each of the currents that compose the action channel and the surrounding imaginative stream. The demands of each artistic medium set up specific temporal rhythms by the very nature of the materials involved. For example, an artist's physical

location - the size, shape, temperature, etc. - of the workspace - all create a particular habitation in which the artist works. The habitation and the medium, in turn, require a particular size of kinesphere – stretching out an arm to paint or pressing both hands in to shape clay, looking across a landscape to gauge an architectural site or looking through a welder's mask into the flame of a torch, moving the fingers over five taut violin strings or propelling the whole body vigorously through the air. These varied uses of kinesphere have temporal implications for feedback looping at the momentary level, the session level, the project level, and the life level.

The two examples that follow come from direct observations of two different artists at work (April 2003). In each case, both the workspace/ kinesphere and the demands of the particular medium shaped the temporal characteristics of feedback looping at the *momentary* and *session levels*. When I observed them, each of the artists was working on a particular project. Miriam Mitchell was creating a series of clay garden lanterns. Keith Fleming was creating a sound score for a dance by recording and mixing instrumental and vocal sound tracks.

Miriam Mitchell is a potter working in a small to medium sized studio attached to her home. Her studio is filled with worktables, a sink, her wheel, and shelves for finished pieces. It takes her between two and four steps to travel from one working location to another. Keith Fleming is a composer whose workspace is a large room at Texas Woman's University. His studio is filled with sound recording, mixing, and computer equipment, several keyboards,

percussion instruments, video monitors, and racks of cables, discs and tapes. Keith uses a rolling chair to facilitate his constant transitions from work station to work station. The temporal contrasts between the two are marked as they move through their spaces and work upon their materials.

Miriam spends most of her time seated at her wheel. Her steps from workspace to workspace occur in infrequent bursts of activity. The steps seem cramped, in truncated little rhythms to negotiate the irregular open spaces between her tables and the protruding presence of the wheel. Keith zooms easily across the linoleum in his chair. Although Keith also may spend considerable time in one location, his time and attention are more evenly divided between the pieces of equipment that he uses to record and then alter and assemble soundtracks.

When Miriam and Keith are working at the *momentary level* in a single location, the temporal characteristics are reversed. Miriam establishes a smooth, calm, rhythmic alternation between pushing the clay forcibly between her hands as it spins on the wheel and backing off slightly to regard the emerging form. The rhythm of the feedback loop is apparent and fairly regular – about four parts engagement with the material to one part self-critique. Miriam can keep this up for an extended duration. Keith has intense, short interactions with equipment followed by periods of waiting to see if the desired result has been achieved. The ratio of engagement to waiting varies from about one-to-one to one-to-ten. Self-critique is put on hold until the equipment's processing period is finished. This is especially true of the computer music-editing program. Although Keith can

also keep up his feedback looping for an extended duration (both artists worked for three hours at a stretch), their rhythmic structures are completely different.

Miriam must also accommodate the idiosyncratic rhythms of her equipment. The spinning of the wheel adds even more temporal sensation to her experience. There is constant, low, mechanical noise from the motor. There are the ridged patterns on the foot-plate that spin regularly by the outer edges of Miriam's downward gaze. The rotation itself has a periodicity, a tempo that is hypnotic. Keith's equipment, on the other hand, requires constant attention and adjustment. The editing program provides so many possibilities that an ongoing discovery and refining of techniques is part of the experience. Tiny little details must be attended to. 0.076 seconds must be located on the track, measured, edited out, and replaced in another spot so that the downbeat on track 7 matches the downbeat on track 8.

Miriam's primary sensory modalities are kinesthetic and visual. As she prepares the clay for the wheel, the feedback through the skin of Miriam's fingers, up her arms, and into the muscles in her back is visible as she works. This kinesthetic feedback gives her constant information about the readiness of the clay for the next step. She rolls it in a ball and spanks it as she walks from the table to the wheel. Right hand – spank, spank, spank, spank, spank. Shift to the left – spank, spank, spank, spank. Shift again and repeat. *Repetition* and *sensory feedback* inform each transition. Keith's primary sensory modalities are aural and visual. The computer program makes measured time into a visual obsession. By changing the visual representation of the sound on the computer monitor, Keith

adapts track after track of vocal variations– slowing them down, changing the volume, exaggerating or diminishing highs and lows, isolating particular vocal sounds. Keith constantly enters the *documentary stream* by saving and reviewing work that has been done, both before and after it has been altered. Keith's aural perceptions are delayed until his visual work is transacted and the equipment's work is also done. Then his aural skills are used as checks and balances and as the arbiter of his *self-critique.*

The first *temporal marker* that Miriam obviously notes is the position of the shadows as they fall across her yard through the open door. Up to this moment, there is no indication of her awareness of measured time, no clock, no music, no water, food, or bathroom breaks. Keith's awareness of temporal markers is more punctuated. There are several cigarette and bathroom breaks, but they don't seem to pull him out of *entrainment*. Through his comments when he returns, it seems that he has been inhabiting the *imaginative stream* constantly for the duration of the breaks. The first *temporal marker* that pulls him out of *creative/aesthetic engagement* is when he looks at me and says, "I'm hungry!" For both Miriam and Keith, the solid recognition of a temporal marker signals that the creative session is coming to a close.

Keith flourishes in an environment of surprise and discovery. Although all parts of the process seem to trigger *entrainment*, he seems to find his deepest *creative/aesthetic engagment* when an aural result exceeds or changes his expectations. For Miriam, the contact of hands to clay triggers the *entrainment* that pulls her into full *engagement* with the work. In fact, altering the essence of

the clay by sensorily joining forces with it seems to be the way that Miriam experiences *flow state*. Miriam says that the sensory satisfaction of tactile engagement is what draws her back again and again into her work. The sensation of propelling oneself and being propelled into the next and next and next sensory moments of creativity is a *rhythm* that feels very familiar to experienced artists in many media.

To an observer, the temporal experiences in the two sessions were quite different. The even rhythm and moderate tempo of Miriam's *feedback looping* at the wheel fits quietly into the larger feedback loop that is created as she finishes shaping one cylinder, transfers it to a work table, and starts on the next. There is an unhurried, calm sense of time passing. Watching her work *entrains* me, too, so that I am aware of measured time, but could sit and watch for another three hours if she wanted to work that long. Keith's work is done in an uneven rhythm and in a variety of tempos from fairly fast-paced to extremely slow. When the *feedback looping rhythm* is more under Keith's conscious control, for example, the recording sessions, entrainment occurs and I have the subjective experience of time passing very quickly. When the computer's timetable makes the working rhythms unpredictable, my awareness as an observer is pushed out of engagement into impatience and frustration. Keith, though, whose world this is, is not so easily dislodged from his focused attention. He seems to be able to balance the "flights" and "perchings" of his process without exiting *creative/aesthetic engagement*.

The examples of Miriam and Keith show a variety of temporal differences. The size, shape, and configuration of the workspace and the *frequency* and *duration* that each artist inhabits the various parts of the space dictate one set of rhythms. The kinesphere of movement that characterizes each *interaction with the materials* sets up a *rhythm* of action/perception/self-critique. The *demands of each medium* dictate the kinds of sensory involvement that *entrain* the artist through *repetition* of action. Keith also attends to the *documentary stream* as another current in his action channel while Miriam does not. Each artist works for about the same amount of *measured time*, three hours, and each is surprised by this fact. Their experiences of *subjective time* indicate less time spent.

Magnifying the Action Channel: The Temporal Composition of Feedback Loops

Sometimes the artist must attend to the mundane temporal requirements of the medium and temporarily put aside the more engaging parts of artistic process. The weaver must card and spin the wool before even picking out dye colors. The choreographer must deal with the dancers' costumes whether or not she enjoys designing or sewing. Photographers spend time setting up and/or taking down their cameras, backdrops, and lights, and today's photographers must be trained in and patient with computer programs that help them manipulate their digital images. All of the currents in the action channel – sensory engagement and perception, documentation, the demands of the medium, and self-critique – are carried along by the artist's imaginative stream. The alternations, interactions, confluences and divergences between these currents form the rhythms, tempos, durations and sequences of the artistic

process. Each level of feedback looping represents a pattern of stable disequilibria, a constant shifting from one current to another or from one emphasis to another.

