MANAGING A CREATIVE PRACTICE

A Synthesis Project Presented

by

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ABSTRACT

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DECEMBER 2009

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Myths and assumptions about creativity often lead us to believe that creativity is innate. Researchers find though, that we develop creative skills like any other ability, through opportunity, encouragement and practice. They also believe that most people fail to reach their creative potential, not because of lack of ability, but lack of opportunity. In this paper, I studied how creativity functions (specifically in terms of my own painting practice) and how it can be applied more flexibly. Certain factors, such as access to strong mentors, freedom to experiment, and readily available resources, help potentially exceptional minds find the passion to define challenges, and the confidence to pursue remarkable achievements. Like any professional practitioners, artists learn to identify new problems, and engineer critical solutions when standard solutions fail. The earlier we start on this path, the further ahead we are able to push our work. The creative cycle helps us harness our skills and creative problem solving allows us to discover new ways to achieve. Essentially, breakthroughs are built on baby-steps and I took my first steps back to painting when I joined the CCT program after more than a year of creative stagnation. Conducting this synthesis project allowed me to conclude that the work of each artist contributes to the overall health of the creative hive. Since our general productivity is connected to our

environment, our community, and great numbers of active creative creatures working among us, I invite each reader to consider what they might gain from and contribute to our creative ecology.

DEDICATION

This project is dedicated to my beautiful family who inspire me every day with their empathy, energy and activism; To my parents, whose marriage of nursing and economics has served as an inspiring model of holistic health and long-term investment.

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The New Queen

Julie Barrett Oil Painting 30x40 Nov. 2008

CHAPTER 1 INTRODUCTION

Psychologist Mihaly Csikszentmihalyi has been studying creativity for over thirty years. One of the foremost authorities on "flow," or the building of engagement and fluency in creative work, Csikszentmihalyi was awarded Brain Channel's "Thinker of the Year Award" in 2000. The president of the American Psychological Association called the former University of Chicago Psychology chair, "the brains behind positive psychology" (www.brainchannels.com/thinker/mihaly.html). With all these accolades and years of research behind him, Csikszentmihalyi said that over time, his research grew progressively "more frustrating" (Csikszentmihalyi 1999, 313). In one project, he tracked a group of artists from their years in art school through the next few decades of their careers. At the start of the project, Csikszentmihalyi assessed which students were the most creative, and who, he thought, showed the most potential.

The frustration came when his predictions did not prove true. Many of the students he had identified never produced any particularly strong work. Instead he found many of the "most creative" students often stopped making art altogether and "pursued ordinary occupations" (ibid). Only the students who had continued working, and were able to dedicate a large amount of time to their practice, went on to make substantial progress and "important creative achievements" (ibid). Csikszentmihalyi realized they were missing something. He realized the systems and cultures within which the students operated greatly affected their creativity.

I have been painting for about twenty years. Like most painters, I have struggled with my

work and motivation most of that time. Originally, my thesis project was to study creativity as it related to the act of painting directly. What I did not realize was that in all my years of learning how to paint, I never learned "how to be a painter." Artistic development depends not only on learning technical skills but also how work and the environment in which we work affects almost everything we do, including how productive and how creative we are able to be. There are problems artists face when making creative objects, but there are also problems artists have to manage in order to a) become artists and b) continue working. Csikszentmihalyi and other researchers believe that time, practice and environmental pressures make the difference between who becomes a creative, exceptional artist and who quits, who finds their passion and who never gets the chance. This paper is my attempt at understanding how we become artists, what that means, and what that requires.

In creative development, even seemingly unrelated decisions and factors can affect our work. Motivation and progress depend on freedom, flexibility and encouragement in very real and practical ways. One of the more surprising findings of Csikszentmihalyi's study was that twenty years into the study of art students, even among students who were considered more creative than their male counter-parts, "not one of the cohort of women had achieved outstanding recognition" (ibid). I assumed he was talking about the generation of my grandmothers; the turn of the century girls, like Georgia O'Keefe, Mary Cassatt and Grandma Moses who were sometimes sent to grade school, but rarely sent to art college. However, Csikszentmihalyi's citations for that section range from 1976 to 1990. He was talking about the challenges of being an artist, particularly a female artist, in my lifetime. He talked specifically about the increased difficulties for people facing various social, cultural and environmental biases. As a woman painter, I found that alarming. As an artist, and especially an artist who works at an art college, I

found it infuriating.

Why would it be that *none* of the women in the study had realized their creative potential? One of the things Csikszentmihalyi found in those years researching creativity is that you need to consider factors beyond the artist's skills and abilities. An individual's environmental, social, economic and cultural situations affect how difficult it is for that person to produce creative work. One person may show exceptional talent as a child, but have their school's art budget cut. Another person might be at the top of a decades-long painting career, then find themselves in a paralyzing creative block.

Unfortunately, that was a problem all too familiar to me. Before joining the Critical and Creative Thinking Program (CCT) at University of Massachusetts – Boston, I had a creative block that lasted over a year. I was having trouble in the class I was taking and was told that all painters struggle. I was also advised that no one can give you the answers, good painters figure these things out for themselves. Not only was that the worst advice I have ever received, it left me frustrated, isolated, and lost. The work I did in the CCT program helped me see that the challenges and the benefits of creative work are overcome by seeking out answers, not assuming we can or "should" have answers before we ever learn how to find them. Artists never work in isolation. The most creative work is often in response to some new learning or inspired by great developments in other subject areas.

Leonardo DaVinci studied anatomy and geometry. This knowledge informed his beautiful drawings and portrait work with perfect linear perspective and symmetrical organization (Rothko 2004, 23). That was not his only important research. He was also creative in finding ways to find commissions, i.e. to *keep working*. He studied economics, he followed the fortunes of the kings, dukes and popes of his time. He moved constantly throughout his life "in

response to changing market conditions" (ibid). Monet and Cezanne both worked in particular styles and in response to psychological breakthroughs on the eye's processing of visual stimuli and the mind's perception of identifiable objects. Monet worked in the Impressionists' specks of color while Cezanne painted solid, idealized forms of individual objects. This was no accident. The middle class patrons of Paris were bored with picture perfect studies, and photography. They started investing in the stylized Impressionist work (Csikszentmihalyi 1999, 325).

We have to understand that artists *find* the environment and conditions that allow them to work. Having the easiest life, the most free time to work, and the opportunity to seek out things that inspire and support us is basically an ideal way to work, but that rarely comes without some effort and sacrifice. In the classical writings of Plato, (*The Republic, Allegory of the Cave*) Socrates advises that one should always maintain the perspective of the student, constantly seeking clarity and working to learn. Essentially, we are responsible for our perspective and what we do to inform it. The whole world may have an opinion, but the function of the artist is to train her eye and to establish her voice. She asks the questions. The CCT program allowed me to clarify my goals, establish which problems I wanted to pursue and to see more clearly the options I have in order to do so.

Somewhere between where I was and where I want my painting to go, I was able to find balance. I have been re-discovering my creative voice. Most importantly, I learned to look outside myself to find some important causes of *and solutions* for my creative block. I can find inspiration and insight, wisdom and encouragement from the many kind and supportive mentors available to me. In books and articles, paintings and prints, muses and masters, mentors and co-miserators, I found my inspiration. More importantly, I found how to find my inspiration. By the end of my first semester, I had started painting again. I never wanted to be handed the answers. I

completely expect though that any teacher, mentor, or role model should always be able to guide you to asking the right questions.

Like driving a ship through a storm, we know there are sure to be certain difficulties when we take on any challenge. In sailing, you have to learn how to manage the weather conditions, read the currents and plot your course through the safest and most effective path. You may not choose a direct path if you know the particular signs of a major oncoming storm. Like any good problem solver, you measure your goals against the available options. You are not allowed to command the ship until you are comfortable capsizing, treading water, and waiting out the storm because sailors know that problems arise and weather can be unpredictable. You learn to handle difficult conditions and you learn how to survive a crisis. I needed the same kind of training for managing a creative practice. The technical skills of art making are as important as sailing itself, but I also needed more basic survival skills. Like sailing, art making functions within a sea of oscillating pressures and changing conditions. Artists must learn to navigate around or maneuver their practice through rocky patches and sometimes plow through a total whitewash, blank canvas. Whether we recover from such trouble, or drown in the pressure depends on how prepared we are to "stay afloat."

Can we stay on top of our situation? Have we learned to be flexible, to bend and weave through difficult times, or will we become overwhelmed, panic or give up? Pressures can build in a slow tide or changing conditions can sneak up on us and pull out our footing like an undertow. Either way, we are susceptible, just as we are always susceptible to creative block. We can be stifled, overwhelmed or unsure what to do. We can run into something that we probably could do but have not yet learned how. Any of these situations can scare us, they can intimidate us or discourage us enough to stop working. This is how we lose artists: confusion, frustration,

and fear expand ahead of confidence, flexibility, and preparation. Art and creative problem solving stop happening when we cannot see a next step. My project is to learn to navigate such storms, to continue working, and learn how to find ways to move forward even as all the conditions around me remain fluid.

In an effort to take the advice of my CCT professors, I made a conscious effort to be more flexible in my approaches to problem solving and hold off on the evaluation until I had done some generative, creative exploration. As Professor Nina Greenwald puts it, we give ourselves a time and a space to feel ok not having the answers. We recognize a problem, then start a first step of trying to clarify what the problem really is, and what some possible reasons for it are. She calls it "getting comfortable with ambiguity." Instead of accepting the first cause that pops to mind, we realize that the first thing that comes to mind is often connected to the habit of self-doubt and self-blame: that the problem exists because "I" did or did not do something I "should" have. When someone is ill prepared, or expectations are so far out of sync with reality, a young artist can be left frustrated and overwhelmed. It is normal to rely on the assumptions that we "should" know better. System breakdown usually means there is some gap between what we learned and the steps and skills we need to develop as independent artists. Being "able" to make art is one thing, finding the time, space, motivation and resources to exercise that creativity, to actually produce work, and to develop that work over time is entirely different. Doing all of these things while managing a studio, a family, a job, a place to live, getting bills paid and staying healthy (and awake) long enough to get some artwork done, is still another level of creative problem solving, multi-tasking and time management that requires skills beyond mixing paint and drawing.

We need to learn how to apply our skills, but we need to understand that exceptionally successful artists manage much more than pigment and a paintbrush. They are business people. They are self-promoters. They are time-managers, risk-takers, and they get ahead in their field because they spend all their time working at it. This paper focuses on the critical and creative thinking skills that allow us to make art. We use these skills to understand a situation, recognize when things are not working and what, if anything, we want to do about it. This is how we achieve our goals, by being flexible and resourceful enough to recognize unorthodox options and venturesome enough to try them. When our options are limited, taking the time and space to assess ambiguity, and really look at what we know and what we do not know about the situation can be our best move.

In creative problem solving there is a distinction between problems we fix and problems we manage. We learn that certain problems cannot be solved within a specific situation or with only the resources available to us. I believe though, that we often fail to recognize all the moves and options that are available to us. In chess, they say there are 400 possible moves available within the first series of play, by the fourth that number jumps to 921 billion (Reisberg 2006, 477). How many moves do I have available in a given painting, by the first brush stroke, or the fourth? We do not always see all our options. We miss the warning signs might stem trouble before it becomes crisis, or changes we can make before the situation gets so difficult that we "choose" to quit. Often the incremental changes are the ones that improve our situation. They change things just enough so that we can continue working until a better plan becomes possible. If rent was a bit lower, our commission a bit higher, or the cost of living a bit more reasonable, maybe we would be better rested without the annoying roommate, or have more energy if we could afford better food. Maybe we could spend more time painting, and less time working to

afford our canvases. We can only produce what our situation allows. Even with the many sacrifices creative workers make, they still have to deal with finite resources. Time, space, and money often present the greatest composition problems for artists. Creative skills allow us to construct the work we want, but they can also allow us to find the most effective, most innovative and most resourceful ways to do so.

We know each painter will struggle with standard problems, but each painter will also have unique challenges that require creative thinking and the application of skills in specific ways (Motherwell 1968, 139). If we understand the importance of creative problem solving, making incremental changes and progress, and establishing goals, then we bring all of these "practices" into creative curriculum. We teach students to expect challenges, and we teach them how to capsize, and more importantly, we teach them to cling to their creative work when the world flips upside down, not abandon it. It is this work that can pull us through, distract us from, or remind us how to solve problems creatively. There is a difference between learning to make art and learning to be an artist. One of my favorite painters, Mark Rothko wrote about teaching art to children. During his painting career, he supported himself by teaching art at Center Academy in New York from 1929 to 1952 (http://encyclopedia.stateuniversity.com/pages/14434/Mark-Rothko.html). After over twenty years of teaching, he believed his most important job was to keep the kids excited about making art. He worked to keep them curious and engaged in their projects long enough to learn from them. They needed to establish a practice, and stick to it long enough to improve their skills.

That sounded like pretty a good system to follow. This paper has taken over two years to write. Part of what I have learned is to think about problem solving as a way to set priorities,

understand productivity, and learn how to cut away distractions and discouragement that keep me from doing what I really want to accomplish. Sticking to it takes a lot of patience, especially when I am new, and still learning how to manage certain kinds of problems. While it has taken so long to accomplish anything in this writing, I have also returned to painting and learned to be a computer programmer. Sometimes we have to handle multiple projects at the same time.

The advice about ambiguity and problem management skills I gained in the CCT program allowed me to understand in a very real way that sticking to it and appreciating incremental progress does bring me closer to my goals. Maybe I do not reach all the goals as quickly as I would like, or maybe I would get through the work faster if I only had one goal to work on at a time, but life seldom happens in a neat and orderly fashion. When we have the confidence to take risks and the opportunity to make change presents itself, we have to remind ourselves of the big picture goals. I had to take the better job and I had to keep at my painting. I also had to spend the time, the "lots and lots of time" creativity expert Raymond Nickerson says it take to write, or do any such creative work (1999, 395). Time is one of the finite resources, we spend it intensely or we make slower progress over a longer period. I take heart in the advice of one source who says the quality of work is "predictable to an extent" based on the amount of time one spends exploring before "doing their more explicitly creative work" (395). Hopefully, this writing will serve as the exploration of ideas that will later fill my 'more creative' painting. That would be my definition of this project's success.

Briefly, the roadmap for this synthesis is as follows:

In **Chapter Two**, I look at "Backgrounds and Beehives: Systems That Support Creative Development." In studying the **backgrounds** of especially creative people I tried to address some of the assumptions people, including myself, have about how creative work happens.

Especially when considering the assumed contradiction between my painting and my "day job" as a computer programmer, so much of what we are able to do is because a solid system exists from which we take our inspiration, support and knowledge. A healthy, well-built system allows us to get our individual work done, but it also lets us see the connections between various "inputs" and the results they produce. I started to wonder about Csikszentmihalyi's systems theory. Job decisions, personal stress, health, and how we understand and anticipate our challenges all impact our art, but how we learn to think as artists also influences how we see the rest of the world. The beehive structure of individuals contributing to, and benefiting from, a larger hive system was a helpful analogy for getting through this project. So many factors can either encourage people to or inhibit people from taking on challenges. In order to survive as an artist, I need to understand what those factors are. The hive structure helps me think about my role as one dedicated worker in a larger creative community and the **ecology** of being creatively productive.

Researchers argue that **creative thinking and problem solving** develop the same way any other skill or ability does, by practice. In **Chapter Three**, I look at both these processes, and how they are exercised through **The Creative Cycle**. The creative cycle is the process of generative and critical thinking that artists use to develop a product, object or idea. Creative work does not miraculously spring forth in finished form, but emerges gradually through an effortful creative process, full of multiple starts, steps forward, and steps backward. The purpose of this section is to think about the many shapes the creative cycle can take, and how, if, or when the various phases of the creative cycle or pieces of creative problem solving might be helpful.