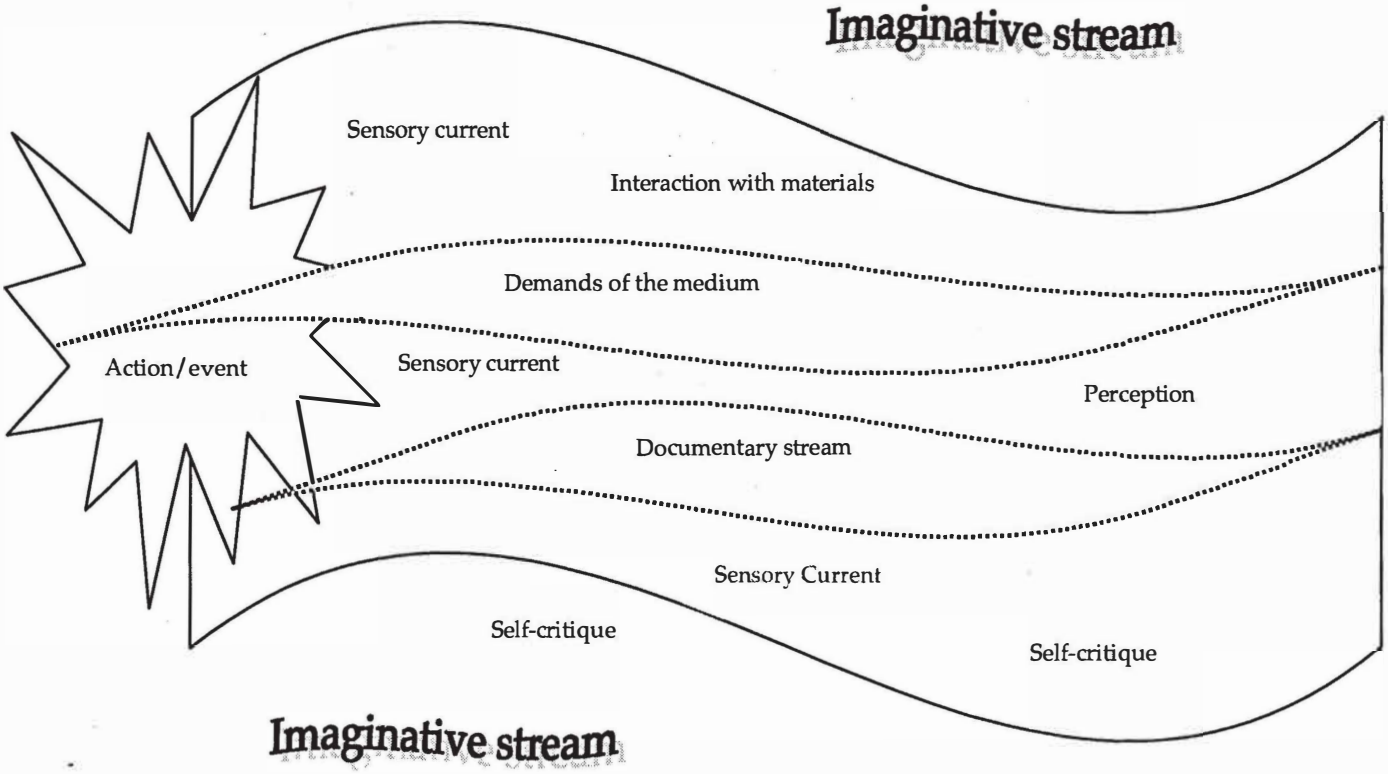


Figure 10. Magnification of the action channel.

Figure 10 shows that the sensory current is the baseline milieu of the action channel. The sensory current includes both action (interaction with materials) and perception and is surrounded by the imaginative stream. Moving through the center of the action channel are the demands of the medium and, when applicable, the documentary stream. I have used dotted lines to imply that these streams are permeable, i.e. the demands of the medium are tied to the artist's

sensory interaction with the materials and with perception. Likewise, the documentary current is closely tied to perception and also to self-critique. The current of self-critique is shown as residing in both the imaginative stream and directly in the action channel. Solid lines divide the action channel from the imaginative stream, but this, too, is a permeable boundary. The imaginative stream surrounds the action channel and is always available to the artist, whether or not he or she is physically at work in the action channel.

All of the currents are temporal in several senses. First, they continue over measured time, indicating *duration*. Second, they are revisited constantly throughout artistic process, indicating *repetition*. Third, movement into and out of each current sets up a component of *rhythm*. Fourth, work in each current proceeds at varying speeds, indicating *tempo*. The skill, the ease, and the rapidity with which the artist creates balances and overbalances or *stable disequilibria* among the currents is in direct relationship to the sense of *entrainment* and *creative/aesthetic engagement* he or she experiences in artmaking.

Summary

As the artist moves through the phases of artistic process, working rhythms are created, adapted, and experienced to facilitate both *imaginative* and *active entrainment* and *creative/aesthetic engagement*. By magnifying 'now' moments of creative action we can identify components of the *imaginative stream* and the *action channel* to locate the generative sources of the rhythms involving *imagination, self-critique, sensory interaction with the materials, sensory perception of the emerging form, the demands of the medium,* and *documentation*. Each of these

sources or *currents* has malleable temporal characteristics like *repetition, duration, sequencing* and *tempo* that interact and combine with each other to establish rhythmic *feedback loops* that move the artmaking forward. *Feedback looping* occurs on many levels from the micro-durations of individual 'now' moments (*momentary level*) to the macro-durations of the artist's life (*life level*) and beyond.

Among the most significant influences on the rhythm of *feedback looping* is the artistic medium. Each set of artistic materials necessitates an environment and certain *sequences* and *durations* that are only partially negotiable. Some of the *demands of the medium* must be accommodated even before the artist can enter the action channel, and, although their temporal urgency may change over the course of the artmaking endeavor, they accompany the artist to the end of the process. Repeated interaction with the medium provides the sensory stimulus for *entrainment*, then combines with *self-critique* so that the artist reaches full *creative/aesthetic engagement*.

On every level of feedback looping, artistic creativity is full of compatible and conflicting temporal characteristics that the artist regulates, sometimes consciously, sometimes not. Like a horse getting ahead in a race, each current in the *imagination/action stream* has moments of "leading" the process, through strength and/or persistence in tempo, duration, repetition or sequence. There is no single rhythmic pace that signifies *engagement* or *flow state*. Rather, individual rhythms are governed by 1) the way the artist uses the *matrix of subjective time* to negotiate his or her world of memory and expectation, 2) the work that the artist does with these memories and expectations in the *imaginative stream*, 3) the

artist's management of all the vectors that either promote or impede 'now' moments of creativity, 4) the exigencies of the artistic medium, and 5) the sensory feedback that occurs as the *voice of the art work itself* emerges.

When the artist's working rhythms and biological rhythms are synchronized and he or she is in a state of full *creative/aesthetic engagement*, he or she is also participating in the encompassing modality of *flow state* or *optimal experience* (Csikszentmihalyi, 1990). The tensions that characterize creative problem solving are experienced positively because "goals are usually clear and feedback immediate" (p. 54). The goals come from the artist, the feedback comes from the medium and from the emerging *voice of the artwork itself*. The interaction between them, the rhythmic progression of feedback looping, is the crucible in which the art work is formed.

CHAPTER VI

DEEP TIME: THE TRANSCENDENT STATE OF CREATIVITY

> *[Artistic expression is] an intimate union of the features of present existence with the values that past experience have incorporated in personality. Immediacy and individuality, the traits that mark concrete existence, come from the present occasion; meaning, substance, content, from what is embedded in the self from the past…Achievement of complete unison is rare; but when it occurs it is so on a deeper level and with a fuller content of meaning.*
> (John Dewey, *Art as Experience*, p. 71 – 72)

Temporally speaking, the processes that have been described in Chapters 3, 4 and 5 are enough to enable the artist to usher artworks from their embryonic commencement in the inner recesses of imagination to their emergence as fully-fledged creations with voices and lives of their own. At some point in the chains of feedback loops, a voice from the current of self-critique says, "This is finished." If the art form has irreversible processes, like glass-blowing, a hard reality from the demands of the medium may say, "You cannot go any farther with this particular artwork." If the art form is in the realm of performance, a performance date arrives and the cast may say, "Please don't change anything else!" If publication is part of the endpoint of the work, an editor may say, "That's it. We're going to press." The conclusion of an artwork can come from temporal and/or aesthetic considerations internal and/or external to the artist. Artists are constantly and successfully working in these modalities throughout their lives. The effect is cumulative because the flow state that characterizes

creative/aesthetic engagement is a positive experience that leaves its mark inside the acceleration vector of the artist, helping him or her to engineer more 'now' moments of creativity.

Artists also describe another, more rarified, phenomenon that occasionally characterizes their experience of the creative process. This phenomenon is the "complete unison" that Dewey (1934) describes above of "the traits that mark concrete existence" with "what is imbedded in the self from the past" (p. 71 – 72). Individual artists experience this unison in different ways, but among the artists who described the phenomenon to me, all agreed that the nature of the experience is distinct, even from their normally high-level, productive, creative/aesthetic engagement. They report that occasionally, without warning, they have access to a creative state that results in an unparalleled trajectory of ideation and productivity.

Time Dilation: The Portal

The phenomenon begins with a 'now' moment that has a different degree of intensity and clarity than those generally experienced by the artist. The 'now' moment comes as a flash of inspiration, a dream visitation, or an "Aha!" sensation. This particular kind of 'now' moment, which I call a *time dilation*, is a doorway or portal through which subjective time expands to fit the needs of the creative idea. As much subjective time passes as is needed for the artist to fully conceptualize the idea and to completely understand how to take the artwork from incubation to independent life. The time spent in the imaginative stream during a *time dilation* may have little or no correspondence to the measured time

that the experience takes. During the experience of *time dilation*, the artist's travels backward and forward through historical time and future possibility can be nearly instantaneous if measured by an observer with a stopwatch. Or an observer might see the artist gazing out of the window for hours, lost in thought.

Because *time dilation* results in the crystallization of an artistic idea, it can be described as a specialized form of *impulsion*. In *time dilation*, the idea for an artwork comes forward with so much clarity of vision and clarity of purpose that the ideation overrides anything else in the artist's mind. Csikszentmihalyi (1996) calls this the "'Aha!' experience" when the solution to a creative problem becomes "all but inevitable, requiring only a matter of time and hard work" (p. 104). One characteristic that differentiates time dilation from more normative experiences of artistic impulsion is its complete unpredictability. Visual artist John Calabrese describes the impact of having this type of artistic experience. "This is like hitting the lottery. Once in a while it happens. You don't expect that...it's really quick, like God comes down, touches you, and tells you He exists, everything's fine" (personal communication, April 1995). Several themes are addressed in John's introspective account. First is the sense of good fortune that he feels when he is caught up in the experience. Second is the sense that he could not have induced the moment, it came of its own volition. Third is his perception of the rapidity of the experience.

Time dilation essentially overrides all the factors in the *backing away vector* and *stasis* so that the artist experiences only the driving force of the *acceleration vector*. This happens as the dilated temporal portal allows the artist to journey

deeply and consciously through the *matrix of subjective time*. The how of the journey is a modality that I will call *hyper flow*. The where of the journey is an imaginative temporal location that I will call *deep time*. Metaphorically speaking, the experience is like suddenly finding oneself on an express train with optically enhanced windows, so that even though one is traveling at top speed, one can see distances, details, and geographical relationships that would normally be visible only with the aid of telescopes, microscopes and aerial photography. The moment of finding oneself on the train represents the moment of *time dilation*. The speedy express train ride represents *hyper flow*. The perceptually enhanced landscape is *deep time*. In order to investigate and clarify these concepts, we will look at their origins, characteristics, and interrelationships.

Hyper Flow: The Express Train

Hyper flow is an extension of Csikszentmihalyi's (1990, 1996) work on flow state theory. If we look at the model that Csikszentmihalyi (1990) makes to visualize flow state (see page 44), we see that, as in the model for the action channel (see page 125) and the imaginative stream (see page 137), flow is represented as a channel, or open conduit of experience that lies balanced between "boredom" and "anxiety" (p. 74). In developing the flow state model, Csikszentmihalyi found that the flow channel represents "a sense of discovery, creative feeling of transporting the person into a new reality…higher levels of performance and…previously undreamed-of states of consciousness" (p. 74). As has been discussed in previous chapters, mature artists frequently find themselves in a subset of flow state that I have called *creative/aesthetic engagement.*

What concerns us in this discussion is an acceleration of the flow channel, an experience that I call *hyper flow*, where boredom and anxiety become irrelevant parameters.

While Csikszentmihalyi (1996) has included examples of *hyper flow* in his narrative on flow state and creative process, he does not identify the experience of *hyper flow* as a separate category. One of the interviews quoted in Csikszentmihalyi's *Creativity: Flow and the Psychology of Optimal Experience* that led me to isolate *hyper flow* is an account by poet Mark Strand. In this quotation, Strand describes 1) the unification of past and future into in expanded present, 2) the deepening of meaning in the work, and 3) the excitement of an entrainment so complete that it sweeps him away by its force.

> Well, you're right in the work, you lose your sense of time, you're completely enraptured, you're completely caught up in what you're doing, and you're sort of swayed by the possibilities you see in this work. If that becomes too powerful, then you get up, because the excitement is too great. You can't continue to work or continue to see the end of the work because you're jumping ahead of yourself all the time. The idea is to be so…so *saturated* with it that there's no future or past, it's just an extended present in which you're, uh, making meaning. And dismantling meaning, and remaking it. Without undue regard for the words you're using. It's meaning carried to a high order. It's not just essential communication, daily communication; it's a *total* communication. When you're working on something and you're working well, you have the feeling that there's no other way of saying what you're saying. (p. 121)

Strand's immersion as described in his narrative is an example of Dewey's "complete unison." The exhilaration he describes is almost a fever, an internal conflagration of idea and action that lights him up like a torch. Strand's feeling of urgency comes through the narrative as a rapid layering of his creative memories, visions, and actions. This description is one of a number of interviews

that Csikszentmihalyi cites as examples of flow state that I would include as instances of *hyper flow*.

Hyper flow is like entrainment in that it is characterized by synchronization. The synchronization that occurs is a resonance produced by increasingly parallel processing between imaginative and active modalities. Terrence Deacon (1997) describes parallel processing from his perspective as a biological anthropologist whose area of research is the interaction of symbol systems, language, and brain function. Although Deacon is speaking of parallelism as a key to understanding how the human brain processes language, the "levels of sentential information" he refers to can be related to the currents and channels that compose the imaginative stream (Figure 10, p. 137).

> Unlike closed modules, the separately processed levels of sentential information cannot be entirely "closed" to the information processed in others. Parallelism requires synchrony in order to keep the partially decoupled processes organized with respect to each other, and selective cross-talk so that the results of some processes can constrain the operation of others. This too can be facilitated by breaking up language processing according to temporal domains, because extended (and therefore more redundant) processes can serve as a frame within which many more rapid processes can be constrained; and, conversely, the progression of a slower, more global associative process can serve as an integrator that helps overcome the intrinsic nosiness of the rapid processes, which must by design have minimal associative scope. (p. 299 – 300)

The "cross-talk" that Deacon refers to is comparable to the feedback looping described in Chapter 5. For example, information derived from sensory interaction "talks" to information in the current of self-critique. The conversation, or "dialogue" in Hanstein's (2003) terms, both constrains and facilitates the pace and the balance of the activities of artmaking. When these processes are synchronized to the point that the artist is no longer aware of

shifting back and forth from current to current, when artmaking is experienced as one impelling acceleration vector, the artist has entered *hyper flow.*

Hyper flow is also like entrainment in that it acts as a magnet. Just as entrainment pulls the artist into creative/aesthetic engagement, *hyper flow* pulls the artist into the action phase of the transcendent creative endeavor. The unification of *time dilation* and *hyper flow* produces an ongoing immersion in and access to the temporal landscape that I call *deep time.* To investigate the nature of *deep time*, we will look at both what deep time is and what it does.