In **Chapter 4,** I look at the role of **criticism** in the creative process. Marcel Duchamp's essay "The Creative Act" presents an argument against a critical phase of any sort. He says it is

unproductive for artists to focus on the value and judgment of their work. Certainly, untimely and unconstructive (self-imposed or otherwise) input can cause confusion, creative block or even discourage the artists from ever working again. Yet critical evaluation can also be an essential, productive aspect of the creative cycle that allows us to more fully achieve our goals. This chapter looks at the importance of understanding criticism and being able to separate what is constructive from what is counter-productive as I work. Researcher Raymond S. Nickerson "suggest(s) that most of us fail to realize the potential we have – which may be great – primarily because of lack of exposure to circumstances and conditions that are supportive of its development" (1999 p.407). He believes **we can learn to be creative**, but we must have a supportive, non-critical environment and the opportunity to practice without discouragement. This chapter looks at the role of criticism and builds a personal perspective on its value, use and inclusion in my creative practice.

Finally, in **Chapter 5**, I have tried to think about future steps, about what all of my research has taught me. If Nickerson is right, and most of us fail to realize our potential because we lack the opportunity and exposure to a supportive creative environment, essentially the question becomes, what would happen if I had it in my power to provide that? What would I need to do to bring about that kind of safe, supportive space? What would I give to make a difference, to *make* a more creative environment? That became the new problem I thought worthy of solving, or trying to solve. That is where this paper concludes, with the questions: What do I do with the resources I have? What are the changes I need to make? What kind of support can I give and gather?

Somewhere between the phenomenology of the artist and the practicality of the researcher, I ended up with this paper. I do not feel that it is the "finished" and polished work I

had hoped for but more of an important stepping-stone toward future work. As a painter, I would think of it as a portfolio piece. One day I hope to look back and see how this learning expanded my vision and clarified my voice. I am excited to move away from the page and back to my palette. Like many 'unfinished' works, it may not be 'done', but it is well past time to set it aside. Rothko explains: "Unfortunately we can't think these things out with finality, but must endure a series of stumblings toward a clearer issue" (2006, p xii). I hope it is a valid investigation and moves me, and possibly the reader, forward "toward a clearer issue" of continuing to work and managing a creative practice.

CHAPTER 2 BACKGROUNDS AND BEEHIVES: SYSTEMS THAT SUPPORT CREATIVE DEVELOPMENT

> "The function of the instructor is to stimulate and maintain their emotional excitement, and suggest solutions of difficulties which might prove a snag, and above all to inspire self-confidence on their part, always, however taking the utmost care not to impose laws which might induce imaginative stagnation and repetition."
>
> (*Writings on Art*. Mark Rothko 2006, 12)

From Mark Rothko's color field paintings to the wild years of "Beatle-mania," we can learn a lot by studying the stories and backgrounds of creative genius. There are many assumptions that people (myself included) have about how people come to be creative. Some people think creativity is an innate ability or natural talent. Other people think work comes to us through some mysterious inspiration, a proverbial "flash of genius," or is embedded in our genes (Nickerson 1999, 392). Perhaps the most dangerous assumption, though, is that creative work comes easily.

Every day people walk into museums and galleries, and think, if not say aloud, "Well, *I* could do *that*." Besides the fact that this is disrespectful, it is a bad sign that we really do not understand the process of developing creative competence. When artists, especially young artists, struggle, we think something is wrong. We think we "should" know what to do and how to make things work because as *creative people* this is something we simply *can do*. The truth is that successful artists have usually spent thousands of hours struggling through their challenges before coming up with any particularly creative solutions. Instead of believing the myth that

creativity should be effortless, and assuming I must not be one of the magic chosen ones, the research I did for this chapter helped me realize that the successful artists are not the people who breeze into the studio and throw a canvas on the wall. The successful, interesting and creative artists are the ones who work at it.

In any field, quitting is easy. Building the resilience to stick with a problem and the patience to work through it is difficult (ibid). This paper for example, has taken me over two years to write. My first impression (and one that still remains) was that I am a terrible writer. I thought a million times that I should give up, because obviously I was not good at it. I had to learn that just because something is difficult does not mean that I am bad at it. It simply means I underestimated how much time, work, and energy this project was going to take to accomplish and how much it was going to take out of me. While other students whipped through their chapters in a matter of weeks, that was not the case for me. I had to accept that their projects were not my projects. While there have been so many times I have wanted to quit, I managed to convince myself that the project was important to me. If I was going to get to really learn how to handle my creativity, I had to put in whatever time and effort this end was going to require.

I think in many ways adjusting our expectations to understand the extent to which time, energy, dedication, environmental support and opportunity play roles in the production and success of creative work really helps us learn how to succeed. If we believe that creativity should work automatically, and it does not, then we assume we are not creative. If instead, we take a logical, realistic look at the successful examples we admire, we usually see a razor sharp focus, decades of practice, and an exceptional drive to make things and make things happen. In any other field, professionals are expected to train, practice, and continue to keep their skills sharp and current. That internal drive and personal resilience are exactly the qualities that help us

achieve in other areas in life. In this chapter, I look at some of the work habits of exceptionally creative individuals, the amount of time and energy they dedicated to their work, and the environments that help or hinder their achievement and the realization of their creative potential.

Looking at the careers of artists and musicians paints a much different picture than the impressions we have of wild painters and carefree rock stars. Each of these artists had at some point the opportunity to pursue their dreams (Wiesberg 1999, 235), and to begin dreaming in the first place. Many of the social and cultural conditions we live in influence how we understand creativity (Bond 1990, 217) and whether we think a successful, creative life is something we could achieve. Most successful artists at some point had to take risks and go whenever or wherever the opportunity to further their career was possible. They had to have or gain access to those opportunities and be in a position to take advantage of them. Having the support of family, friends or the economic or emotional backing of people who believe in you make it much, much easier to set and reach your goals. While it is possible that natural talent plays some role, the researchers discussed in the next few pages have documented that the master works of creative genius normally happen after a long and intense period of experimentation, study and practice. The people who make exceptional contributions and have remarkable achievements are: (a) able to believe they can and (b) have the opportunity to make it happen.

As I discussed in the Introduction, having the "potential" for creative ability, genetic or otherwise, does not guarantee creative success. Only hard work and time spent solving the problems of a particular field or medium enable us to move past solving standard problems and eventually master creative ones. Great work is the product of great effort. There are very few, if any, exceptions. The opportunity to do such work, and spend so much time and energy over a lifetime on learning and skill development depends on discovering that interest early in life and

finding the motivation, encouragement and confidence to believe it is something you can and should pursue. This chapter looks at some of the reasons why this combination of factors is exceptionally rare and what can be done to make creativity more approachable and more accessible to more people, including myself.

Social, Cognitive, and Motivational Factors That Affect the Development of Creativity

Many people believe they are born either creative or not. Like being tall or having green eyes, people assume we simply *are* creative or not. Raymond Nickerson argues in his article "Enhancing Creativity" that creativity is a learned behavior, a skill, like any other, develops with practice. He says that research "**suggests that most of us fail to realize the potential we have – which may be great – primarily because of lack of exposure to circumstances and conditions that are supportive of its development**" (Nickerson 1999, 407). We only become tall if we survive long enough, and are given the opportunity to eat well, build strong bones, muscles, bodies, and maintain good health. We only *become* creative when we are given the resources and encouragement, when we have the right conditions, and are able to build strong skills, habits, and maintain a productive practice. Csikszentmihalyi adds that we can only create interesting, variations after we have learned the standards of the field (1999, 320). He argues one must know what is common in order to construct the creative. In other words, there is no mystery to becoming creative. It develops by the same factors that allow for any other skill or ability to develop: study, practice and limited distraction. Like planting a seed, it grows in direct proportion to the nurturing, resources and healthy conditions it receives.

Professor Sandra J. Bond (of Carnegie-Mellon University) studied the effect of social conditions on high-level creativity. By "high-level creativity" (1990, 218), Bond is speaking

about individuals who win Nobel Prizes or who have medical and law professorships and research appointments, especially at eminent institutions. She studied the statistical correlation between social values and the academic success of individuals in particular demographic groups. She looked particularly at race, gender and certain ethnic groups. She compared the number of Jewish people in a population to the disproportionately high number of Jewish Nobel laureates, and eminent professionals in the same group. She compared the number of successful women and men in certain fields, and the likelihood of marriage, children, and number of children, a successful person would tend to have, and the differences based on gender. She studied differences in social values based on race, gender and other factors that affect who we think we are and what we think we can accomplish. Then she explained the implications of cultural attitudes towards creativity and family values within these groups. She outlines how early childhood experiences, environment, and the impressions we develop about creativity early in life affect our ability to achieve.

Bond claims that there are "no magic formulas," but "we do know some factors that are important for achieving high-level creativity" (Bond 1990, 218). She explains that in the Jewish community, there is a strong emphasis on the family unit, scholarship and investment in your children. What Bond does not mention, but may also be a factor is that Jewish teenagers gain the respect of their community and *earn* their rights as adults in that community through the rite of bar or bat mitzvah. Not only are these children mentored and taught how to study and achieve an intellectual task (reading and reciting the verses of the Torah before their community), they learn that the esteem and respect of their peers and elders depends on intellectual achievement. Further, there is some evidence that bi-lingual people, especially those who have learned to read in both left-to-right and right-to-left formats, or letter versus character based alphabets, have not

only expanded their thinking to include a whole new idiom for expressing themselves, they gain flexible and innovative combinations when two cultures may think of certain terms in different ways. They learn to accept multiple ways of thinking as well as become literally flexible in translating meaning (Pink 2006, 21). Bond explains that environments like this not only promote "interest, self-confidence" and learning, they also provide "economic opportunities," "time," and "freedom from other responsibilities" (Bond 1990, 219).

According to Bond, the role of family, value of education and high value placed on children in the Jewish culture accounts for their extremely high proportion of creative accomplishment. She says that while only 3% of the U.S. population in 1975 was Jewish, they made up 27% of American Nobel Prize winners (Bond 1990, 227). She believes the promotion of scholarship via intrinsic reward, the academic and emotional support, and a strong value placed on education is basically an ideal formula for fostering creative achievement. According to Bond's article, 25% of law, 22% of medical and 21% of biochemistry faculty in the United States are Jewish (ibid). Of course, one might consider that the U.S. population may be atypical, but the trend toward achievement was even more extreme in 1400 A.D. when Jews were 1% of the European general population according to the article but 10.6% of the scholar population. In pre-Nazi Germany, Bond states that Jews were medical researchers, mathematicians and physicists at *thirty times* the rate of the general public (ibid). Beyond experiencing special attention and encouragement from their parents, the families were more likely to be in a position to support their children's interests and provide access to good schools, good jobs or exceptional role models. Bond claims these statistics show a correlation between the values and early environment of these individuals and their creative accomplishment that cannot be ignored. While any number of these factors improve the chances that we will be able to perform creative

work, the presence of all of them are normally found when exceptionally creative work has been produced.

These factors can have a strong influence on how we spend our time and what skills we develop. If our little drawings inspire praise and are hung on the refrigerator, we learn that they are valuable. If instead, our drawings are 'cleaned up' and thrown in the trash, we learn they are not valuable. We are less likely to invest our play time that way and more likely to spend it on something that will win us approval and attention.

One of the complications of defining a creative environment is gender and other forms of bias that can mean that, within the same environment, one child might be fostered while others are discouraged. Bond gives an example of testing done in the 1960s using Torrance's Tests of Creative Thinking that showed "boys suggest(ed) twice as many ideas as girls in experiments with science materials" (Bond 1990, 219). Instead of assuming this was simply because the boys were better at science than girls, these researchers looked at *the environment*, attitudes and values present in the classroom and found evidence that social forces were at work (ibid). In support of the hypothesis of the importance of social forces, they found that when they made appropriate changes in the teaching environment they reduced the boy/girl difference significantly.

Thus, we can see how biased teaching would interfere with a child's education and intellectual growth. When children learn that people *like them*, either in race or gender, are not welcome to participate in discussions, or that the teachers (or people in general) tend to respect or believe in them less, it has devastating impact on their ability to succeed. Professor Bond explains "Not only does society guide girl's interests away from science – it also directs them powerfully toward other occupations in which it is difficult to pursue high-level creative activities" (Bond 1990, 219).

In her text, “Swimming Against the Tide, The Creative Child as a Late Bloomer” (Greenwald, Levin 2000), creativity professor Nina Greenwald (University of Massachusetts Boston) also notes that creative children are often so stifled and discouraged in their education that they do not or cannot begin to express their creativity until they have left the school systems. This may be especially true for women and minorities whose stifling is exacerbated by additional, negative social bias. Greenwald explains that creativity not only benefits from a conducive environment, but often cannot exist without at least some basic elements, like an ability to experiment and confidence. When initiative, curiosity and confidence are stifled, so too is the opportunity to grow, to achieve and to succeed.

According to Professor Greenwald, these children, at a minimum, are losing ten to almost twenty years of learning, growth, development and practice in the areas they are too stifled, discouraged, and intimidated to explore. In the creative cycle chapter, I will explain more about the importance of exploration and experimentation, but suffice to say any delay in getting started in a field has exponentially destructive impact on the levels to which one can succeed in it. The idea that children of any gender, race or status in life would be creatively stifled in the very education system that is supposed to encourage and inspire them to learn and promote their intellectual development is completely unacceptable. We should be deeply concerned about the creative education of our young people, not only for the benefit of the children themselves, but also for the benefit of society (so we do not lose the potential productive, creative, innovators, inventors and problem solvers who otherwise may change the world).

Bond also illustrates the way social pressure affects a person’s career choices in her studies of women’s careers in science. We can see the beginnings of a pattern where young girls might be driven away from work in the hard sciences, and toward areas they might feel more

appreciated than deterred and un-welcomed. Bond points to the statistics on women among Nobel Prize winners as compared to men between 1901 and 1979 (as listed in *Who's Who in America,* 1980-81). In physics, the numbers were 112 to 2, in chemistry, 90 to 3, in medicine, 122 to 2, and in economics 15 to 0. When we move to Nobel Prize in literature, the numbers go to 75 to 5, i.e., men are only 15 times, instead of 61 times, more often the recipient. Looking at the Nobel Peace Prize from 1901 to 1980, we find 65 male recipients to 6 female recipients. To put these numbers in context, the study looked at major awards and the numbers of women who received them, between 1901-80 and assigned percentages. Awards in the sciences went to men 98% of the time and women 2%, in politics recipients were 96% men and 4% women and in the arts, the best of the areas reviewed, recipients were 90% men and 10% women (Bond 1990, 218).

Bond explores the social values and attitudes that influence achievement and teach each demographic and ethnic group certain things about what they can and should do. The same themes of investment and deterrence (and discrimination) seem to help or hinder regardless of the "people" involved. In one story, the brilliant Malcolm X was asked what he would like to do for a career. As one of the top students, he thought maybe he would like to be lawyer. Even though he had proven himself smarter and more hardworking than the white students in his class, he was discouraged from pursuing anything "too lofty" (Bond 1990, 231). His teacher, who he believed was actually well intentioned, suggested he think about carpentry.

Discrimination and discouragement is especially dangerous when it comes from the people we know and trust. If our role models, like those in our family, society, or culture, tell us to believe these things about ourselves, we are even more likely to believe them, and sadly, less likely to believe we can succeed. In 2005, in a highly contested statement, then Harvard President, Lawrence Summers commented that it was possible fewer women succeed in math

and science because of "innate differences between men and women". M.I.T. biologist, professor and principal scientist at the Hopkins Laboratory at M.I.T.'s Center for Cancer Research, Nancy Hopkins "walked out on Summers' talk, saying later that if she hadn't left 'I would've either blacked out or thrown up'" (Bombardieri 2005*)*.

Ten years earlier, Professor Hopkins and her colleagues were conducting a study on gender discrimination in the School of Science at M.I.T. (I happened to be her secretary in 1997, just around the time the study was being finalized and released.) Suspecting differences in the treatment and promotion of male and female scientists, these women scientists set about researching the problem in a scientific manner. They got hard numbers, facts, and figures, then compared them. I remember at one point, Professor Hopkins described literally taking out a tape measure and logging wall lengths. They found that male scientists were given more space, specifically that their administrative space was not counted as part of their laboratory space while it was counted in the women's labs. Additionally, the women were given fewer promotions and high level appointments, lower salary offers, and on the whole held fewer voting and policy/decision making positions than the men in the same school.