Deep Time: The Transcendent Landscape

Deep time is a state of consciousness in which the imagination has a more complete and associative access to the *matrix of subjective time* than in other normal, waking, conscious states. Individuals are able to enter *deep time* because certain inhibitors, those that confirm concrete realities, and thus help us communicate and survive, have been overridden, bypassed, or suppressed (Rouget (1985), Turner (1969), Globus (1993) Lex (1979)).[2] *Deep time* is experienced in trance states, dreaming, and in certain instances of creativity. All of these states of consciousness share access to the landscape of *deep time*, but each state has a specific agenda and certain characteristics that separate it from the other two. Individuals who enter each of these states of consciousness also arrive at the experience of *deep time* through different 'doors.' The 'door' to the artistic/creative experience of *deep time* is *time dilation.*

I have chosen the term *deep time* as a descriptive but neutral term that does not exclude ideas that have been developed about mythic time (i.e. Eliade (1964), Jung (1960)) or sacred time (i.e. Hall (1983)). Theories about mythic time and sacred time have been developed in part to describe the way that the individual fits into the larger scheme of cultural time/historical time/experiential time/religious time. While the artist also participates in culture and community at a formational level, the full storehouse of ideas attached to each of these terms – mythic time, sacred time – is beyond the scope of this narrative. Also, the focus of these studies has largely been on the products or subjects of the deep time experience rather than on the experience itself. Dreaming, too, has been studied since antiquity through its products, the contents of dreams. More recently, the experience of dreaming has been studied by neurophysiologists and psychologists (Globus, 1993, Hobson, 1988 & 2002, Hunt, 1989). It is this body of scholarship that I will occasionally integrate into this discussion of the deep time of artistic creativity, drawing parallels and distinctions.

The word 'deep' has many meanings and connotations. A few that convey the sense that I intend to apply to the creative experience of *deep time* are 'subterranean,' 'penetrating,' and 'enigmatic.' Deep time is subterranean in that it normally resides below the surface of our conscious awareness. Every perception, experience, memory, and thought that we have is stored in the deep time of our unconscious minds where it is processed in the "convergence zones"

[2] These authors do not refer to deep time as such. They describe different ways in which the release of inhibitors allows the individual to enter a state of consciousness in which time-sense is deepened and/or

referred to by Antonio Damasio (1994). If we were to keep all of these memories and connections actively circulating at all times, we would not be able to focus our attention on the business of surviving in the world. So, in the normal waking state, the mind activates certain memories or classes of memories while inhibiting others.[3] The *matrix of subjective time* is always available to us, but even this 'transportation system' will not take us anywhere and everywhere we might like to go. In creative deep time, the waking mind has access to a world of memory and expectation that is normally 'cordoned off.' Among the artists I interviewed and the accounts I have read, artists do experience the world of deep time as a kind of 'bombardment' of ideas, but not in a random, repressive, or destructive way. On the contrary, when the accelerated stream of ideas and juxtapositions is available to the artists, they experience the ability to selectively search through the subterranean caverns of memory and retrieve exactly what will serve the purpose of the artistic idea. This is because of the 'penetrating' quality of deep time.

Deep time enables the individual to attend to problem solving in a focused way. In deep time it is possible to penetrate the boundaries that we normally impose upon categories of thought so that we can make associative leaps. These associative leaps in turn reveal significant information about both the form and content of creative concepts. The penetrating quality of deep time

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altered.

[3] See Schacter (1996), Chapter Six: The Hidden World of Explicit Memory.

is also shown through artists' descriptions of the clarity that accompanies deep time experience. The phenomenon of entering deep time is appreciated and valued by artists for these reasons, but it is not a phenomenon that can be duplicated at will. It is 'enigmatic.'

Artists find themselves in *time dilations* and subsequently in the landscape of *deep time* at unexpected moments. Preparation for these moments exists only inasmuch as the artist develops the autobiographical memories that compose his or her autobiographical self. This preparation provides the raw material from which creative deep time experiences can emerge. Discussing creative incubation, Csikszentmihalyi (1996) states, "...what happens in the 'dark' spaces defies ordinary analysis and evokes the original mystery shrouding the work of genius" (p. 98). The "dark spaces" referred to by Csikszentmihalyi are analogous to the mysterious "convergence zones" referred to by Damasio in which engrams for particular memories form networks of attachments with other engrams. Creative connections are regularly brought to light through creative/aesthetic engagement, but the experience of time dilation and deep time reveal these connections as if a sudden, penetrating ray of light had illuminated the inner workings of the subconscious for the artist. In the narrative that follows, I will expand upon and illustrate the 'subterranean,' 'penetrating,' and 'enigmatic' qualities of deep time as they inform the artist's transcendent creative experience.

Hyper Flow in Deep Time: The Transcendental Journey

We all enter deep time when we dream. Neurophysiologist J. Allan Hobson (1988) describes the temporality of REM sleep thus,

> Memory may thus undergo a paradoxical intensification as well as suppression during dreaming: recall is intensified within the dream as remote characters, scenes, events, and concerns are knitted into the fanciful and evanescent fabric of the dream. The dreaming mind can thus be said to be *hypermnesic*. (p. 7)

The *hypermnesic* property that Hobson describes corresponds to the expanded temporal network of *deep time*. In creative deep time, the artist, already journeying through the matrix of subjective time, can explore even greater variations in juxtapositions and construct even more fantastic phantom engrams, just as the dreamer's sleeping consciousness can concoct fantastic narratives. People and events from anywhere and nowhere in the past mingle freely in events and locations that partake of imaginary and real situations and places. Possibility is boundless. In deep time the associative floodgates are open. Hobson (2002) calls this kind of connectivity "hyperassociative" (p. 88). Because of this associative freedom, connections between previously unrelated ideas and events can be made; obscure pathways linking concepts are suddenly plainly visible. Sometimes hyperassociation results in a direct correlation between the deep time of dreaming and the deep time of creative process. The artist may awaken in the morning or even in the middle of the night with fully formed ideas or solutions to creative problems. Csikszentmihalyi (1996) states, "The insight presumably occurs when a subconscious connection between ideas fits so well that it is forced to pop out into awareness like a cork held underwater breaking out into the air after it is released" (p. 104). In waking hyper flow or in sleeping dreams, deep temporal linkages allow subconscious connections to present themselves.

The parallel processing of hyper flow is the organizing modality for the associative abundance of deep time just as it is the synchronizing modality for the currents in the imagination/action stream. Gordon Globus (1993) writes from the perspective of psychiatry in describing the neural networking of the brain during sleep and dreaming. In the development of his connectionist theories, which resemble the parallel processing theories of Deacon, he posits that connectionist neural networks, which he calls "C-networks," are layered for perception, thought, and action (p. 120). Figure 10, the magnification of the action channel in the imaginative stream (see p. 137), represents these layers as channels or currents in the stream of creative process consciousness. Globus (1993) argues that one of the functions of dreaming is to harmonize the connections between perception, thought, and dream-action, even when the fragments of memory that are presented in the dream seem random and illogical. "The basic tendency [in dreaming] is always for a self-consistency that meaningfully harmonizes incompatible constraints" (p. 128). So, too, a characteristic of creative/aesthetic engagement is synchronicity of the contributions from each current or channel even when they may seem oppositional.

As the artist moves into deep time, sense is made of associations that, in normal temporal experience, would be dismissed. As an example of parallel processing that mingles the creative state/dream state modalities, Csikszentmihalyi (1996) gives the experience of a chemist. August Kekulé's

creative work in this instance was accomplished by combining his domain knowledge of chemistry with an artistic visualization of form.

> …the German chemist August Kekulé had the insight that the benzene molecule might be shaped like a ring after he fell asleep while watching sparks in the fireplace make circles in the air. If he had stayed awake, Kekulé would have presumably rejected as ridiculous the thought that there might be a connection between the sparks and the shape of the molecule. But in the subconscious, rationality could not censor the connection, and so when he woke he was no longer able to ignore its possibility. (p. 101)

In this example, the elements that Kekulé used to solve his creative problem were gathered in the waking state, processed in the deep time of dreaming, then recognized as an insight after he emerged from sleep.

Csikszentmihalyi brings up another consideration in this example, the constraining force of censorship, or self-critique. In the normally high-functioning state of creative/aesthetic engagement, the artist's travels backward and forward through the matrix of subjective time may approach the associative richness of deep time, but full immersion in deep time is impeded by the constraints of self-critique. When a state of hyper flow is achieved in artmaking, it is as though a doorway has opened and the critical mind no longer constrains imaginative time travel or creative potential. The artist knows that each decision is the right one. There is a sense of being unable to make a mistake. For some, this phenomenon feels as though an outside force is actually creating the work so that the creative product is beyond the purview of the artist's own judgment. Friedrich Nietzsche's introspective account of writing *Thus Spake Zarsthustra* suggests that he had an ongoing experience of hyper flow during the process.

His full account also implies that he was able to access deep time at will during the year it took him to write the work. In this section of the narrative, he describes the experience as quite unlike any other in his career.

> …Zarathustra himself as a type, came to me – perhaps I should rather say – *invaded me*…one can hardly reject completely the idea that one is the mere incarnation, or mouthpiece, or medium of some almighty power. The notion of revelation describes the condition quite simply; by which I mean that something profoundly convulsive and disturbing suddenly becomes visible and audible with discernible definiteness and exactness. One hears – one does not seek; one takes – one does not ask who gives; a thought flashes out like lightning, inevitable without hesitation – I have never had any choice about it…one's progress varies from involuntary impetuosity to involuntary slowness…There is an instinct for rhythmic relations which embraces an entire world of forms (length, the need for a widely extended rhythm, is almost a measure of the force of inspiration, a sort of counterpart to its pressure and tension). Everything occurs quite without volition, as if in an eruption of freedom, independence, power, and divinity…everything offers itself as the most immediate, exact, and simple means of expression. (in Ghiselin, p. 209 – 210)

The sense that Nietzsche gives in this passage is of a tumbling out of 'now' moments so irresistible that there was never any question of his having to engineer them. Rather, he merely has to keep up with the pure acceleration vector of his muse. Nothing in the description indicates feedback looping between creative action and self-critique. The work is <u>beyond</u> critique because it is beyond choice.

Hobson (1988) refers to the same phenomenon in dreaming as a "loss of critical perspective…the dreamer is of but one mind, and that mind is wholly absorbed by the dream process" (p. 5). Translating this sentence to creativity produces the following sentence, "the artist is of but one mind, and that mind is wholly absorbed by the creative process." If we look back at Figure 5.3 we can

see that the current of self-evaluation runs through both the imaginative and active sections of the stream. Imagine that self-evaluation is so integrated into both imagination and action that it does not even show up as a separate function. For both the artist and the dreamer, the loss of a critical 'manager' during deep time is part of the synchrony that results in unfettered creativity. "During REM sleep, the brain and its mind seem to be engaging in a process of fantastic creation…Thus the brain of one and all is fundamentally artistic…Dreaming may reflect instincts, but it also reflects creative imagination" (Hobson, 1988, p. 296 – 297).

An important difference between the deep time of dreaming and the deep time of creative hyper flow is the accessibility of the experience. Hobson (1988) confirms, "the increased access to memory *within* the state of dreaming contrasts markedly with the virtual impossibility of recovering the dream product *after* the state has terminated" (p. 7). As was evident in Nietszche's description of his deep time experience while writing *Thus Spake Zarathustra*, artists are capable of remembering both the experience and the content triggered by time dilation. In fact, among the artists I interviewed, all had extremely clear memories of when the experiences happened, which projects they were working on at the time, what hyper flow felt like and how their temporal orientations changed while they worked, even years after the fact. Visual artist John Calabrese relates his experience of working in deep time. He differentiates this creative hyper flow state from his normal creative/aesthetic engagement.

> ...This one painting, it was joy...the ideal. This has happened maybe three or four times. Some drawings I can remember happened this way...I knew I could go crazy with them. The technical expertise was great. The music was clicking right in, and [the work] has captured something for all time. (Personal communication, April 1995)

Here, as in the example from poet Mark Strand, we see all the elements of Dewey's "complete unison." The rarity of the experience is expressed in several different ways; the past is represented by John's technical expertise which is a product of his autobiographical memories; the sense of release in the creative process is indicated by his attitude toward the work; the full content of meaning revealed in the artwork is referred to as having "captured something for all time." When John spoke about these experiences, he leaned back in his chair and smiled, recollecting the "joy" of working in this modality.

Although the artist has a clear memory of the experience in deep time, the experience itself is paired with a sense of independence from measured time. Also a characteristic of creative/aesthetic engagement, dissociation from measured time is magnified when the artist moves into deep time. Juanita Suarez had been a choreographer and a musician for many years when she had the opportunity to develop herself as a composer. She had already experienced creative deep time through her work as a choreographer. In this particular situation, Juanita was fortunate that she did not have to wrest creative time out of a full schedule of measured-time events, so her hyper flow experiences and her consequent transitions into deep time were frequent and extended.

> When it clicks, I don't even think of time. Time just goes dark. When I first started to learn how to write music, I lived in the woods and I didn't

> have any schedule... I'd get up in the morning...and before I knew it, eight hours had passed...I'd look up and say, "What is? Where? What's going on here?" When I actually feel a sense of displacement, I need to reorient myself...I just remember sitting there hours and hours and hours. My muscles told me I had to sort of stop or readjust or something like that. (Personal communication, April 1995)

The feeling of waking out of a sleep or coming out from under the influence of a mind-altering substance is typical of artists' experiences of the end of deep time and hyper flow. They may be very hungry or very tired and may carry the elation of the experience with them after the creative session is over.

A clear sense of self is another characteristic shared by the deep time of dreams and the deep time of artistic creativity. The self may be altered in some way, or may seem to be an onlooker in the process, but the experience of deep time does not encompass a loss of identity. If anything, the individual sense of self is a crucial component of deep time. It is as though identity provides an anchor in the expanded matrix of subjective time. Choreographer Jo Byrnes Miller shares the heightened sense of self-in-time that has been expressed in various ways by Mark Strand, Friedrich Nietzsche, and John Calabrese. She describes her experience in hyper flow as an alteration of her own time sense and of her perception of the tempo of the people who surround her as she works.

> When I'm really on a roll, I move a lot more than I think I need to. It's sort of like I'm living fast-forward of what the norm is or what the x-axis is...I'm actually *living* faster...I wonder if that's because I just feel like I have to move so much. I have this image of myself, like in a movie, and everyone's moving in slow motion around me. (Personal communication, April, 1995)

The quotation reveals a clear sense of self and of self-in-time. Jo remembers herself at the center of the experience in a way we might normally remember ourselves in our dream narratives. The obvious difference between Jo-as-choreographer-in-deep-time and Jo-as-dreamer-in-deep-time is that Jo-as-choreographer is at the center of a process of making while Jo-as-dreamer is at the center of an experience of being. Even if she dreams of making, or makes hyperassociative connections in her dreams that point her toward new creative work, the dreaming is still at a remove from the action that will realize the work itself.

As this comparison shows, a clear sense of self is something that artists and dreamers may share, but it is also one of the telling differences between the two states. No matter how thoroughly the dream may convince the dreamer that he or she is in an action state, in reality he or she is still in a pure imaginative stream. This is partly what allows the dreamer to release the inhibitions of the waking world and enter the creative space of deep time. In sleep, there are no "reality checks," no necessity of aligning the products of the imagination with concrete feedback from day-to-day existence. The artist in deep time, on the other hand, is completely engaged in the concrete reality of the waking world and is acting upon artistic materials in full synchronization with the products of his or her imaginative stream. The capacity to be in the action channel while inhabiting deep time is the rare and unusual feature of creative hyper flow. As the artist sustains the deep time/hyper flow experience, a unique kind of awareness comes forward.

Meta-Extended Consciousness: The Wizard on the Train

In Chapter 4, Antonio Damasio's (1999) term "extended consciousness" was introduced to describe the intricate way that human brain function allows memory and experience to interact functionally in and upon the concrete world. The "secret of extended consciousness," says Damasio, depends upon

> …the ability to learn and thus retain records of myriad experiences, previously known by the power of core consciousness. Second, the ability to reactivate these records in such a way that, as objects, they, too, can generate "a sense of self knowing," and thus be known. (p. 197)

As we have seen in Chapters 3, 4 and 5, Damasio's account is a condensed description of how artistic process operates. In creative hyper flow, the artist is not only inside the experience of making art but also at a remove, observing the experience. This is not done through the current of self-critique, as in creative/aesthetic engagement, but by attending to the way that the experience is manifesting itself. The work goes on almost of its own accord, while a part of the artist's consciousness marvels at its correctness and simplicity.