In reaction to the study, then M.I.T. President Charles Vest said his response to reading the report was to sit "bolt, upright in his chair" and immediately set about the process of correcting the situation and constructing a team to review conditions and establish plan and policy recommendations to ensure long-term effective change (Web.mit.edu/fnl/women/women.html#Abstract). In many ways, it is surprising that even among the "few" women who do find success at the level of M.I.T. professorships, there were documented differences in salary, space and opportunity. It is also shocking that even among the distinguished academic institutions, highly intelligent, educated *educators* did not recognize such

discrepancies until the study was conducted and inarguable statistics were brought to their attention. It is also curious to note that there are even differences between the junior women faculty and the "many tenured women faculty" (MIT 1999) about how much discrimination has affected their ability to succeed. It is likely that even if we feel supported, we many not realize the level of support others receive or have the proper perspective on our conditions until we have studied the issue and can look back on the discrepancies. Professor Hopkins told me that in science, success depends on time, space and resources. The larger area you have, the more experiments you can conduct at one time. The faster you can get through your work, the sooner you can publish your results and apply for grants, funding and support. You do not win awards for discovering something second. You win for discovering something first, or best. In a highly competitive field, any delay of your accomplishments, such as may result from discrimination or discouragement, may make the difference between those who win the awards and those who come in second. In art, and any other field I can imagine, the same is true. How much ~~we~~ could we accomplish with all the time, space, and resources in the word and no other responsibilities to take away from our study, practice and drive to succeed?

Additionally, there are social values that influence what we think 'is creative,' and the qualities that define creativity. In Western culture, psychologist Todd I. Lubart, of the Laboratory of Cognition and Development at Rene Descartes University, says that creativity is measured by an "ability to produce work" (1999, 340) that is original, and appropriate. Creativity is measured in terms of product, making creativity a results oriented activity. We compare one object to other like objects and assess whether it is somehow better. Eastern ideas about creativity are more concerned with "personal fulfillment" and "meditation" (ibid). "In Hinduism, creativity is seen as a spiritual or religious expression…to create is to imitate the spiritual" (ibid).

Originality is not a high priority, instead creativity is seen as a cycle of "self-realization" and "reinterpretation of traditional ideas" (340) from a fresh perspective. Female goddesses of creativity, such as Minerva (Roman), Sarasvati (Hindu), Oshun (Yoruban), and Bridhid (Irish/Celtic), appear in both eastern and western cultures, but there are differences in what defines creativity and who can exercise creative freedom.

Interestingly, Lubart points out that the different perceptions of creativity may stem from each culture's beliefs about the creation of the universe and theories on life and reality. In western, Christian cultures, the universe was created by 'God' in a short period of time (one week). There is a starting point and an ending point, and each distinct stage of the process is marked by the completion of a task. The Bible story outlines each day of the week by the *things* created: light, the sky, the sea, animals and humans. Lubart (340) says that this is a linear, progress driven process. The creator proceeds through individual tasks, working toward a specific ending point and deliverable product. Creating is an almost instantaneous process, and performed through some sort of mysterious and miraculous means. This thinking can be connected to certain beliefs and assumptions that creativity is automatic, innate, or divine, or that it can, does, or should happen in a direct, linear progression.

In non-western cultures creativity is seen as a fluid cycle. Progress and growth develop out of "successive reconfigurations", and infinite "developing, (and) unfolding" (Lubart 1999, 341). There are no set starts and finishes, only a revolving succession, an orbit. Much like the idea of eternal reincarnation, creativity is thought of as a fundamental recycling. We are all connected to some core, universal elements and reiterate such themes in constant process of becoming more personally fulfilled, and more aware of "inner truth," and the "nature of the universe" (ibid). One African myth explains the universe being created by a weaver. The craft

person “wove together four elements to make the universe” (Lubart 1999, 341). Creativity in these cultures would place a high value on thought process, and mental functions in creativity. Objects do not have to be unique or original, they would be measured by the insight and the beautiful combination of elements.

Along with these differences in what defines creativity there are also differences in who can express creativity. In some cultures only men are welcome to create art, and in other cultures certain forms of creativity are only allowed for certain people. He notes that Pueblo women can do ceramics, but only men tell stories. In some African tribes, only women can do beadwork, only men can do healing, but male and female children are welcome to sing. In some cultures songs must be sung in one exact right way (Omaha Indian), and in others, (Papua New Guinea) both men and woman can sing, but each have appropriate subjects and styles (ibid).

With these gender specific differences, come gender specific difficulties. Professor Sandra Bond gives several examples of successful, career oriented women and non-working women and the experiences they had that drove their decisions to pursue professorships, medical school or Ph.D.’s or to decide to stay home. Bond says “there is no question that …role models have a powerful effect on the direction our life can take” (Bond 1990, 220). A woman’s mother, she says, may be “her most significant role model.” Mother figures and other women role models are particularly useful for young women because “they can show them how to deal effectively with the special difficulties that women encounter – sexism, role conflicts, etc.” (Bond 1990, 220). The usefulness of role models to gain access to, become comfortable with, and learn how to succeed within certain fields is hard to argue. That support and access would be specifically important when there are fewer *like-me* people in the field, and any time discrimination and bias are present, whether in widespread or specific, less obvious terms.

According to many of my sources, (including Bond, Weisberg, Nickerson, Csikszentmihalyi) the amount of practice one gets relates directly to the quality of work produced and the level of success the individual can accomplish. If our practice begins early and progresses intensely, our skills simply develop faster than if we spend only a few sporadic hours. In the case of Mozart and Picasso, they may have had some predisposition toward creative work, but as sociologist Robert W. Weisberg (1999, 233) argues, because their fathers were a musician and a painting professor respectively, they recognized the children's potential and fostered it by any means possible. They were early and invested *role models*. These men spent their childhoods practicing, learning and discussing art and music. They were motivated to work, encouraged to experiment and studied in an environment that promoted confidence, commitment, and provided opportunity for growth. Even if there is a genetic basis for creativity, (233) there is an inherent link between the amount of time one spends learning, practicing and experimenting within a creative activity, and how creative and accomplished one becomes.

Weisberg goes on to explain why some of these creative geniuses were in such a position to do so much practice and perform so well. He explains that Picasso's father was a well-established painter and painting professor. Picasso was exposed to the work and teaching of his father, and mentored in painting throughout his childhood. He was engaged in a formal study under his father by age 9 and produced his first masterwork at age 13 or 14 (ibid). The tradition of great renaissance painters was to work in apprenticeships and copy, live under and absorb the work and teachings of the greater masters. Painters like Picasso are not only born to other artists, but also are born into a ready-made apprentice position. Around the same time as the masterwork was accomplished, his father sent Picasso to study at university, and arranged for him to apprentice under some of the best painters in Europe before he was twenty.

Mozart's father was also a musician. Mozart arranged his first symphony at 8, piano concertos by 11. He studied the masters and rearranged pieces of their work, then moved on to create original works by age 17. His father, like Picasso's, arranged for special mentorship. In Mozart's case they went to London, where he studied under Johann Christian Bach. This Bach was the youngest son of Johann Sebastian Bach (Weisberg 1999, 235-6). There is a pattern of these involved and invested parent/mentors giving their children every lesson and opportunity possible, then finding new teachers, new experiences and new ways to support and encourage the child's development.

The process of creative growth does not change when we move to a more contemporary example. Paul McCartney and John Lennon also learned music from their parents. They learned how to play, but Nickerson says "self-management" is also an important part of creative maturity. Like other cognitive psychologists, Nickerson points to the importance of paying attention. Being an "active manager" of your own "cognitive resources" means: "finding ways to utilize the strengths and to mitigate or work around the weaknesses. It means making an effort to discover conditions that facilitate one's own creative work" (Nickerson 1999, 417). This is very similar to the questions raised by cognitive psychologist Daniel Reisberg (2006, 136) only he asks if we can overcome our challenges by learning new ways to achieve our goals It seems the way we gain new skills is by practicing. Therefore, if we want to learn new ways of doing things, we start by experimenting with current way of doing things and changes the pieces that do not satisfy us.

At one point in their career, immediately before their most creative work was produced, the Beatles were practicing and performing "approximately 400 times per year" (Weisberg 1999, 239). Until 1962, ninety percent, or over 250 songs, in their "performance repertoire" (240)

were covers of other people' music, but "from 1963 to 1966, over 80%" (240) of the work they added to their collection was original. When people argue that creative work has to be unique and original, they often forget that the basis of most creative work is understanding the masters. By learning the structure and organization of existing work, we gather a deeper understanding and greater perspective of what is possible, and what we might make possible. Many creative breakthroughs are the combination of two existing ideas. Like the African weaver model, two strong elements of versions of a product can be combined into a better final version, or two seemingly disparate ideas can be joined or repurposed. Many artists use found objects of all media for collage and assemblage. Seeing ordinary things in extraordinary ways is a power of vision that we build through years of practice trying to see things well and from various perspectives. We learn to see things in interesting ways, construct solid work, and weave our own process of production and problem solving. There is a careful line when it comes to appropriation, but throughout history, painters have learned through apprenticeship to take from their mentors the skills and lessons they can, and explore on their own the innovations they might imagine. Between the threads of history and the fabric of the world around them, artists weave the story of art and understanding. One, without the other, begins to unravel.

Professor Bond looked not only at who received the Nobel Prizes but how they worked at achieving such an honor. The work habits of these professors show that they spent an "average of 60 hours weekly on teaching and research"(Bond 1990, 219). She found that one Nobel Prize winner, Herbert Simon, who was recognized for his work in Economics in 1978, spent up to one hundred (of 168) hours per week working on his projects. The study by Weisberg shows similar work habits in the "career development… of 131 painters" (Weisberg 1999, 231). Cognitive psychologists find that "it takes at least 10 years to become an expert in a domain" (Reisberg

2006, 492). In the study of notable art careers, Weisberg said they found a "12 year arc":

> There was an initial 6-year period of …non-creativity, culminating in the first master work. This period of development was followed by a rapid increase over the next 6 years in production of masterworks. The level of production remained stable for about 25 years, followed by a gradual decline. (Weisberg 1999, 231)

They studied the early drawings of Picasso, Paul Klee and Toulouse-Lautrec. They saw the same patterns and struggles that anyone faces when learning how to draw. They believe these artists simply managed to get through the learning process faster (Weisberg 1999, 231), presumably by spending more, concentrated amounts of time practicing and working on these problems at an early age. If time is vital, and progression of time is key to advanced development, then the creative genius has the best chance when she or he starts the earliest, and has the most time possible being spent invested, carefully learning how to manage and solve more advanced problems. Conversely, any delay, discouragement or bias that keeps a person from creative activity or the opportunities to discover and practice creative work, also prevent them from achieving to the same degree they might have if they had not been delayed, or if they had encouragement and support instead.

Implications of the research for "managing my creative practice"

Why any of this matters depends on how much you believe confidence and the impressions of others influence our drive and decisions. Most of us can remember some stinging memory from grade school. In my case, I was learning to read and having a hard time keeping up in school. All the other kids seemed to be working much faster than I was. We were supposed to do little learning games if we finished our work early, and keep a folder each month of all the points we had earned. My teacher called me to the front of the room one day and held up my

empty folder. She showed the whole class that I had not done a single game. I specifically remember her asking me if I was stupid.

Even at six or seven, I was horrified that anyone, especially a teacher, would be so cruel. I knew I never wanted to go to the front of the classroom again, for any reason. What I did not know was that teacher was wrong. The question she posed allowed only for two options: I did the games, or I was stupid. It turned out that there was a third option. I have terrible eyesight. I could not see the work I was supposed to be speeding through. Unfortunately though, we did not figure that out until a little while later and I spent first grade believing, as my teacher did, and as she *told all my classmates*, that I was stupid. I wonder what might have gone differently if my teacher had had any training in thinking creatively or looking at a situation with a critical mind. Would she have stopped to think that there may be more than one option? Would she have stopped to think of ways to help me through the work or tried to figure out *why* I was having trouble instead of only pointing out *that* I was having trouble? Maybe, but then again maybe I would have been more into school instead of spending all that time escaping into art and drawing.

Fast-forward twenty-something years. Having gone back to art college for a second undergraduate degree in painting, I found myself frustrated and not progressing as well as I thought I should have. This time I approached my teacher and asked for help (which is incredibly rare). Her response was simply that these are questions every good painter must answer for herself. Again, this is a limited answer. Either the student, me, figures it out or she is not a good painter. Good teachers do not give us the answers, they help us learn how to find them. The most important lesson I learned is that I absolutely do not have all the answers, nor should I. Being curious, finding new information, learning new things is an important part of any creative

practice. In a life where we are constantly looking for new questions, we cannot presume to have all the answers. We can only work to find them. Thinking I can find them only within myself seems to me, at least a bit insane. Researching the work of other artists, discussing and debating problems and paradigms with them and looking to our creative history, ancestors and community is an invaluable resource. We should use it, we should look to the lessons they give us and to the lessons or our predecessors and peers. We should appreciate the people as much as we appreciate their art.

For many reasons the creative community makes me think of beehives. Each of us has an individual mission, and our own work to do, but those efforts serve a common purpose of producing art and bringing inspiration, voice and meaning to the issues of our time. There is a symbiotic relationship between the health of an environment and the individuals who build it up and lend volume to that collaborative buzz. The bigger and stronger the community of individual workers, and the more closely united they are, the louder that buzz becomes, and the bigger, stronger hive they can build. By supporting each other we support ourselves and help construct a creative community that can offer a stronger voice, like the M.I.T. scientists suggest, to the issues that detract from our successes. Within that healthy hive, the artists among us can toil away, in the sheltered safe space that supports and sustains productive growth. As the buzz grows louder, more flowers bloom, and more honey is produced, other curious creatures are attracted to the area. The healthy environment expands and like osmosis, our thinking and ideas seep into each other's worlds as we become colleagues, neighbors and friends (Duchamp, 1966). Likewise though, as times get tough, resources fail and the support and opportunity to pursue the arts shrink, so does the health and well being of the hive, and systematically so does the health of the greater environment.

Biologists study the problems of system failure in the natural world. Recently there have been an alarming number of cases of "Colony Collapse Disorder, a mysterious disease that causes adult bees to abandon their hives" (http://dsc.discovery.com/news/2008/05/07/honey-bee). That means the drones abandon their work, and the hive dies. According to the Discovery Channel this phenomenon accounted for 29% of the 32%-36% of all U.S. hives dying the past two years (ibid). Because many flowering plants, fruit production, and a number of food sources depend on the healthy life of bees, biologists are gravely concerned about the implications for the larger ecological structures. They worry that there are systematic problems affecting the health and survival of bees. The scientists believe that the bee decline may be the first stages of a major environmental breakdown. In economics, the poorest among us are usually the first ones to show signs of trouble and suffer at the initial tremors of job loss and service reductions. They, like the artists' cultural and creative productivity, exist in a very careful balance of factors. Again, like the artists, this balance often has little padding and can be greatly impacted when even the slightest of variables fall out of line. They suffer first, but it a great warning sign for the rest of us that something is terribly wrong.

In biology, as scientists explain, so much depends on the *makers*. The artists, too, are systematically linked to more pieces of the environment than we generally realize. We do more than inspire. The arts attract great and curious minds to a region. They offer a cross-pollination of ideas and perspectives, and a unique venue for diverse and disparate fields to come together in common conversation about meaning and value. They attract new workers and lend volume to the buzz of innovation and progressive thinking in the intellectual discussions around us. Like the cross-pollinators in the natural world, artists of our cultural, economic and intellectual world leave a trail of impressions, inspiration, and new perspectives.