The recursive nature of hyper flow/deep time experience is a consciousness of extended consciousness that I will term *meta-extended consciousness*. Consider the following metaphor. In *The Wizard of Oz*, the wizard is believed by all the characters to know everything and to be able to solve all problems. Suppose that this were actually the case, and that instead of being a fraud from Kansas, the "man behind the curtain" was an extension of the wizard's consciousness, not activating the wizard, but simply watching as the wizard made all the correct decisions and guided the story to a happy ending.

The artist in hyper flow feels like a wizard, with the ability to journey through deep time and come up with all the correct answers. A part of the artist's consciousness is the person behind the curtain, an extension of the wizard and an observer of the wizard at work. This scenario describes the *meta* aspect of *meta-extended consciousness* in a way that approximates many artists' descriptions of the experience.

The effort that comprises the artist's preparation for creative work bears its ultimate fruit in this extraordinary and rare "union of the features of present existence with the values that past experience have incorporated in personality" (Dewey, 1934, p. 71 – 72). In Csikszentmihalyi's (1996) discussion, the "99% perspiration" (p. 104) comes after the insight. It is the work of actually realizing the creative idea. He lists conditions that operate during the process. The hard work that results may well occur in the flow state of creative/aesthetic engagement. In hyper flow, it is as though the work has already been done, the conditions already met, and all that remains is for the artist to act upon the materials of the medium in perfect concert with his or her continuing insight, as in the example of Mozart given in Chapter 4.

Like Mozart, most of the artists in the examples we have seen so far have described an intense sense of clarity as the idea unfolds, then urgency as hyper flow takes the artist into creative deep time. In the following counterexample, choreographer Mary Wigman describes sinking into a state of "deepest peace and quietude." The narrative also seems to indicate that she was aware on some level of the entire creative dynamic.

> My *Pastorale* was developed in the following way: I came into my studio one day and sank down with a feeling of complete relaxation. Out of a sense of deepest peace and quietude I began slowly to move my arms and body. Calling to my assistants I said, "I do not know if anything will come of this feeling, but I should like a reed instrument that would play over and over again a simple little tune, not at all important, always the same one." Then with the monotonous sound of the little tune, with its gentle lyric suggestion, the whole dance took form. Afterwards we found that it was built on six-eighths time, neither myself or the musician being conscious of the rhythm until we came to the end. (in Ghiselin, 1952, p. 75 – 76)

Wigman's choreography seems to well up out of a kinesthetic sense that is thoroughly connected to her aesthetic intentionality. The process is unhurried and self-trusting. The results are so focused that the whole dance is finished regardless of the almost lazy pace of the rehearsal she describes.

It is not uncommon for deep time activity to encompass the entire realization of the artwork. So clear are the phantom engrams for the work, or in Wigman's case, the overriding sensation of the work, and so direct is the path the artist must take to get there, that the work often comes out wholly complete and without needing revisions. Wigman, for example, knew exactly what kind of musical accompaniment would compliment the kinesthetic sense that motivated her. It was not necessary for her to carry a current of self-critique or analysis into the experience; her accelerated flow state drew her unerringly through the choreographic process. Artists frequently say that work done in hyper flow is their best work.

For the mature artist who is used to engineering creative 'now' moments, creative/aesthetic engagement is an anticipated outcome of entering into creative process. There is not, however, the feeling among artists that deep time is

predictably accessible. Finding oneself in deep time is an unexpected "gift" or a "waking dream" that is accepted, used, remembered, and treasured. In the following account, Ludwig von Beethoven describes 1) accessing a fully formed idea for a musical canon in a dream, 2) knowing upon awakening that he had had the idea but could not access it, 3) recreating the conditions of the dream in order to trigger cognizance of the idea, 4) recapturing the content of the dream, and 5) actualizing it immediately.

> On my way to Vienna yesterday, sleep overtook me in my carriage…While thus slumbering…the following canon came into my head…But scarcely did I awake when away flew the canon, and I could not recall any part of it. On returning here however, next day, in the same carriage…I resumed my dream-journey, being on this occasion wide awake, when lo and behold! In accordance with the laws of association of ideas, the same canon flashed across me; so being now awake I held it as fast as Menelaus did Proteus, only permitting it to be changed into three parts… (Ludwig von Beethoven, in Ghiselin (1952), p. 42 – 43)

In the full quotation, Beethoven also recounts a raft of narrative dream-associations that led up to the creation of the canon. He is able to recall this story in great detail as well, but it is the musical idea that he holds "as fast as Menelaus did Proteus" so that he can write it down post haste. He manages to have two "Aha!" moments in this experience. The first is in the dream itself, where some part of his consciousness earmarks the experience as significant enough to bring to the attention of his waking self. The second is the recovery of the content of the idea during the second carriage ride.

It is interesting that Beethoven mentions "the laws of association." He does not say more about this, but it leads one to believe that he may have recreated the carriage ride with the express purpose of triggering a hyper flow

state simultaneously with re-entry into the deep time of the dream. An ability to work in this way suggests a number of requirements. First the artist would be likely to have fully developed domain knowledge in his or her treasury of autobiographical memories. Second, the artist would need to know what associative triggers to use in order to retrieve the experience. Third, the artist would be able to selectively release enough waking inhibitors in order to dilate the 'now' moment and enter deep time. Beethoven was fortunate in being able to meet the requirements and set off the chain of creative events in this instance. But, even for Beethoven, this is the exception rather than the rule.

Artists must generally content themselves with the random gifts of creative deep time that befall them during their careers. There is an old saying that "luck is where preparation meets opportunity." The artist prepares by expanding his or her domain knowledge and consequent autobiographical experience, by engineering creative 'now' moments, and by repeatedly entering creative/aesthetic engagement to make artwork. The stage is then set for the "opportunity" of time dilation to correspond with the modality of hyperflow and transport the artist into the joyous experience of working in deep time.

Summary

The temporal tools and temporal states of artmaking effectively help the artist to turn ideas in the imaginative stream into concrete artworks with voices and lives of their own. Entrainment and creative/aesthetic engagement take the artist into a state of flow that is already a more intense, "optimal experience" (Csikszentmihalyi, 1990, 1996) than is generally characteristic of day-to-day self-

in-world interactions. For the mature artist who has learned to sculpt the creative process to meet his or her individual needs, this is generally a productive and satisfying state of affairs. Occasionally, however, the artist receives an unexpected opportunity that vaults him or her beyond high functioning and into the category of superlative functioning. In this state, the unfettered creativity of dreaming is accessible to the waking, productive consciousness of artmaking.

The opportunity presents itself as a *time dilation*, a creative 'now' moment in which subjective time expands to encompass the full realization of a creative idea. *Time dilation* engenders *hyper flow*, a state of extreme synchronicity that transforms the artist's motivation into a pure acceleration vector and unifies imagination/action/perception by selectively releasing inhibitors and reducing the oscillation of feedback looping. Through *hyper flow* the artist moves from the portal of *time dilation* into *deep time*, a hyperassociative version of the matrix of subjective time that shares some characteristics with the deep time of dreaming. When this sequence of events occurs, the artist is usually able to access both *hyper flow* and *deep time* until the artwork is completed, often in a single creative session. *Deep time* is characterized by associative richness, parallel processing, biological synchrony, release of self-critique, and indifference to measured time. In conjunction with *hyper flow*, it results in unrestrained creativity, high levels of volition, clear encoding of the phenomenon, and a unique orientation of the self.

During this specialized experience of artmaking, a part of the artist's consciousness is observing, remembering, and enjoying the clear, unimpeded

outflow of imagination and action. As a specialized case of Damasio's (1999) extended consciousness, I have called this consciousness of consciousness *meta-extended consciousness*. The transcendent nature of this experience is highly attractive to artists and its rarity makes it all the more prized. To illustrate the attitude of artists toward the phenomenon, I close with the words of writer Katherine Anne Porter. She describes the location that I am calling *deep time* as "that undistracted center of being," and the 'now' moment as "that fateful split second in which all action takes place." Her words express a wistful wish to inhabit deep time and to participate in the unbounded essence of the creative moment.

> Perhaps in time I shall learn to live more deeply and consistently in that undistracted center of being where the will does not intrude, and the sense of time passing is lost, or has no power over the imagination. Of the three dimensions of time, only the past is "real" in the absolute sense that it has occurred, the future is only a concept, and the present is that fateful split second in which all action takes place. (Katherine Anne Porter, in Ghiselin (1952), p. 207)

CHAPTER VII

NEGOTIATING TIME

The sun was shining on the sea,
Shining with all his might:
He did his very best to make
The billows smooth and bright –
And this was odd, because it was
The middle of the night.
(Lewis Carroll, *Through the Looking Glass*, p. 56)

Summary: Closing Time

Time is the way that we understand change and artmaking is a way of engineering change, so it makes sense that the relationship between time and artmaking is an intimate one. While living in the realm of quantitative, linear time, the artist works in an interior landscape of imagination and travels through the matrix of subjective time to generate and develop ideas. All of the artist's life experience contributes to the autobiographical self that is his or her frame of reference for the self-in-world experience of extended consciousness. It is through extended consciousness that the artist is able to negotiate the interface between being and doing.

Making 'now' moments of creativity happen involves an ongoing negotiation between the subjective realm of the imaginative stream and the objective realm of concrete space/time. The earliest creative 'now' moments that first take an artwork from impulsion through the action event into encounter are engineered as the artist creates a stable disequilibrium between the positive,

negative, and static factors that accelerate and impede the new creative process. Once the action channel is open, entrainment and creative/aesthetic engagement deepen the synchrony between the artist's biology, actions, perceptions and his or her ongoing travels in the matrix of subjective time. This engagement is an instance of flow state as described by Mihaly Csikszentmihalyi (1990, 1996).

Artmaking is propelled by the feedback looping between the sensory currents of creation/perception and the current of self-critique, all embedded in the imaginative stream. Each artist has characteristic rhythms of feedback looping, partly dictated by the demands of the artistic materials and partly dictated by his or her own preferences. Repetition, duration, tempo, and sequencing are some of the temporal indicators of each artist's patterns of rhythmic feedback looping. The artist negotiates these patterns over different increments of measurable time, ranging from the most instantaneous transactions to the full span of his or her life's work.

Occasionally, the artist may be transported through the portal of time dilation into a state of superlative creative functioning where measured time and internal time sense are in perfect synchrony. In this state, the artist experiences 1) a pure acceleration into hyper flow as the work takes shape, and 2) an expanded matrix of subjective time as the imaginative stream opens to include deep time. During these seemingly spontaneous bursts of creative activity, temporal negotiation is effortless and productivity is joyful. A part of the artist's awareness regards the process from a vantage point of meta extended

consciousness, reveling in the transcendent clarity of self-in-world, self-in-time, and self-in-change.

Through all of the stages of the creative process, the artist negotiates time. This negotiation takes place during the day-to-day exigencies of measured time, inside the matrix of subjective time, and in the borderlands between the two. The artist, consciously and/or unconsciously, navigates innumerable temporal crossroads. Each minute temporal choice has implications for the artist and for the emerging artwork. The collective weight of many choices creates patterns of temporal negotiation that help to describe and define each artist's characteristic artmaking process. By studying the patterns of temporal negotiations that artists experience, we come to a deeper understanding of both time and creativity.

Significance: Timeliness

This analysis of time and creative process has several 'homes.' I knew at the outset of this research that the subject was interdisciplinary. I considered the fields of philosophy, physics, psychology and the arts to be my primary sources, a diverse enough quartet. But as the research progressed, I found that neurobiology had a great deal to offer as well. It has been one of my goals to look at parallel scholarship in these different fields and to make the associative links between them that were supported by my own data. Taking the term from William Whewell (1840), biologist/philosopher Edward O. Wilson (1999) calls this kind of synthesis "consilience." He speaks of it as a "'jumping together' of knowledge by the linking of facts and fact-based theory across disciplines to create a common groundwork of explanation" (p. 8). Wilson (1999) identifies the

present era in scholarship in the following way: "There has never been a better time for collaboration between scientists and philosophers, especially where they meet in the borderlands between biology, the social sciences, and the humanities. We are approaching a new age of synthesis…" (p. 11). I see consilience as part of the significant contribution of this work. Arranged under the umbrella of consilience are the specific disciplines that the work addresses.

The Arts

The area of time and the creative arts does not really exist *per se*. Perhaps the most developed theories of time in art can be found in music and in writing. In writing narrative, sequence and duration organize the story temporally. Modern storytellers, writers, playwrights, and filmmakers, may play with sequence and duration to make a narrative more reflective of a journey through the matrix of subjective time. In writing poetry, rhythm and cadence shape many choices of the poet. Because music is organized temporally and because musicians must 'share time' in order to play together, systems have been devised to pass on the feeling of time and the temporal relationships that exist in music. Students of African music, for example, study for years with master drummers who know all of the instrumental and dance rhythms for every music/dance form in the culture's repertoire. In Europe, musical notation was developed to create a symbol system for measuring time. Even so, a conductor or leader is designated and/or trained in order to keep individuals from 'going off' and playing according to their own inner time senses, even when reading together from a page.

In dance, we often speak about space, time, and energy as being the defining modalities of the medium. In order to specify and codify these modalities, bodies of theory have been developing. Rudolph von Laban's work in the 1930s engendered a whole school of thought and scholarship regarding both space – through Labanaotation and Choreutics - and energy – through Effort/Shape. But in dance, time has largely remained the stepchild of the organizational tools of music. This is natural enough since the linkages between music and dance are so close and because music is temporal on a primary level. As a result, very little vocabulary has developed to discuss the more subtle aspects of time in dance; no corresponding body of work on time exists that mirrors the thoughtfulness invested by Laban and his successors in space and energy.

Perceiving this gap in the scholarship, another of my goals has been to begin to build a more descriptive temporal vocabulary. Granted, the ideas set forth in this narrative are concerned with the creative process rather than the performative or perceptual experience of art forms, but I hope that the concepts serve as a springboard for further investigation in all areas. I believe, for example, that we travel through the *matrix of subjective time* whether we are creating, performing, or perceiving art. I believe that performers engineer 'now' moments on stage in ways that are related to the creative artist's 'now' moments during the artmaking process. I believe that feedback looping is part of the aesthetic experience of the perceiver as well as of the artist. I hope that the concepts and the vocabulary established in this narrative help to advance and stimulate further thought about artmaking.

Philosophy

"Philosophy, the contemplation of the unknown," writes Edward O. Wilson (1999), "is a shrinking dominion" (p. 12). Wilson writes from the perspective of a biologist/philosopher who believes that scientific explanations will eventually be found for each of the problems that have inspired philosophy over the ages. Whether or not Wilson's assessment is true, we still have a seemingly unlimited supply of unknown quantities to contemplate. In the pursuit of two elusive and 'slippery fish,' time and creativity, I feel that there is still a great deal of 'elbow room' for the philosophic endeavor.

The philosophic ideas in this work have a traceable lineage from William James to John Dewey to Rollo May to Maxine Greene to Eliot Eisner to Penelope Hanstein to Rebecca Norwood in the philosophy of creativity and from Edmund Husserl to Martin Heidegger to J. T. Fraser to Edward Hall to Helga Nowotony in the philosophy of time. Each philosopher has a slightly different lens through which he or she is looking to investigate the phenomena. Dewey, Greene, and Hanstein, for example are looking at creativity from an educational point of view. Hall looks at time from a cultural standpoint and Nowotony investigates temporal experience from the vantage point of the social sciences. My own parameters have been the experience of time in the process of artmaking. In this narrative, I have tried to pull together some of the lines of thinking from each contributing philosophic area to help answer the "What is going on here?" question.

Historically, the philosophy/arts interface has largely been occupied by the study of aesthetics. Recently, much that has been done in the area of philosophy and the arts has had the aim of investigating the ways that the arts enrich us, educate us, and move us forward intellectually and culturally. The line of inquiry set forth in this narrative is a simple description of phenomena. It has no social or political agenda. It is not concerned with influencing cultural value systems or organizing our responses to the products of artmaking. It is not an attempt to pull apart existing theories or present philosophical 'arguments' in the combative sense of the word. It is focused on deepening our understanding of a particular kind of experience from a particular vantage point. If it has accomplished that mission, then it has contributed to philosophy as a discipline.