Each of our efforts lines up in perfect waxy little hexagons to support the greater creative community and allow the environment to thrive. The ecology of creative growth depends on the interaction between the organisms and the environment in which they function. There is a system of health and well being, supportive and creative arts that sustains all our lives. Each of our works adds itself to the volume of creative health. A stronger, more vibrant, colorful and supportive space can produce, like honey, the things that attract young minds to the region, and inspire them to join the hive. Borrowing from the scientists, biologists, and other systematic thinkers, we think of the equations and variables that will produce desired results. We strive to understand the systems and ecology that bring about creative growth and what we can do, individually or in broader collaboration, to leverage our talents and resources to a collective health. In new ways, I understand that my work matters, as do the individual efforts of all the artists and art appreciators who support our cultural causes. As Duchamp claimed, "good, bad, or indifferent" (Duchamp, 1966), our work is more important than the value we personally ascribe to it. By participating as an active and actively working artist I add to the numbers, lend to the volume, and build on the support and opportunity available and accessible to a younger, more diverse delegation. We build our own hive. We construct our own creative community. We make beautiful things, and we make beautiful things possible.

The difference this research has made for me is, in some ways, correcting an impression I had of myself since I was six. While I am sure I have made more than my fair share of stupid decisions, believing that teacher was probably one of the first and one of the worst. When children are discouraged, when they are told things about themselves that influence what they believe and what they believe they are capable of, it shapes their impressions of the world and their place within it. Confidence, security and risk-taking are important facets of creative

growth. When they are diminished or threatened so is the creative capacity of that individual. In my case, one instance made a strong impression and I still struggle with the idea of being not smart. Imagine if you will, that this is a constant message, one not only a teacher tells you, but one with which every mentor and authority figure in your world agrees. Children who grow up in biased and discouraging environments do not know their teachers are biased. They do not know that there are other ways to see things, or resources and opportunities that they are not being given access to explore. They only know that the person in charge is telling them they are stupid, and creative, high-level success is for a different kind of person.

That alone is infuriating. Add to that the social and cultural influences that tell us creative work is not important. Beyond the influences of social and cultural values, we accept the premise that creativity is innate, that there are only two options; either you are born creative or not. The truth is that many creative and artistic people are that way because they were discouraged in other subjects and art was one of the only places where they could express themselves without having to answer to specific right or wrong answers. People interested in abstract thought and gifted with kinetic, spatial, musical and other forms of intelligence are generally attracted to and rewarded in the arts.

At some point, I wish my teachers had told me it was ok to be confused. It is difficult to master new subjects and learn new things. Kids, especially young impressionable kids have to know they can do anything they put their minds to. It may take a while; it may take a little, or a lot, of work, practice, and figuring out. The experiences, opportunities and practice schedules of Mozart and the Beatles contrast starkly with the experiences of the women scientists or Malcolm X. We have to wonder what it means simply to have someone who believes in you, let alone someone who will offer you guidance, mentor you through a tough time and take pride in your

successes. For me, I have learned that it is important to paint, and important to keep painting.

CHAPTER 3 THE CREATIVE CYCLE AND PROBLEM SOLVING

"There are those who look at things the way they are, and ask why...
I dream of things that never were and ask why not."
(Robert F. Kennedy paraphrasing George Bernard Shaw)

As I mentioned in the previous chapter good teachers and mentors usually do not give us answers, they teach us to ask good questions. They encourage us to use our imaginations, find our own answers and seek out the paths that motivate us to work well, and work hard. While they share with us what questions they might ask and the paths they might take, they push us to pursue our own curiosity. They encourage us not to blindly follow the rules, but to question whether the rules are just, the information accurate, or the answers we find are responsive enough to satisfy the questions we have. They allow for the possibility that other options exist and support the young minds brave enough to pursue new paths. They do not teach us to pass a test, they teach us to love to learn. We study the things that are, and imagine the things that could be.

As Rothko wrote, it is the job of the instructor to keep children enthusiastic and excited about their practice. One of the ways we do that is to help students feel successful. To stay engaged, we need to feel we are learning something new. We want to know that our practice is bringing about good progress, even though it may be incremental. At each stage in the process of solving a problem, standing up to a challenge or finding the answers to the questions that keep us curious, we have to believe, first, that success is possible or that working at a problem is, in some way, important. Second, we have to have some idea how to get started. Third, and in many ways

most importantly, we need to that realize every challenge is likely to have unexpected trials.

In art, as in life, hopping hurdles, rounding turns, and shifting gears is often the only way to make it through a race. In other words, the most important thing we can be is resilient, but closely tied for second is the ability to be diligent and the ability to be flexible. We need to be critical and we need to be creative. Good mentors do not stop at teaching us how to sail the ship; they teach us how to navigate the shores and survive the storms and lead us to believe that the world is ours to explore. I am not an avid sailor, but I have always loved the idea of telltales. These tiny red and green strings hang from the sail and in a quick glance, while the captain and crew rush about their chores, they can see the warning signs of trouble, and how high or low, and from what direction the wind blows. In our own creative practice, moving forward requires that we navigate the constantly changing conditions and learn to adjust our plans at the early signs of trouble. Much like the ship without wind, creative block is often the result of poor planning, unfamiliarity with our environment, or a failure to realize that a slow and sometimes uneven flow of support simply requires that we learn to adjust our speed. The creative cycle and problem solving skills discussed in this chapter serve as the maps and tools needed for a long voyage. They offer us ways to succeed when dangers arise and show us, when one answer fails, that the world around us has at least three hundred and fifty-nine other degrees in which to face. What I like most about being an artist is the mentality that was so often quoted by Robert F. Kennedy from the playwright George Bernard Shaw: "There are those who look at things the way they are, and ask why... I dream of things that never were and ask why not."

This chapter introduces the structure and division of tasks that occur within the creative cycle and creative problem solving, and, at least for me, reminds me that the process of making things is anything but ordinary. It is an exceptionally creative, intellectual and intelligent process.

It only becomes "natural" to us after years of practice. Taking a careful look at the phases of the creative cycle that guide strong work has helped me map out my plans, organize my thoughts, and reach my goals in ways I never really realized I could. I imagine for many artists, like me, the tools and skills are right under our noses, we just need to take a step back, gain a new perspective, and find some new paths towards achieving whatever it is we hope to accomplish.

Phases in the Creative Cycle

In this section, I look at the phases of the creative cycle and how problem seeking, solving, and identification skills are employed through it. The Creative Cycle is a pattern of thinking and problem solving that researchers have found used by many successful artists. Experts generally agree that the creative cycle has two distinct phases (Nickerson 1999, 395), the generative and the critical, which may alternate. The generative phase is a period of being engaged in the work of brainstorming, creating and constructing. The critical phase is a period of stepping away from our work, evaluating its strengths and weaknesses and deciding how to refine it. Sketching and free writing are good example of generative work, while editing would be done during the phase of critical work. In painting we would start thinking about how we wanted to set things up by drafting many small and simple sketches and seeing which ones resonate. After we have produced and explored many ideas, we choose which direction we want to pursue.

There is value in identifying these phases of work, in order to understand what is involved, mentally, in the production of a creative work. I do not as an artist work in formal, divided states. I think separate mental processes are involved but it would be difficult for me to narrate which phase I was in throughout the entire creative process. Certainly I have experienced

separate times exploring (traveling, visiting galleries, reviewing art catalogues in the library), generating (actually painting in the studio), and critique (formal reviews in class or at an exhibition). I never stopped to think about how all these things happen in the detailed process of constructing a single work.

In the (first) simple model of the creative cycle I drafted (see Figure 1 below), there are two general functions: making and fixing. The first phase, concerned with making, is the generative phase. Charles Hawthorne, a well-accomplished painter, and one of the most respected painting instructors, encouraged his students in the generative phase when he encouraged his students to make *lots of good starts*. In the early stages of their work, they should "Paint for fun and for practice. We are going to take home ability and knowledge, not finished canvases" (Hawthorne 1960, 77). The more work we make and the more we practice our skills, the more we open up broader and more interesting directions in our work.

The second phase of the creative process is a thoughtful, serious evaluation, editing, and refinement period called the critical phase. The artist works to evaluate strengths and weaknesses of the work done in the generative phase, then edits the drafts and chooses the strongest options until finding a final stopping point.

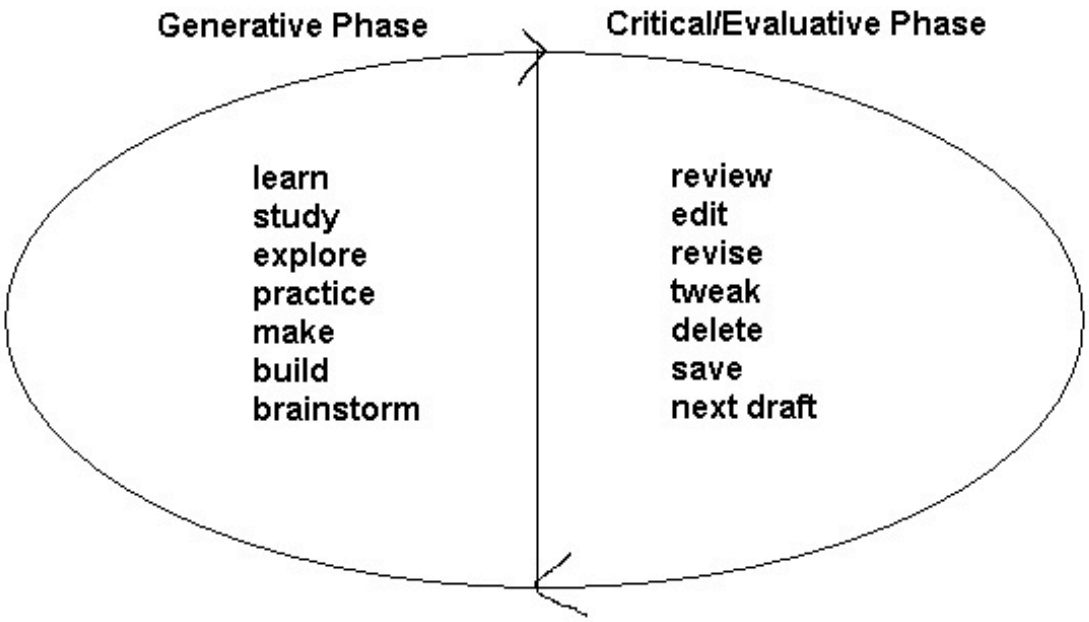

Figure 1. Generative vs. Critical Phase (my image)

Sternberg and Lubart (1999, 395) have proposed a three-part cycle with the generative and critical phases preceded by a distinct period of preparation, or what they call the 'exploratory phase'. During this phase, the person spends a great amount of time and mental energy planning and learning before beginning to actually generate work. According to Raymond Nickerson, in his article "Enhancing Creativity," there is a correlation between the amount of time artists spend planning and exploring their work and the strength of the final product. I have diagramed their model below (see Figure 2)

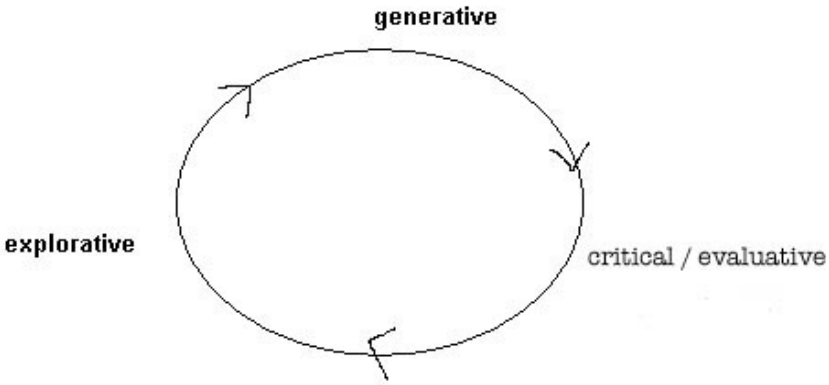

Figure 2: Flow and Movement in the Phases

I will discuss each of these phases further, but the important distinction is that the generative phase withholds criticism and delays evaluation. The flow of the creative cycle (working in the direction of the arrows) allows the artist to work free of judgment and criticism and focus first on a creative, constructive and *generative* mode. The artist then shifts to a separate critical, judgmental and editing stage later in the process. The phase of critical evaluation will be discussed more in the Chapter Four.

Raymond Nickerson in "Enhancing Creativity" says that creative thinking is the combination of the explorative and generative phases of creative work. In this combined generative phase, he explains that an artist generates many "pre-inventive structures" or possible ideas and editions of what the final product could look like. The artist uses "expansive, innovative, inventive, unconstrained thinking" (Nickerson 1999, 395-397) to create these ideas, then explores ways to 'generate, regenerate, and modify' possible options for a final product.

This is where artists use creative problem solving directly, a process that I will explore more thoroughly in my next section. Nickerson says creativity and problem solving are really just different applications of the same skills.

Understanding that problem solving occurs throughout the explorative and generative phases further demystifies the creative process, providing guidance to one stuck in "block." As we work to produce strong pieces of art, we are constantly identifying problems and setting goals, even if the goal is to fix one small detail. Problems are simply defined as any situation where you want something to change. You want to move from an initial state to a goal state, in the painter's case from an idea to an object. Nickerson argues that the characteristics that make good art makers, "novelty, unconventionality, persistence, and difficulty in problem formation" also make strong problem solvers. "Creative abilities such as fluency, flexibility, and originality… are…indispensable components of realistic and complex problem solving behavior" (Nickerson discussing Feldhusen and Treffinger 1986, 2). He argues that the generative phase of the creative cycle is based on the same principles as brainstorming exercises used in problem solving. We put aside judgment and criticism, and focus on a free flow of ideas, coming up with as many ideas as possible, "no matter how strange" (Nickerson 1999, 401). In order to increase the chances of finding good ideas we work to be open and explore more ideas in total. Quite simply, you play the odds.

Although some researchers like Nickerson think of the exploration as part of the generative phase, most artists I know though, would agree with Lubart and Sternberg, that they are separate functions. Artists can spend long periods studying, researching and exploring ideas before they know how a new idea or experience might influence their work, if at all. Open adventurous exploration, seeking to inform your work, is different from exploring options once

you have started the process of physically creating your work. It is important to invest time learning, reading, traveling, and *exploring* new things. We put ourselves into situations where the whole experience is brand new to us so we can stay in an inquisitive, unfixed mindset.

In *The Philosophy of Childhood*, Gareth Matthews discusses Aldous Huxley's "aesthetic evaluation of children's art". "Huxley claims that 50 percent of children are 'little geniuses in the field of pictorial art' but that among adults the percentage goes down to one in a million" (Matthews 1996, 116-117). It may be that keeping an inquisitive, child-like curiosity is difficult. We may also note that children are constantly in a stage of exploring new things or discovering things that are new to them. In either case, the ability to play, explore and imagine without direct purpose helps us both stay in a flexible state of mind and become more open to unexpected inspiration. This "child-like naiveté" (121) according to Matthews, is what makes the work of Grandma Moses and Henri Rousseau so well loved, and "collected alongside the best art of our culture" (121).

To provide me with more insight about the explorative and generative phases of the creative cycle, I looked to some artists' writings on their painting practices and how they felt about art and their role as artists. While artists seldom talk in specific terms of *generative* and *explorative*, *The Collected Writings of Robert Motherwell*, Mark Rothko's *The Artists' Reality* and *Writings on Art*, and Charles Hawthorne in *Hawthorne on Painting* offered exceptional advice based on the struggles and painting philosophies of these great artists. In addition to writings *by* artists, I read writings *about* artists and creativity in general. In order to gain some insight on the work that artists do, I looked both at the way they perceive themselves and how researchers from other areas understand what they do and how they come to do it. The investigation of Denise Shekerjian as she "trac(ed) the Creative Impulse with Forty Winners of

the MacArthur Award" in her book *Uncommon Genius; How GREAT Ideas are Born* was insightful. The MacArthur Award is an anonymously recommended "genius" grant. At the time the book was first published, (1990) this award provided "a prize in the six figure range to be paid out over the next five years with absolutely no strings attached" (Shekerjian1991, XI) to an unsuspecting and "Uncommon Genius". The discussion of the creative process and the personality, work and working habits of these award recipients demonstrated the almost addicting "fix" that creative and intellectual people get from exploration and problem solving. In other writings and articles I reviewed along the way, there were clear examples of the inspiration artists take from the fields they explore and the information they take from each other and from breakthroughs and curious problems in various fields that they find interesting.

Painter and blogger Bruce MacEvoy provides an interesting example of an explorative process and how it can expand and inspire our work to new creative heights (http://www.handprint.com/HP/WCL/artist29.html). He explains how Kandinsky was greatly influenced by a fellow artist, Paul Klee, to use a new technique (using stencils and atomizer spray for watercolors). While Kardinsky's use of this technique was learned from Klee, his color symbolism was uniquely related to his early childhood memories in Odessa (Russia). The combination of his learned techniques and his personal style furthered his work in new and exciting directions. "Light juicy green, white, carmine red, black and yellow ochre" were associated with the red Russian skies, liquid black puddles and an ochre horse he knew as a child, while the soft pastels of the atomizer spray would offer an interesting counter balance" (ibid). The layering of new learning from Klee combined with the ways Kandinsky used colors, memories and imagination in his work allowed him to **generate** new work and **explore** new ways of doing it. Without such exploration, both of other artists' work and within one's own

work, to find new ways to apply new learning and experimentation, art would become quite boring.

Another example of a great artist whose work was greatly influenced by an initial period of exploration was Rothko. Rothko explains that the artist does not work in a vacuum. Throughout history, great movements in painting have been in reaction to investigation of other domains, and the exploration of what those other themes *looked like* "in terms of plastic speech" (Rothko 2006, 23). The painter translates the reality of his time into a visual language. It is believed that Rothko's color field paintings were constructed in reaction to his study of tragedy, existentialism, icons and idols. Meaning itself can be present, abstracted from form, intention and separate from other, valid but variable perceptions. Rothko explored within his work, but he also explored what painting can tell us about philosophy, religion and meaning. Exploration, in its many forms, is and has always been an important part of the painting process:

> These reactions themselves are made possible through new means which are themselves properly evolved due to the introduction of new notions of reality. For example, the development of linear perspective was the result of the new notion of physical laws that were discovered during the renaissance. The painting of appearances was also the result of new understanding of these physical laws. The use of these laws in renaissance painting demonstrates the simultaneousness of the impulse – that is, the new understanding and its statement in every contemporaneous intellectual field. (Rothko, *Artist's Reality*; *Philosophies of Art*. 2004, 23)

Finally, Hawthorne may have made the best argument for exploring other areas and working to understand what we think by translating it into what we paint: "The most important thing is to have something to say. It's so simple it's almost idiotic" (Hawthorne 1960, 89).

More support for the importance of exploration as a distinct phase comes in the work of Denise Shekerjian. In *UnCommon Genius*, Denise Shekerjian interviews recipients of the MacArthur Fellowship Genius Awards (who are scientists, artists, writers, and others innovating

for the public good). She defines these people as "High Creatives" or those whose creative work has been recognized as extraordinary. She explains that people who exercise creativity at this level usually engage in a significant amount of exploration, with a specific focus on finding new problems. They travel, seek out new experiences and actively find new situations and problems they do not know how to solve. Cognitive psychologists talk about "change blindness" (Reisberg 2006, 110-1) and "functional fixedness" (495) as problems. That means that instead of being in the habit of evaluation and creative problem solving, we settle into the habit of accepting things as normal and routine. We become "blind" to change or even the possibility that we *can* make changes. We see our environment, and the objects and conditions within it as a set, fixed state.

Hawthorne warns that this is counter-productive to creative growth. As artists maintaining a healthy, inquisitive sense of exploration keeps us looking for new ways to work and new things to learn.

> Keep your mind clean – what you put on your canvas is an index to your thoughts and I can tell your character by the way you paint. Have an inquiring mind, don't get into a way of doing things. If you do, something stops; you don't grow. You get a fixed habit of mind. (Hawthorne 1960, 30)

The painter Mark Rothko surprised many people when he entered an exploratory phase at the height of his painting career:

> It was a very radical move for him to put down the brush after nearly 20 years and devote himself to writing. In any case it was an active step, one that set him on a new journey or, perhaps, a different facet of the same journey. (Rothko 2004, XXV)

His investigation into tragedy, philosophy and the things that inspired him produced what most people consider his master work, the color field paintings for which he is most famous. The explorative phase seems to serve as period of problem finding and identification. Concepts are constructed in a separate period of work that may lead up to, but is separate from, physical acts

of constructing work itself. It can be helpful at any point in our careers, especially if we are feeling a lack of growth or a creative block, to take a step backward. We can apply the phases of the creative cycle to individual works of art, but we can also use it as a guide to our creative development as a whole. We use the exploratory phase to clarify our vision, think through what we want to communicate, or explore ways in which we might represent our project. We can go through major periods of exploration, generation and evaluation in our work, or in the thinking and processing that is its index.

The exploratory phase provides opportunities for inspiration and influence to enter our process but the generative phase allows those ideas to be applied and explored and to inspire new ways of working. To some this exploration is a sacred space. Robert Motherwell (*Elegy to the Spanish Republic* and *Je Taime*) described, though, that he felt most able to explore ideas in his work when he was actually generating it. He might argue, like Nickerson, that exploration is an important part of, but is not distinguishable from, the generative phase. He says:

> …an artistic medium… (is) a living collaboration, which not only reflects every nuance of one's being but which in the moments in which one is lost, comes to one's aid;… seriously, accurately, concretely with you, as when the canvas says to you 'this empty space in me needs to be pinker'; or a shape says: 'I want to be larger & more expansive' (Motherwell 1968,139)

The debate about how different researchers divide the phases may stem from the fact that the creative cycle is a very flexible structure. While the artist can jump from one phase to another, even skipping phases altogether, it is generally believed that work ends up much stronger when artists focus in one area at a time and commit their attention wholly and carefully on one task, then the next, then the next. The explorative, generative, and critical phases each offer different insights into the development of a piece, but each artist decides how much time and energy he or she wants to invest in any given phase. These decisions shape our work.

We might imagine the creative cycle as almost like a rubber band. Certain phases can be stretched out at different times, and recoil at other times. The cycle is elastic. Artists will use the cycle in ways that serve their own needs and values. Our use of the creative cycle will likely change throughout our careers. It could be that what we think we need will change even within a single work of art. We will need to apply the phases flexibly and expect that each piece may move through the phases at different tempos. Some artists might always begin and end their process with a set plan, while others may change their patterns even as they spiral through the generation and critique of a single piece. The first pass may be simple, while later work might hop rapidly through editing and exploration within a single, final, detail of an almost finished piece. Author and illustrator John-Paul Jimenez was this year's celebrated artist at the Smithsonian Gala for Literacy. In discussing his process of creating the children's books *Gutterfish* and *Subway Deer*, he explains, "creativity is the process through which imagination becomes reality" (inside cover). That can be a formal, organized process, or a messy, slimy, fluid cycle. However we choose to use it, it helped me to know: a) what the pieces of the creative cycle are, and b) that I have the freedom to decide for myself what I need and when.

In my own work I will often start, as many art instructors have suggested, with very loose and broad, gestural paint strokes. By the end of the painting I am down to my tiniest brush, shaving and shaping the exact shape of a nostril or curve of an eye, then stopping to look at other portrait details such as the work of the great Rembrandt, Gauguin or some contemporary favorites, Joe Sorren, Lisa Yuskavage, and Jenny Saville. The shape and scope of the creative cycle (and the principles of problem solving) can, and in my opinion should, be able to expand and contract to everything from our understanding of our art practice as a whole, to the tiniest detail of each individual work. As we look at the figure below (Figure 4), the nautilus shell (an

image used on the cover of Margaret Matlin's text *Cognition*) demonstrates how we go from broad general problems, to smaller, more refined details as we work through the creative phases on smaller and smaller scales. At first, we might use the creative cycle to determine a broad question, like what we are going to paint. Later, after we have *narrowed* our options, for example, choosing to work on a portrait, of a particular person, in a particular setting, we explore options that might answer specific, detailed questions. The curve of an eye or the shape of an eyelid may require a few tries. We may have the right flesh tone, but creating the angle of a cheekbone or brow might require a cooler or warmer tone to break the flat plane. As we work on smaller and smaller areas of the painting, the decisions are no less important, just more refined.

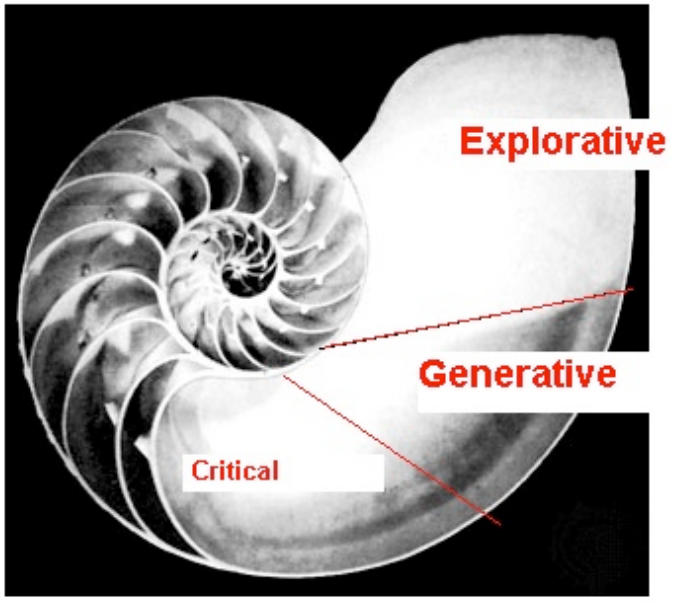

Figure 3. Nautilus Image with Creative Cycle

Further, as the spiral shape of the nautilus shell might indicate, when we feel our work

get tighter, and our options narrow, we are always welcome to back up and expand our thinking. We can always revisit our early steps, and move back through some previous states until we feel that we re-examined whatever we needed and are ready again to push forward. In hiking, the smartest and most experienced climbers know that when things start to look unfamiliar, it is often the safest and most productive thing to turn back and make sure you are on the right path. You have the option to change paths and shift your cycle as the situation requires.

For all artists, the creative process and the creative cycle shapes, and is shaped by, the actions, decisions and interests that keep them engaged. These problems provide them challenges, at least enough to maintain their curiosity. Our motivation marches ever so carefully between what we know we can accomplish and what we imagine might be possible. It is between those two thoughts that we search for the fibers out of which to weave our dreams and our reality. We stitch each string, fasten each fact and build each path between what is and what we want it to be.

In the next section, I look at the various phases of problem solving and how defining what we know helps us find what we need. There are certain strategies that experts use to plan their problem solving paths. We will look how experts define various types of problems and the strategies they feel provide the most effective solutions. Many of the strategies will be completely familiar to artists, especially painters, who manage the problems within their work in much the same way that expert problem solvers arrive at high-level creative solutions. Gaining perspective, working toward a goal, and working backwards from a goal (for example, towards creating the image in your head, from a blank canvas), are common ways experts plot out the steps from where they are, or their *initial state*, to where they want to be, or what they call the *goal state*. In this next section we will look at many of the ways artists handle problems.

Problem Solving Methods and Heuristics, Automaticity, and the Development of Expertise

Cognitive psychologists say stepping backwards, as Rothko did, is an exceptionally difficult but highly effective problem solving method. It does not necessarily make sense to us that moving away from painting, or not painting, could actually make us better painters (Reisberg 2006, 475). It does make sense that when we are lost, or confused, we take time to evaluate what is going on. We may be better off pursuing our goals from a different perspective, or gaining perspective on what our goals actually are. This is something we do in painting all the time. We step back away from the canvas, and look back on what we have done. Rothko's shift to research and writing was an active step towards understanding what he had done, and more importantly, what he was about to do. It gave him direction.

Rothko's drive to take active steps in his work was informed, at least in part, by his beliefs about the development of artistic talent in general. Not only should criticism be avoided too early in the generative process of a painting, it should be avoided in the generative process of their artistic development. His goal as an art instructor was to keep his students interested and engaged so they continued to make work and build skills that would support strong creative growth. He felt very strongly that it was his place, and an important protective step, to delay criticism and encourage exploration and experimentation. He said:

> The function of the instructor is to stimulate and maintain their emotional excitement, and suggest solutions of difficulty which might prove a snag, and above all to inspire self-confidence on their part, always, however taking the utmost care not to impose laws which might induce imaginative stagnation and repetition. (Rothko 2006, 12)

Avoiding snags and stagnations is difficult. We want to try new things and challenge ourselves, but we do not want those challenges to be so great that we cannot figure out how to

solve them. Strong problem solving skills and flexible problem solving strategies help us find ways to move through the creative cycle and to produce more creative work. When experts "break problems into manageable parts" (what researchers call means-end analyses and forming sub-goals), they are exploring the anatomy of the problem, and dissecting it, just as we would a specimen in biology. Identifying the parts helps us figure out the whole. As I started to understand the phases of the creative cycle, I also wanted to understand the pieces of creative problem solving.

Cognitive psychologists use their own language for describing and analyzing problem solving. The **problem space** is "the set of all states that can be reached in solving this problem" (Reisberg 2006, 475) or all the possible stages of a painting from start to finish. In painting, the **initial state** is the blank canvas, the **goal state** is a finished work (sort of, but 'finished' can mean a lot of different things to different artists). The **intermediate state** would be any stage in the process between when I start working and when I decide the work is finished. A **path** is one possible way, or direction I can take to move from one state to the next. **Path constraints** are the factors that limit my options. Do I have a canvas, what size work can I afford to make, etc. If you set out driving home, and one road is jammed with traffic and another is blocked because of an accident, you choose a different path (Reisberg 2006, 475). This is an example of a simple problem path. If the simple path does not work, one would require a second path, or additional options for achieving the goal of getting home. Obviously, we would not stop in the middle of the road, get out of the car and say: "I can't do it." I have never walked away from the car without trying a second, third or fourth option, or even calling for help from people who might know the area, or might know something about the traffic jam, the cause of it or how often it usually takes for an accident to clear. Why then would I walk away from my painting practice

without at least as much effort at finding a resolution? In the simplest terms, when I am stuck I just need to find a new way home.

Figure 4. Simple Problem Path

Identifying path constraints ahead of time can actually be helpful. If I only have one canvas, and I ran out of cerulean blue, my painting is constrained to being small. I can plan to make the sky gray and stormy instead of a bright blue and clear. Sometimes having fewer choices can help limit confusion. We get working right away instead of spending a lot of time choosing which way we *should* go, because there are only one or two ways we *can* go. Many art teachers will give restricted assignments at first, and gradually add complexity to the problem. They might start with a black and white only study then add a single color for the next assignment, (then a second then a third in subsequent weeks). This allows us to focus on one aspect of the problem at a time and master each element before becoming overwhelmed trying to manage too many at once. Good teachers help you choose which direction to take, until you learn to make those decisions on your own. When those teachers are not available or we are not in a particularly academic or supportive environment, our creative community, fellow artists and the artists we admire, or those we have access to researching, provide additional insight, new options and possible paths from which we might choose to new direction. Beyond helping us to see the problem from a new perspective, they can help us learn bits and pieces that will help solidify or define individual aspects of the problem and firm up our ideas about how to approach it. In many cases, speaking to my peers and studying the artists I admire has helped me to realize that the

goal I thought I wanted may not be exactly what I need. Exploring options and taking advantage of the resources around us is an important step in understanding the possible paths and prospects for the problems we are trying to solve.