The Sciences

Scientists, too, are involved in the "What is going on here?" question. Although I do not perceive that I have added to the body of knowledge in physics or in neurobiology, for example, I do feel that the findings and theories here experientially confirm certain scientific positions. For example, the work of the artist in the matrix of subjective time and in deep time resonates with Antonio Damasio's (1999) descriptions of "convergence zones." Stephen Hawking's (1988) identification of 'now' moments and of the expanded possibility of temporal experience that precede and follow the action/event are addressed and adapted here to an individual, creative model.

In psychology, I have taken my lead largely from Mihaly Csikszentmihalyi (1990, 1996), but have also touched on Howard Gardner's

(1999) work in creativity theory, Daniel Schacter's (1996) work in memory, Steven Pinker's (1997, 2002) theories of mind and Allan Hobson's (1988, 2002) and Gordon Globus' (1993) work on sleep and dreaming. I believe that artistic creativity partakes of all of these areas. To paraphrase Nelson Goodman, "the kinds of nets we weave determine the kinds of fish we catch." I have attempted to 'catch' a multi-faceted picture of artistic creativity at work, so I have cast a net that is narrow but long and have seined it for the 'right kinds of fish for the job.' In some ways, I see this research as a specialized extension of Csikszentmihalyi's work on flow state and creativity. By confining the study to artistic creativity, I have been able to tease out some particularities of experience that may serve as models for creative process in general.

Chronosophy and Lateral Thinking

J. T. Fraser first developed the term "chronosophy" in 1975. "It appears reasonable…to coin the word *chronosophia* or *chronosophy* as…the discipline studying the content and the ramifications of man's knowledge of time" (p. 94). When I began the pilot study for this research in 1995, I initially responded to the call to action issued by J. T. Fraser in 1981. He established a multidisciplinary approach to the study of chronosophy and set out five major purposes or intentions of such a field. He then set an at-large agenda for the development of chronosophy. I will restate this agenda as follows:

1. to encourage the search for new knowledge related to time;
2. to set up and apply criteria regarding which fields of knowledge contribute to an understanding of time, and what they may contribute;
3. to assist in epistemological studies, especially in those related to the structure of knowledge;

4. to provoke communication between the humanities and the sciences using time as the common theme; and
5. to help us learn more about the nature of time by providing channels for the direct confrontation of a number of views. (p. 591)

As I look back on the work that I have presented here, I believe that it fulfills each of the above criteria in some way. Fraser's perspective helped me to align my interests in time and creative process and to see my work as part of the endeavor in both creative process and in chronosophy. The ability to think widely and to make associative leaps is one of my strengths as a thinker and one of my weaknesses as a writer of concise prose. I hope that I have put the former to good use and overcome some of the pitfalls of the latter.

Further Questions: Next Times

This same inclination to think laterally has led me past many tempting forks in the road. Each new fork in the road posed new sets of questions that branched away from my line of inquiry, but left intriguing trails to follow. The inquiry has been written from a clear vantage point of creative process. By slightly altering the focus of the study, areas for further study pop up like wildflowers after a spring rain.

The interpretive artist's temporal negotiations offer a related set of issues. I have touched on one of them in presenting the *documentary channel.* How do interpretive artists negotiate perception, action, and memory so that they can instantaneously call up aural, visual, and kinesthetic patterns? How do their internal senses of time change over the rehearsal period for a performance? During the performance itself? Over the course of their performing careers?

How do they play off of the material and off of each other to refine subtleties of *timing* in their work. How is their voyage through the matrix of subjective time similar to and different from that of the choreographer, playwright, or composer?

Another vantage point emerges when one looks at the temporal qualities inherent in the artistic product rather than the process. How do artists present temporal qualities in artworks? What can we observe about both linear, narrative temporal representations (i.e. "Once upon a time...") and abstract temporal sensations (i.e. the rhythm in a painting by Georgia O'Keeffe versus the rhythm in a painting by Jackson Pollock) that are imbedded in artworks? How conscious are these temporal designs on the part of the artist? Do creative artists wish to affect the temporal state of their audiences in particular ways? These questions lead right into the arena of aesthetics. What kinds of temporal designs and qualities do we value in artworks? How do the temporal aesthetics of a culture change over time (i.e. the narrative style of Marcel Proust compared to the narrative style of Kurt Vonnegut, or the rhythmic regularity of J.S. Bach compared to the rhythmic unpredictability of John Cage)?

Researching temporal and creative process experience from a whole-world perspective would be an enormous shift in vantage point. Since measured time is largely socially constructed and every individual artist's subjective time sense is partly defined by his or her cultural identity, a global extension of the ideas in this research would be likely to bring out a raft of issues that are not even considered here. Edward Hall's work leads in this direction and his

detailed model of the varieties of time is aimed at encompassing global experience. In this research, it would seem that in order to even ask the relevant questions of creative artists in cultures that are not one's own, one would have to have a good understanding of the cultures in which the artists are creating. For example, the indigenous cultural groups that populate Australia have distinctive connections between waking time and dreamtime. These connections are intimately linked to their creative processes. Is it even possible for a white, middle-class scholar from the Midwest to accurately represent the subjective temporal experience of an Aboriginal dancer or bark painter?

Related to the question of culture is the question of temporal transcendence in religious and/or mystical experience. This was alluded to in Chapter 6 by references to mythic time and trance state. Much of the material on hyper flow and deep time in Chapter 6 could be explored as a comparative study between creative transcendence and mystic transcendence. Both the process of attaining a transcendent state and the products of artmaking, divine revelations, or spiritual possessions that may result from a transcendent state are rich mines of information on the nature of consciousness. In pursuing this question, one might begin by looking at the work of Mircea Eliade, Gilbert Rouget, Ericka Bourguignon, Jane Belo, Victor Turner, and Joseph Campbell.

I limited my study to accomplished, mature, professional artists. This is because I was seeking a particular set of information, i.e. developed artistic strategies, long-term interaction with an artistic medium, and the ability to clearly articulate experience. I dealt only peripherally with these artists' personal

and professional development, their disappointments, failures and blocks. Creative block is something that almost every artist experiences from time to time. How is block related to the failure of temporal strategies? The failure of entrainment? The freezing up of the rhythm of feedback looping? What are the counter-strategies for block? How do developing artists begin to find coping mechanisms? What is the saturation point, when experiences with creative block overbalance successful creative encounters and another aspiring artist decides to make a career out of his or her day job? As it stands, this research is not really concerned with practical applications; it is not a 'how to' manual for creativity. But the information could be developed pedagogically.

These areas for further research only begin to identify the forks in the road. Each fork leads away from the inquiry's line of reasoning, but each is a tangent, a phantom engram for research yet-to-be, together comprising an infinite cone of possibility that stretches into the future from this 'now' moment. This dissertation will have a life of its own. It will detach from its maker and exist in its own realm of space/time. If the voice of the work speaks to others, if parts of the text become embedded in the autobiographical memories of someone else, if these bits and pieces are then pulled apart in convergence zones, and subsequently juxtaposed, reconstructed, and reconstituted through the matrix of subjective time into other, new ideas, then the work is more than an exercise for the writer. Then it rides the wave of time.

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APPENDIX A

Institutional Review Board Approval

TWU
TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON

Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3375 Fax 940-898-3416
e-mail: IRB@twu.edu

April 8, 2003

Ms. Laurie Sanda
2910 Country Club Road
Denton, TX 76210

Social Security # 218-66-9887

Dear Ms. Sanda:

Re: The Unfolding of Time Through the Making of Art

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and appears to meet our requirements for the protection of individuals' rights.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp and a copy of the annual/final report are enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. The signed consent forms and final report must be filed with the Institutional Review Board at the completion of the study.

This approval is valid one year from the date of this letter. According to regulations from the Department of Health and Human Services, another review by the IRB is required if your project changes in any way. If you have any questions, feel free to call the TWU Institutional Review Board.

Sincerely,

Dr. Linda Rubin, Chair
Institutional Review Board - Denton

enc.

cc. Dr. Penny Hanstein, Department of Performing Arts - Dance
Graduate School