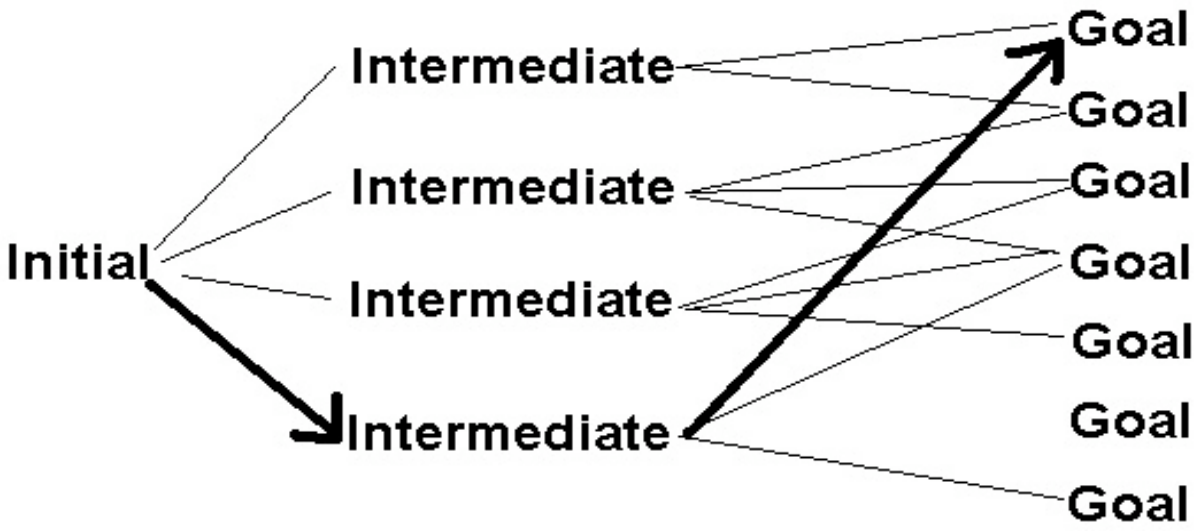

Figure 5. Creative Problem Path

As we master each individual task, like mixing paint, using gesture, addressing value and hue, we become more confident and more comfortable managing multiple elements at the same time. Practice lets us consolidate individual skills, and over time, more pieces of our operation start to fall into place. Our skills move from rocky to fluid, and eventually decisions seem so obvious we hardly think about what we need to do (Reisberg 2006, 136). Cognitive psychologists call this process automaticity. We would not want to have to stop and think about how to do every single task throughout our day. Through practice and memorization, we are able to automate tasks, even highly complicated processes, and keep our attention free to notice irregular activities, and unusual events that might happen while we are performing our normal activities. In painting we often hear about "happy accidents." This is when something unexpected or unintended occurs, like spilling a can of paint across the floor, but we realize the

splatter or particular shade of paint works perfectly or inspires a whole new direction in our work. The **operators** are the individual actions and decisions we make as we move through a process of problem solving. In the case of the happy accident, our attention is turned toward exploring the possible applications of what we just learned. We decide to investigate and take action to experiment with, and usually repeat the "accident" until the unlikely application itself becomes part of our regular repertoire. As we automate more tasks, we have many options available to apply toward a challenge. This makes for more interesting work. Automating tasks helps us get through our work more quickly, and allows us to focus our attention on new challenges because we have the old challenges already mastered.

Because these operators are so well practiced at the fluid level, experts will sometimes forget all the individual steps, because for them, the process is automatic. While it is important to develop a process, and get comfortable managing that process, we don't want to be so complacent that we stop challenging ourselves, asking questions or growing. We want to manage our practice, but we want it to be a creative, productive and progressive practice. That requires a balance of learning, experimentation, and evaluation. As Reisberg says "achievement rests on an intricate base…many skills, mechanisms and capacities contribute to our ability" (Reisberg 2006, 136) to achieve.

Some artists I have talked to about this project reject the idea that art making is a simple process of decision making. I never said it was simple, but the decisions we make, the problems we encounter, and how well we manage them do affect what we produce. It is not my assessment, but the view of Robert Motherwell that painting "is a triadic relation – composed of the artist, the subject, and the medium, (the medium) has a long history of its own, and important contemporary problems that every competent artist knows by heart" (Motherwell 1968, 139).

How well we manage these problems defines how well we paint. In "Expert Performance: Its Structure and Acquisition", psychologists Anders Ericsson and Neil Charness say that organizing our practice around the achievement of specific goals is a more effective manner of working. *Deliberate practice* is practice in an activity in pursuit of a particular goal. In particular, effective practice is directed to produce a certain desired result. Thus, just playing a piece over and over again on the piano would not count as deliberate practice, but playing it with the intention of improving and correcting errors would count (Ericsson & Charness 1994, 738). While I had always been taught "practice makes perfect" it seemed learning about the creative cycle, its structure and establishing clear goals may help my creative practice also be a more effective one.

Cognitive psychologists talk about the division of attention and the importance of focus. "Attention is an achievement…of performing multiple activities simultaneously, or an achievement of successfully avoiding distraction when you wish to focus on a single task" (Reisberg 2006, 136). If attention is limited, and difficult to manage, having the means to prioritize and organize how individual problems get handled helps us function. We make progress by focusing our attention and accomplishing one task at a time, until all the tasks have been completed and the goal is successfully accomplished. Expert problem solvers break their projects down into intermediate, manageable steps. Large goals become a series of sub-goals. I am not saying that all of art is a process of achievement and goal finding. I am saying that when we have goals that we want to accomplish, however large or small, being flexible, open minded, and non-critical helps us find ways to make progress, one small step at a time. In my case, I wanted to learn how to keep painting. More than I ever realized, this process has required that I try to solve the problem from just about every angle I have been able to imagine so far, breaking down the problem into what I knew and what I did not know about creativity, about problems,

about problems within problems. It has been exhausting, but finally it is starting to feel rewarding. In the past couple of months, I have been talking about painting and how hard it is to stay motivated. Most of the artists I know all seemed to agree that we usually work better when there is a set plan or deadline (not that we meet the deadline but having one helps). We decided to find a venue for a show and give ourselves that schedule to work against. As discussed in the section on problem solving, it is possible that the solution we need may not exist yet. It might also be that there are many steps involved to making that solution happen, but individual steps and incremental efforts pay off. I am fairly certain that I will be spinning through these cycles as long as I keep painting. With some flexibility, open-minded exploration and the resilience I have learned is so important, I am hoping that will be for a very long, (if not dizzying), time. In my case, I do want to keep painting, and I am working toward building a stronger body of work the same way we put the show together; one step at a time.

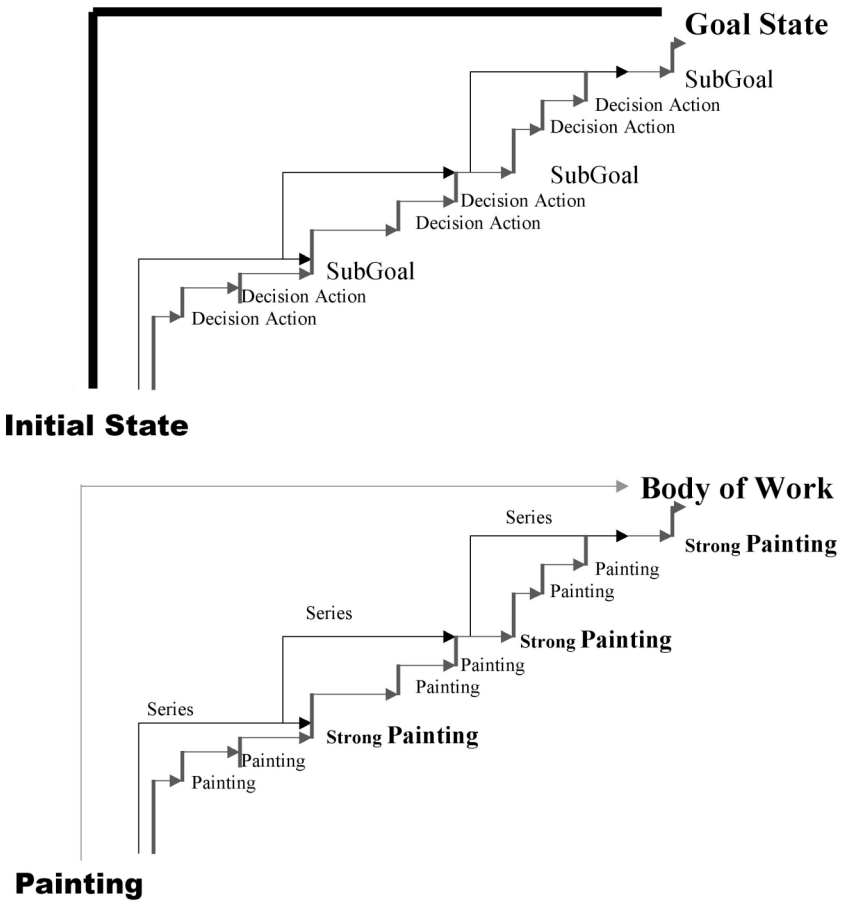

Figure 6. Sub-goals and Incremental Progress

Cognitive psychologists also note that different challenges require different approaches. When a problem is poorly defined the hill-climbing strategy is a commonly used method. It allows us get started, and at the very least, to take the important first steps, active steps. Even if

we don't know for certain what our exact goal might be, we start moving away from the problems and toward a better solution (Matlin 2008, 370). In a creative block like a painting freeze or a writer's block, this might mean breaking the tension of a blank sheet or canvas just by making a mark on it. In life, we might think of a dangerous or abusive situation where the person does not know where to go, but knows they have to get *away* from the attacker. Sometimes just taking the first step in a new direction helps us realize change is possible.

While the hill-climbing strategy sets us in the right direction, it falls short once we have taken those first few steps. As the problems become clearer or the solutions become more complicated, we realize we need a more organized approach. In the example of the exhibition I mentioned before, the exhibition started out with us trying to find a venue (anywhere) to host the show. Almost immediately after the venue was set, I realized such a general approach was not going to work. I needed a list of what needed to be accomplished in order to make the show happen, and I worked each day to take care of only the things that needed to happen immediately, that day. To create the list of to-do items, we discussed what we wanted the show to entail, and what pieces we wanted to include (labels, lighting, gallery listing, etc.). That would be working backward from the goal and establishing what steps need to be taken in order to move from initial to goal state. In order to actually accomplish the list, I needed a multi-faceted approach. I had to establish priorities and then establish sub-goals for each day in order to get through as many tasks as possible.

Reaching our goals and planning a path to achieving them is easier when more information is in place and the problems are well-defined. A *means-end analysis* allows us to compare and contrast the "differences between where you are right now and where you want to be." We can outline what is missing in our current situation that is present in the goal state, then

outline what *means* we have in order to reach a particular *end*. This sort of reverse engineering is also used in a working backwards strategy. This is one of the more commonly used strategies, especially for artists. We start with the goal or the mental image of the painting we want to produce, and figure out what we need to do in order to make our current painting more like our goal painting (mental image).

Many of my sources seem to say that success depends on focus and time on task. Limiting my attention only to the tasks that are productive gets me to my goal faster than if I waste time in unnecessary or unproductive directions (Edwards 1999, 33). Telling the difference between the two can be difficult. Artist Betty Edwards, author of *Drawing on the Right Side of the Brain*, taught her students various techniques for shutting off the critical impulses that interfere with creative work. For example, she had them flip an image upside down before they tried to draw it. They were forced to pay attention only to the lines and how they fit together. They found that by drawing something in a way they could not recognize it, in this case a portrait by Pablo Picasso, they were able to avoid being distracted by trying to make it look the way they thought it *should* instead of focusing on the way it *is*.

When our work becomes confusing, problem solving can help us identify what is going wrong and how to get out of it. Hawthorne tells us to simplify our goal and simplify our painting. When we are lost, we simplify the large areas of color, we look for large spots of color and we strip away any other concerns. "It is beautifully simple, painting. All we have to do is to get the color notes in their proper relation. The juxtaposition of spots of color is the only way" (Hawthorne 1960,18). When we are faced with larger, more complex, and sometimes overwhelming problems, it helps to know what we are really trying to accomplish. When my painting gets frustrating and my time, money or search for a decent studio space gets me anxious,

I have to remember that the only thing that really matters to my painting is that I keep painting, and that I keep the frustration and discouragement in a second, less important place.

Implications of Work on the Creative Cycle, and Problem Solving for Managing My Creative Practice

T.S. Eliot wrote in his essay *Tradition and the Individual Talent* (1920): "The more perfect the artist, the more completely separate in him will be the man who suffers and the mind which creates." What I have learned from this chapter that has most affected my practice is that my work, each work, does not define me. It is progress and an attempt at bettering myself and my skills and every time I face that challenge and approach that problem, I should be proud. While my goal will likely never be to become a "perfect artist", I would aspire to constructing a more perfect understanding of what it means to be an artist and how I might continue along that path. In separating myself from my work, I am able to look at it more critically, approach it more creatively and think about in more ways, as related to more subjects and with more possible meanings than just what I think or feel I have accomplished in each piece. As I learn to *move away* from my own personal perception of a piece, I can understand it in broader terms. Mostly, in his essay, I appreciate what T.S. Eliot wrote about the role of practice, and experience:

> I hinted, by analogy, that the mind of the mature poet differs from that of the immature one…not being necessarily more interesting, or having "more to say" but rather by being a more finely perfected medium in which special, or very varied, feelings are at liberty to enter into new combinations. (T.S. Elliot, 1922)

The practiced, the experienced, or the experts, are not necessarily more interesting artists than young ones. They are simply better at expressing what ideas they do have in interesting ways. I believe the interesting ideas come from studying ideas and actively seeking influences and information from many areas of life, or fields of study, as some researchers might call it. I think,

though, being an artist teaches us to see things differently. I might find inspiration for a painting in a conversation with my friend's five year old child, or in the biographies of Albert Einstein. Right now, John Adams and the *Founding Brothers* are sitting on my bookshelf next to the biography of Julia Child and *The Audacity of Hope* by President Obama. I am quickly realizing that the paintings I make are in part about the things I read, the stories I hear and the music, food, and conversation I share with the people around me. I think our sweet medium of paint and oil, hue and value provides a strong example of how these "special, or very varied, feelings are at liberty to enter into new combinations." We must mix them. We must learn about the world around us, and use that "finely perfected medium" to demonstrate what it is they have to say. Essentially, it is the same lesson I learned about solving problems, asking questions or believing there is only one answer to a particular question. Looking to what I think and feel is interesting only to a point. Looking to what can be said about politics, innovations, the passions, principles and philosophies around me seems to provide a vaster resource.

It is important to learn different approaches for different types of problems. According to Nickerson, "students who have been taught to explore different ways to define problems may engage in more creative problem solving over the long term" (Nickerson 1999, 395). Certainly in this case, the more I research, the more I seek inspiration and explore the ideas and areas that interest me, the more likely I am to *keep painting*. According to master painter Mark Rothko, creativity researchers Raymond Nickerson and Robert Weisberg, and cognitive psychologist Daniel Reisberg, the longer we practice our art, the better we become. When we feel we are making progress, it reinforces our motivation, because we can see that the investment or our time and energy is productive. Stoking my curiosity and maintaining a solid perspective on my ultimate goals of continuing to paint, learning what I can, and building my skills seems to be at

the core of that development. When I get frustrated now, I ask "Is this productive?" When I get stale in my work I ask, "What else could I do?" Most notably for me, when I feel useless and stupid, when I think I am bad at what I am doing and progress is not happening, I ask myself what else could it be. Then, I ask someone else. Then, I look up other artists who have struggled with similar issues. Then I feel better because I am reminded that struggle, and challenge, and progress are all part of the creative process and none of it comes easy for any of us. Then I keep painting.

Continuing to work seems to depend on finding new directions when our old directions fall flat. Daniel Reisberg asks, "Can one perhaps gain new mental resources or, more plausibly, find new ways to accomplish a task in order to avoid a bottleneck created by some limited resource?" (2006, 136). New mental resources may be as simple as learning how creativity works, or spending some time learning a new subject or skill. The more information we have to work with, the better, more flexible problem solvers we can be. In the phases of exploration and generation of the creative cycle I have learned specifically that my work reflects not only what I think, but how. I never need to know all the answers. I simply need to know how to find them.

CHAPTER 4 CRITICISM AND CREATIVITY

"Ad esse ab posse" is Latin for "from possibility to reality." The final phase of the creative cycle is the critical phase. This piece of the process employs "focused, disciplined, logical, constrained thinking" (Nickerson 1999, 397). Artists make the critical decisions that choose one idea from a broad range of possible options, and mold it into a final product. After we have gone through the process of exploring various subject matter, and generating the many great possible ideas for how to incorporate new ideas and new learning, the critical phase directs us to evaluate which ideas to focus on, how to manage our projects and how to edit our work as we develop it.

Critical thinking and criticism can come in many forms. Artists can spend time evaluating, reviewing, and refining their work independently as part of their process. They can seek input from other people via formal critique or informal discussion. The critique can happen in a group, talking with friends, working with a mentor, or from a professional art critic. Anything from a casual conversation to an article in newspaper can inform critical thinking and help us understand certain facets of our work. Unfortunately, as I learned all too well in my own experiences, criticism can be devastating if the feedback is overly negative, harsh or unconstructive. There is much to debate as to what the critical phase can offer, and the hazards it bares.

In this chapter I have tried to first understand some of the arguments on each side of that

debate and determine whether I think artists *should* incorporate a critical, refining or editing phase in their work cycle. I then examine some of the ways I have been helped and hurt by criticism in my own painting practice, and consider how I might plan to *manage* criticism more productively as I move forward. One of the central arguments is that criticism can be constricting. It can damage or limit to the extent that the idea, process, or even the artists themselves become so shut down, discouraged or dejected that they never fully explore their creative potential. Many artists, like Marcel Duchamp, believe it is an unproductive exercise and one that artists should avoid. Duchamp argues that editing a work by revisiting, polishing and refining one's raw expression detracts from it by taking away the immediate impressions of the creative hand. Other artists, and many researchers, believe the evaluative, critical phase of creative work is essential to learning and progress of creative development, akin to the philosophical canon "The unexamined life is not worth living." These criticism supporters would argue a work without a refinement or reflection is unfinished. Professor Dennis Brophy (of Northwest College) argues that "any creative behavior…seeking new ways to reach a goal, even if the goal is one of self-expression" (1998, 123-124) requires both "divergent and convergent" thinking. As much as we want to invent new things and break from the norm, those generative, creative, exciting ideas have to, at some point, be harnessed into a chosen, productive direction.

There are, of course, compelling arguments on either side. At this point, I can only conclude that informing ourselves about the possible uses for criticism helps us chose the ways that are right for each of our practices, and each of our projects, at a particular point in time. Productive artistic thinking involves the use of all our tools, including the tool of criticism. In many ways that analogy makes so much sense. Criticism can nudge the last detail of work into the exact right place, or it can shatter us to pieces. In any case, critical thinking helps us reflect.

Against Criticism: Marcel Duchamp and *The Creative Act*

While some people believe the critical phase is exceptionally important, others point to the adverse affects that "anger, fear, anxiety," and other stressors can have on the creative mind. Criticism, internal or external, can be discouraging. For other artists it can help us clarify our thoughts, gather feedback and understand if our intentions are translating the way we want. Like polishing silver, the reflection becomes clearer, but the history, the fine lines and imperfections are lost.

The great creative artist and Dada sculptor, Marcel Duchamp, argues though, that any tampering takes away from the power of the piece. In 1961, Duchamp wrote his now famous essay, *The Creative Act*. In it, he explains what he called "the art coefficient." This is the difference between what we intend to create, and what we actually produce. He says that in this measure between what is intended and what is expressed, and between what is expressed but never intended, exists the miracle of art.

During the **creative cycle**, the process of exploring, generating, and critiquing creative work, we make decisions that reflect our thinking and being in ways we may never realize. Consider an example from the painter Charles Hawthorne: One of his paintings was so sensitive that people could tell he had painted it on a Sunday morning (Hawthorne,1960 59). Duchamp argues for the importance of presenting creative works, and allowing them to be perceived, in a raw form. If Hawthorne had refined his drawing, tightened his lines, or changed his brush stroke, the painting may have lost its relaxed, groggy morning feel and therefore, much of its appeal. In the visual language, our statements bring with them certain connotations, a vernacular of sorts, where our accents tell where we come from. For Duchamp, it is not only the devil that is in the

details, but the miracle of art, and the most interesting, telling, and important details of creative expression.

When trying to assess the value of criticism, it is helpful to note that creative genius, or creative work of any kind really, is rarely understood during one's lifetime. In 1656, Rembrandt was bankrupt at the age 50 (http://www.artsstudio.com/reproductions/new_rembrandt-biography.htm). He was forced to sell his belongings, his home, and even his art collection. Centuries later, "Portrait of a lady" would sell for $28.5 million (http://www.forbes.com/2001/01/24/0124pow.html). The artist died owning little more than paint and a brush.

Public opinion is simply just that, the opinion of the public. In John Baer's "Point-Counterpoint; The Case for Domain Specificity of Creativity," he argues the importance of expertise and skill development in specific areas (painting, biology, calculus) in order to *be* creative in any of those areas. Creativity, he says, is not generic (Baer 1998, 174). One must understand the field of study well before one can function creatively within it. It is also likely true that recognizing creativity, or understanding work within a field takes at least some expertise and understanding of the creative arts. The general public often appreciates art, but will often have a very different impression from those with domain expertise. Art may or may not bring critical or commercial acclaim to the artist. According to Nickerson, external motivation (working for such recognition) can actually *interfere* with the creative process. It can direct our motivation to be connected to specific rewards, a dangerous prospect in a field with relatively few opportunities for extrinsic validation. For these and other reasons, Duchamp advises that it is a waste of time to concern ourselves with the problems of how art will be received or interpreted. All we can do is produce it.

In Defense of the Critical Phase

Unlike Duchamp, Nickerson believes one cannot be particularly creative without at least some critical thinking. He believes the creative mind works through each of the cycle's phases, including the critical phase. This form of thinking allows the creative artists, to paraphrase, to evaluate their ideas and chose a direction for their work. He outlines the commentary of other researchers who argue convergent thinking is absolutely necessary. They suggest that the critical choices in art make the difference between "total abandon" and a finished product, between being creative and being insane. I would question that one requires critical thinking to remain sane, but it does seem to help us focus on one project at a time. We choose which projects we want to pursue and which steps to prioritize.

Nickerson explains that many people believe that creativity and criticism are "polar opposites" (1999, 397), but it may help to think of them as a balanced approach to any process. Creativity helps us imagine what might be, but criticism helps us look at what is and consider what we want to do in order to make it what we want it to be. Whether we do that internally, or seek outside input, many researchers believe it is an important and central piece of the creative cycle. The problem is that being too critical too soon can "squelch" (ibid) good ideas, and being not critical enough can let good ideas go by without ever really being evaluated. This mix of creative and critical thinking is another sort of palette we need to lay out, experiment with, and find a balance that serves our needs.

As Rothko, Bond, Hopkins and many other researchers discuss, encouragement and role models are important. We can see that guidance is important, especially for the young or any artists trying to learn something new. This is where we begin to differentiate between critical thinking and criticism. Critical thinking is the "conservative" (Nickerson 1999, 397) and

constructive look at a situation that asks the questions "What now?" and "What next?" Until we are able to see all the possible steps for ourselves, our teachers and role-models help us to see the possibilities in order to decide how to move forward. Once we do build our own expertise, and become familiar with our skills, we can determine how much guidance we want and learn to understand the medium in our own terms. One of my favorite painters, Robert Motherwell explains his experience working with

> "an artistic medium…a living collaboration, which not only reflects every nuance of ones being but which in the moments in which one is lost, comes to one's aid;… seriously, accurately, concretely with you, as when the canvas says to you 'this empty space in me needs to be pinker; or a shape says: I want to be larger & more expansive..." (*The Collected Writings of Robert Motherwell* 1968, 139)

Personal Synthesis: Learning to manage and seek criticism as appropriate for goals

At many points in this process, I have tried to assess what I think of these arguments. Basically, I return to a question of balance and priority. Do I give more credit to the impressions of the people who make art, or to the people who study the making of art? Originally, I was inclined to think of the old adage that "those who can do, and those who can't, teach" (George Bernard Shaw). Now that sentiment seems arrogant, at the very least trite. I am more likely to think now that those who can, do, and those who love the medium enough to put aside their own passions to help us find ours, teach. Good teaching requires that the person has that passion for what they do. What they teach us most is to stoke that curiosity.

While I believe that the mind oscillates, as needed, among the separate phases of the creative cycle, it makes sense that as we develop expertise in any area, we would learn to group and organize our tasks to some extent. I think the creative mind does explore, generate and evaluate but not necessarily in a set, organized pattern exactly the same for each and every

project. Like the expert problem solvers that cognitive psychologists discuss, I believe artists achieve a certain level of fluidity as they spiral through the different phases of the process. It is up to the artist to decide which phases and skills to employ. If we listen to the researchers and the artists I have studied, we will realize that we need to a) build those skills in the first place, b) know the phases, factors, and problem solving paths available to us, and c) provide space in our critical thinking for recognizing that not only is there more than one answer to a question but the right answer might not even exist yet (Brophy 1998, 174).

The cycle may drive us to create our work, and review it, but we do not necessarily fix every so-called flaw. I suppose the artist learns to become *critical of being critical*. We make certain changes, but not others, we choose when to leave the work, and when to let it stand, however imperfect, because it shows our truer self. I am flawed, still struggling, far from perfect but the work I do is important to me. It was a very hard earned lesson that I can be meaningful and valuable without being perfect**. It may be the most important lesson I have come to understand in terms of making art.** Art is what inspires us. Whether a work, like this paper, helps me to think, feel, or just realize I cannot wrap everything up in a neat little package, it teaches me something, and I am better for having tried.

As mentioned previously, in my own experience, these phases do not happen in set, separate "states" like "think", "paint", "revise." Rather, as each part of my work comes together, I pause to consider whether that decision, say a particular line or tone "works." If it bothers me, I fix it, or decide to let it go for a while and see what my next steps do to help it take shape.

Most artists have had the experience when reviewing a work that there are certain aspects you like and other areas that bother you. If you can identify what the bothersome parts are, you can choose a path toward resolving them, i.e. you can solve your problems. If you cannot

identify the particular factors within the work that are causing tension, you are left without direction and without any idea what you might want to do to fix things. Brophy explains "creation, invention, and innovation" require "a multi-faceted process having many stages, varieties, and uses" (1998, 123) of creative problem solving skills. Identifying each stage and step in the process can be difficult, especially because artists regularly work to find and solve *new problems*. When this happens, it is often helpful to ask for input to help think through what the problem might be, and what I might do to either identify or resolve it. Because there are normally specific problems on one of more areas of painting (balance, palette, space, drawing, etc. or actual sections of the painting), the person reviewing the work must be both aware of the "problems of painters" and have *creative solutions* for managing them.

Critical thinking is speckled throughout the process. **At this point in my studies, I have learned to manage the difference between thinking critically about my work and "criticizing it". I follow the advice of T.S. Eliot and separate myself from my work and focus on what I might want to keep or change, not necessarily what I like or do not like about it.** I try to focus instead on finding some balance between allowing the work to happen and directing it to do what I want it to do. Within each step we can consider whether the paint recedes or projects, does it need a cooler or warmer tone, a harder or softer edge. These are critical steps but they are steps that seem to, like the African story of creativity, weave like threads holding together the entire process.

Once all the steps are in place, we can (if we wish) evaluate the piece as a whole but criticism can be injected at any stage. In problem solving terms, the criticism we allow to enter our "problem space," can interfere with our decisions and influence which path we choose. It is important to be aware of what impact another person's interference can have on our work and

what directions we pursue. It can be helpful when we are having trouble choosing a direction, but it can also push us away from paths that might prove interesting, educational, or productive. The danger of injecting criticism too early is that it can shut down the learning process, or discourage us from working long enough to really get invested in what we are doing.

Negative feedback, or criticism we are not prepared to process or appreciate can interrupt the creative process. Artists can be left questioning themselves, doubting their skills or confused how to move forward. **Getting the right form of criticism, or considering the kind of input that might be most helpful, and considering whether you are at a good point for input within your process can make the difference between having a constructive conversation and having a review be counter-productive.**

Anyone who knows me has probably heard me talk about how amazing my family is. Specifically, I love to explain my first experiences with my mentor, with critical input and with outside criticism. As I explained earlier, a good mentor has that curious and passionate love of learning, and they share that excitement with us. In my case my father noticed I was taking to water colors and got excited about what I was doing, or, at least, took an interest in *my* interest. Every week he would go to the grocery store, usually after church on Sundays, and do the family shopping for our six member family plus one dog. Without fail, Dad would bring in the bags and bags of groceries and at some point pull out a pile of mushrooms, a few plum tomatoes and one perfectly plum shiny eggplant. He would set them up on the kitchen table, (in what I later learned was a fairly elegant composition), and for the rest of the afternoon, between grocery shopping time and preparing that night's dinner, "eggplant-parm-again" (Dad's version of eggplant parmesan) I was expected to do water color practice.

Dad would come by from time to time and give me the very simple vote "crap", or "not

crap." "Crap" simply meant he knew you could do better, or it was not your best work and try again. "Not crap" was usually accompanied with a proud smirk, and a shrug. It let us know we were doing OK, but not to let it go to our head. All of this, of course, has to be explained in the context that my dad, like my mom, are two of the proudest, sweetest, most supportive individuals on the planet. That is no exaggeration. I had an art show recently, and although I am 34, my mother still showed up at my work, dropped off warm cookies and specially decorated homemade cupcakes that my friends are still talking about. These are the amazing mentors and encouraging role models I am lucky enough to have on my side.

While their criticism has always been present and available, it was never harsh. The trick of my dad's eggplant project was that when I was done painting, he would have to cook it all into dinner. Not only did it teach me to see the food in flexible ways, both as objects for still life and dinner, as soon as Dad was done voting on my work, I got the opportunity to vote on his cooking. "Crap" or "not crap" will always mean to me that someone has invested in me. They studied my work and know my abilities clearly and carefully, they are exactly aware of what I capable of and where I am in my development. More than any other reward in the world, a smirk from my dad and a simple critique of "not crap" makes me prouder and happier than I can really explain. I think this speaks to both the importance of invested and encouraging role-models, and the warm, funny, ways criticism can be positive, honest and helpful.

As an adult, **I have learned that it is up to me to decide how and if I use each phase of the creative cycle and when. Learning the pros and cons of criticism, the different forms of criticism, trying to find a personal balance and productive ways to include all of this new information in my practice has been, and will probably always be, a challenge**. These insights have taught me that creative production is not easy, nor will it soon get any easier. It is

not, and there will probably always be periods of frustration. But it does mean that I have a better understanding of where I am in the process, so that I do not give up.

Rothko's advice speaks more loudly and clearly to me than any other at this stage in my development: "Unfortunately we can't think these things out with finality, but must endure a series of stumblings toward a clearer issue" (Rothko 2006, XII). In many ways Rothko's writing, like his color field paintings, focuses on the lack of an inherent meaning or fixed answer. Art means different things to different people. His study of existential philosophers like Nietzsche would guide him towards a nihilist, subjective system of understanding painting and art making in this way. Like the philosopher, there may only be a clumsy faltering towards a greater clarity. The point is not to be perfect, but to try to learn something new, to find inspiration and translate it, digest it, and offer it to the viewers to ask their own questions.

In *Writings on Art* Rothko said "Painters and poets might say just write or paint yet their work is perfectly ordered" (Rothko 2006, 13). As much as we would like to think art making is easy, completely intuitive, and whimsical, there is some amount of intellect, decision-making, and technical skill that goes into the creation of any work. Most work, at least of the thousands of artists I have known in my life, is anything but easy. Even raw art, or Arte Brut, is constructed through some process, and comes into existence through the mind, hands, and labor performed by the artist. I think in many ways, I respect the perfectly measured, refined work of careful, critical artists but, at least at this point, I still side with Duchamp. I find the raw, rare and revealing work of unanswered questions and unrefined, unfinished processes most interesting. Perhaps the less constricted the lines, the easier it is to read between them.

If the researchers are right, creativity works best when we have freedom to explore and experiment and are free from fear. Those conditions can certainly exist in a healthy balance with self-evaluation and criticism, but there is sometimes a thin line between self-assessment and self-sabotage. Often when artists first leave school, enter a new phase of life, or experience some change in their environment, it causes stress. There are unknowns, frustration, and change itself which can be uncomfortable. We think that we are supposed to know what to do, at least to some extent. When we start to feel confused, or pressured, or that our work simply is not working, many of us go straight to doubting our skills, our abilities, and ourselves. The truth is that when we are in a new situation, we simply have to give ourselves the opportunity to learn how to handle it, or how to change what feels off. I am not so trite as to say be your own best friend, but it does help to think what you would tell someone else if they were in the same situation.

Duchamp's essay (1966) considers "transubstantiation" as the final stage of the creative cycle. An idea is poured into an object, but the object is left to the viewer to interpret. Allowing the work to be observed in its raw, un-criticized form can tell the viewer more about the artist than a perfectly structured refined example because it reveals the artist's thinking and process. He says there are things that show through our work that we never intended, and there are things we mean to say through our work that do not always translate. These little things that reveal our process, bare our character and show the artistic voice are what makes art interesting. He argues, I would say passionately, against erasing them.

In many ways, the same translation process happens with criticism. An idea or impression is put into words and delivered to an audience. We do not have control over how it affects them, how it is perceived, or how the recipient interprets what is said. It is important to know when we are asked for input, what kind of feedback the person is requesting. It is possible

that they are fairly comfortable with the work and are looking to adjust only one certain part. They may simply need a word of encouragement. They may want a broad, unrestricted, brutally honest assessment. As artists, or reviewers, we can frame the critical conversation. We can help the conversation by trying to understand what they are trying to achieve, what they are struggling with, or why they asked for our input. As artists, we can ask for an open and honest general impression or feedback on the most minute detail.

In the same way we can expand and constrict our own critical thinking to broad, general and ill-defined problems or we can *constrain* our focus to the direct, well-defined and specific adaptations within our work. Examples of this in a design project would be the difference between choosing between 11 point font or 12 point font, versus looking at the work and asking if the design as a whole matches the message the work is supposed to convey. Sometimes our work is very close to finished, and other times we think we are at the end of the process only to decide that we need a major overhaul. The critical phase is a powerful tool. Like a sharp knife, we should be certain to use it safely and understand the dangers of wielding it without caution.

CHAPTER 5 THE NEW QUEEN: ON BUILDING THE HIVE

Figure 7: The New Queen, painting by Julie Barrett

The basic point of this research was to learn not only how to start painting again, but how to keep painting in the face of distractions, difficulties and challenges. I wanted to learn how to paint when things were going well, but specifically how I might prepare myself to continue painting when things become difficult. One of the most important lessons I learned was to stop expecting that things *should* go well and things *should* come easily. I now understand that creative endeavors, like painting, are, at their core, challenging tasks. One has to use her technical skills and expertise in an area not only to produce creative ideas, but also to turn those ideas into creative objects.

There is an old adage that says an Irishman always answers one question with another question. The same, I think, may be true for the painter. Throughout the creative process, each time one question is answered, five new ones arise. Instead of feeling like I should have all the answers, this research has helped me realize how important it is to ask all my questions.

In the second chapter I explored how creativity is defined and how it is supported or stifled by our environment. My research challenged many, common assumptions made about creative talent—for example, that creativity is a finite resource, something you either have, or do not have, and inherit in set, specific amounts. Instead this research supported the theory that creativity is a cultivated skill. It can be first introduced to the young mind, but it needs to be nurtured throughout our lives if it is to be fully developed. We cannot know what we are not taught; we cannot believe if we are not allowed to dream. Creativity is the key to finding things we hope to accomplish and discovering, inventing and imagining the ways in which we might achieve them.

In the third chapter I looked at how ideas, problems and solutions are generated. The creative cycle and creative problem solving skills help us to bring the ideas we imagine into actual objects, artworks and innovations that change the world. These big knotted problems are untangled one single tether at a time. In the same way our skills are constructed and the great expanse of possibility is woven together into our solid and competent abilities. We are creative, but the critical skills and exploration involved in the creative cycle allow us to organize our great ideas into productive steps. Seeing those steps, and learning all the possible ways to fly and fight through the problems that would stop us is the difference between what we achieve and what we had hoped to achieve. If Duchamp calls this the art coefficient, creative problem solving is our catalyst, and our catapult.

At some point in writing this paper, I started to think there were so many questions, so many things to worry about, I was not sure I would ever be able to manage them all. I became critical and discouraged, a feeling, as I have explained, familiar to me from a very early age. Instead of listening to the people who told me I was inept, I realized that the skills that make me a good artist, also make a good person. I am resilient. I can listen to criticism and accept or discard it as I see fit. I do not under any circumstances believe blindly any of the information presented before me. I examine it. I move around it. I try to understand my perception of a thing and consider my perspective in relation to it. I look at it like an artist. I study the ideas and impressions before me and I decide what they mean and what they mean to me.

Luckily, I also learned that I do not need to manage all my problems at the same time. As I learned in the research for the creative problem solving chapter (chapter 3), I can take a less unified approach. I can break down my troubles and work through things one priority, necessity or 'feel like dealing with this piece today' item at a time. As I learned in chapter 4, I can take the same approach to the use or discarding of criticism. I imagine we can smash the critical idea like glass, and melt, fuse or reuse bits of it as much as we like. We can dull our rough edges or sharpen our rims. It is up to each individual artist to decide how jagged their work will be, how raw, and how revealing. In every case though, I learned that criticism is the tool that is best handled carefully, pushed softly. Until we are familiar, trusted and secure, we cannot wield the critical tools without the danger of cutting down the shoot that would one day bloom. We cannot stem the stem.

During the process of writing my synthesis, I was reminded of the great character, The Queen of Hearts from Lewis Carroll's *Alice in Wonderland.* In the novel, the queen is described

as having an erratic, explosive temper. Considering how hard it is to get our whole world in order, to find balance, or at any point peace, I started to think how clearly I understood her sense of frustration. I also began thinking about the role of that queen, and the fate of the roses she so loved. If you know the story, these little bushes had been tended to from seeds, had grown and had been given the time, light, water and all the conditions that would nurture their health and growth. But they came up white, when they were supposed to be red, so the guards, not understanding that this would kill her roses, painted them red, hoping to please the Queen. Not surprisingly, they incurred her wrath instead.

These kinds of derailments, deterrents, and distractions happen to us all the time as artists. We work to become artists, but then cannot afford our supplies. We work to find studios, then can't keep up with the increasing rents. We seek criticism and end up feeling defeated and dejected. It is not an easy field, but it is one we believe is important. I believe finding success, however we might define that, becomes easier if we learn to anticipate and solve problems, instead of allowing them to deter and discourage us. I believe this research was an important part of my creative growth. We work to be creative, to see the world as artists. The people who are not artistically minded, the people who assume the world is as they see it, do not see the beauty in such things, and do not allow for the possibility that beauty exists beyond our ability to perceive it (Hawthorne 1960, 90).

I began to think I needed to be my own queen; a new type of queen. The queens, both in Carroll's Wonderland and in the beehive I spoke of earlier in the paper, each have a unique function and a unique perspective. Their job is to rule, but it also to protect and serve the health and well-being of those around them (their roses, attendants, and hive).

This is what I realized I had gained from conducting this research and finding my way back to painting. I had a new found responsibility to commit to my kingdom. I did not to expect to find peace, but I needed to work toward balance, and to discover the things for which I was willing to fight. The wars between resources and time, energy and expression would always exist. This new queen was responsible to her creative community and, as much as she needed to create her work, she needed to create opportunities for other people to work. If I wanted to live in a creative environment, I had better learn everything I could about what that means, what that requires and how important it is for me to serve as a maker and a mentor. The act of painting is bigger than the painter herself. It creates the opportunity for other people to discuss art, to decide whether they like it or not, and in many ways pushes them to think what they would have done differently or could be doing in their own lives and artwork. I was becoming a better painter, and my painting, I hope now, reflects a better part of myself.

The New Queen was one of the first paintings I did that helped me understand what it was I was trying to say in my work. Before I had the logic or the verbal language to explain myself, it was simply an idea I explored in a sticky, fluid and plastic medium. That allowed me to express myself before I could put my ideas into words. I think this is exactly why I love to paint. I am thrilled to return to it and allow my thoughts to stay in that vague and unadulterated space. For now though, I am glad to have gone through the exercise of bringing these ideas to (somewhat) clear and concrete directions. In this next section I am going to conclude with the future steps for me, what lies beyond painting and because of my painting--the things I have been doing and plan to do with the information I have gained and my responsibility to acknowledge it. (A lesson I learned from a reading I highly recommend to any artist: Allegory of the Cave, from Plato's *Republic*.)

Several semesters ago I received an invitation to apply for the Dolores Gallo Award through the CCT program. The award is given to fund projects in creativity by reimbursing the project planner up to a couple hundred dollars. Based on the things I was learning about creativity and the importance for young children to have positive experiences and encouragement, I submitted a proposal to do an art project with a group of kids in the Boston homeless services. I called it the Jade Plant Project, based on the ideas that the jade plant, like the ones my grandfather used to grow, are sturdy. They seem to thrive under the right conditions, and clippings of an original plant will regenerate when re-planted. It seemed a good analogy.

I received the award and proceeded to contact the organizations I had planned to work with as soon as possible. However, it took almost six months to get a single response. I was surprised as I was basically trying to give away $200 in free art supplies. Luckily, I had learned to be resilient, and from Professor Greenwald I had learned to be (or try to be) more comfortable with ambiguous circumstances.

I spent an additional two to three months getting permission, establishing contacts and working out plans with a wonderfully kind social worker/artist at The Home for Little Wanderers. We spent still more time budgeting and planning how to make the project work within the guidelines of the agency and how to get the most supplies possible for the money and time we had available. I had learned from Peter Taylor that careful listening was key in setting and meeting collaborative goals. From Professor Arthur Millman I learned to apply logic. I learned to study various social situations and find a broader perspective in my politics and philosophies the same way I do literally and figuratively in my art. This budgeting, in and of itself, was a great lesson in creative and critical thinking. Finally, I learned to shop like my father on that grocery Sunday I mentioned before. I had to creatively feed a large group on a set budget.

2 sets of crayons for $4.00 or 4 sets of pencils for $2.00? The pencils would probably last longer, but the children find the crayons more comfortable. I found myself standing in the aisles of the area arts and crafts stores debating dollar amounts against artistic values. At first, I concluded, just getting them to draw was more important than getting them to try a new medium. Crayons it is. From Professor Carol Smith, I learned of expertise. I learned to break down a problem into simple steps. I look at the problem from many angles. I have learned to employ perspective in my own practice and to solve problems in creative and critical ways. Arriving at those solutions called for managing cognitive resources as well as the physical, environmental, and ecological ones. I solved these problems, as cognitive psychologist Daniel Reisberg had asked, by overcoming the bottlenecks and the shortcomings.

The volunteer coordinator for The Home for Little Wanderers, the country's oldest child and family homelessness organization, put me in touch with two social workers in the Boston area who led art groups with children. One of the social workers staffed The Roxbury House, a center that hosted an older group of children. At the other site, the social worker arranged for me to visit, as a visiting artist, The Boston Hope's facility's "Art Afternoons." I sent art supplies to both groups and each set of children decorated t-shirts. While it was much more difficult and stressful than I ever would have imagined, it was fun to talk with the kids about what they made and show them how to document their work. We set up a digital camera on a tripod and each kid photographed the t-shirt they made. At the Roxbury facility, they sent back the shirts so I could document them, but both groups ended up with an art project and a nice stash of supplies for their future projects.

As it turned out, a few months later I got an email from the social worker who ran the Art Afternoon program at Boston Hope letting me know that the shelter was being closed for lack of

funding and inviting me to join them for the closing celebration. As much as I understand the economics of a crashing economy, it was heartbreaking to watch news stories about Wall Street bonuses and bail-outs at the same time these children and their families were losing such a nice program, and yet another opportunity. I tried, in vain, to find another classroom for them to continue their art afternoons, but I was able to speak to the people at my workplace, Massachusetts College of Art and Design, to provide scholarship information and program details about the K-12 programs available at the college. The kids from Boston Hope were welcomed to apply for grant-funded scholarships to the fall programming at MassArt.

Again, learning and thinking critically about the situation, it seemed unlikely that these kids or their families were in a position to travel to MassArt on a regular schedule. Often, families dealing with homelessness have to move shelters and shuffle around the state. They are not likely to be able to commit to a 15 week course of classes. Even if those classes are free, having extra programming and artistic enrichment for a child has to fall in a line of priorities after having the family fed, healthy or even together. So while I sold my own t-shirt designs at the college's spring sale, and made an alphabet book that sold well enough to sponsor an additional scholarship for another child to attend the MassArt programs, I still wasn't satisfied with the solution.

As part of my learning about creativity and the need to take care of my own environment, it became clear to me that I needed to find a studio to paint in that was not part of my home or immediately connected to where I breathe and eat. It is simply not a healthy environment, or in any way a safe or smart practice. For the past several months I have been looking for a studio space, but Boston is particularly challenging because it combines high rent with a lack of art studios. Then I came across a posting from the YMCA of Greater Boston. They had a lease

cancellation for the fall 2009 term because a charter school was unable to keep their program running. As sad as that is, it meant the YMCA had available space that was both fit for young children as classroom space and that happened to be almost directly across the street from The Home for Little Wanderers' main offices.

I met with the director of the YMCA and submitted a proposal to take one of the classrooms as a painting studio that I would also invite a social worker from The Home to use during the day for art and classroom activities with her children. It turned out the YMCA director was also interested in having the main foyer space of the building transformed into an art space. Because the building is 24-hour access, it is perfect for a painting studio, but furniture or anything people might sleep on cannot be kept in the foyer. I proposed that in exchange for use of a second classroom, I could help set up the art space, and coordinate monthly exhibitions, using both the work of the professional artists I know and the projects of the kids who would be doing art projects in the studio classrooms.

I began to recruit help to coordinate such a show at the YMCA building. Having learned how long the previous project had taken to coordinate and execute, I was hoping to have a plan in place and ready to go by the time the proposal might have been reviewed. Again to my surprise, my friends and colleagues were very interested in helping, and interested in having an art show that would benefit such a cause. They were so enthusiastic, in fact, that we began pursuing venues for an art show even before the YMCA option.

In August 2009, more than twenty other artists and I hung the Jade Plant Project Art Show in the graduate gallery at Massachusetts College of Art and Design. On November 25, 2009, I picked up the keys to my new studio classroom at the YMCA. Soon, we will begin the conversations regarding converting their front foyer into an art space. Hopefully the artists who

participate in the exhibitions will be invited to present as visiting artists with the children in the YMCA programs, and the children will be invited to help curate the art exhibitions of the artists work. The Jade Plant Project has grown to an international group of artists and art lovers with 76 members from as far away as Chile, China, England, Columbia and the Netherlands.

I have every faith that the CCT program, and the lessons I have learned in conducting this research have inspired me to be a more creative artist, but more importantly, they have inspired a broader sense of creative growth to take root. And so, in the final lesson, I think the research has come full circle. From Professor Gallo, a woman I have never met, I have learned that with a little encouragement, creativity grows, and anything is possible. I never imagined that small grant and my little t-shirt project would mean so much to me, but then again, Duchamp says, that in these spaces, between what we intend and what we never intended to express, lies the miracle of art. This new queen sees the world, and her creativity, much differently now. Little bees shoot from the hive. They fly in their own direction, helping things grow as they buzz about, exploring the world before them while trailing a world of pollen and possibilities behind them. Our role as artists is like that of the bees, not only to make things, but to make things possible.

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