Teaching Contingencies
Deleuze, Creativity Discourses, and Art

by

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Abstract

This dissertation, flying between aesthetics, visual arts, and political/cultural/historical issues, traverses lines of stratification, and (de/re)territorialization to examine uncertainties in making and teaching art. In keeping with a conviction that nothing is unitary, that everything is always connected to countless others, Deleuze and Guattari’s metaphor of rhizome is the central organizing element in my work. My research questions what is meant by creativity, whether assumed to be a gift, talent, or innate quality, and what is meant by teaching art in university, which assumes creativity can be organized and developed.

Differing discourses of creativity exhibit a general continuity of agreement that creation takes place within chaos, and forms where chaos and order meet each other. I posit that contemporary discourses of creativity hegemonically reinforce capitalism as a system of nomadic power and of constant de/reterritorialization. All, in a capitalist system, is linked to the construction of the urge to consume, and therefore the acceleration of capitalism necessitates an increase in the rate at which we manufacture venues for consumption, even in such innovative ways as by making creativity itself a consumable package. How do we resist this?

From a Deleuzian point of view, creation is a becoming event, as destructive as productive. Creativity, which is about freedom, occurs on a plane of immanence which sifts chaos and multiplicity together to break lines. Teaching, however, is on a “plane of organization” where rigid and dichotomous segmentarities of personal and social life
operate. I suggest that artistic knowledge can be theorized and taught, in the Schönian sense, but creativity, a matter of “lines of flight,” is fundamentally unrelated to artistic knowledge. I argue that what can be taught is technique, theory, and the material language of media, and that these should be taught as explicit professional objectives, not as “creativity.” We can teach the value of breaking away from the false seriousness of creativity, with reference to Dada. We can teach the enjoyment of chaos and the confrontation of it. We can teach resistance. We can teach a love of complexities. We can teach play.
Acknowledgments

For my son, Mohammad:

Again, another chapter of my life is ending; another beginning is coming from ending, ending to beginning. Everything changes, everything ends and begins. I bind each day to each day with new aims, new hopes, new fears; I assemble them in chains of beginnings and endings. Everything changes, everything ends, but my love for you, Mohammad, always stays unchangeable. I painted before you, but color became brighter after you; I drew before you, but lines came alive after you. I have ended this chapter with your help and support and will begin again, seeing my hopes in your eyes.

For my friend, Valerie Ashford:

Life is heavy, with its ever-changing chains of beginnings and endings; heavy and often unbearable. Living is like walking through darkness, alone and vulnerable. But, there are some people who stand out like warm, hopeful lights in the darkness. You, my dearest friend, Val, you are one of those lights, which burns only to lighten the cold and the dark, without any expectation, without any selfishness. I’m ending another chapter of my life in which sometimes I felt I was alone, in which I felt I could not bear the weight of life, I could not continue, but you have always been there for me. This chapter could not been completed without your friendly and scholarly support. I am ending this chapter and will begin again, believing that nobody stays alone in the dark.

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Foreword

The first node of text in the thesis “Starting in the Middle” describes the following dissertation as an epic in medias res, an effort to work against a beginning-middle-end structure, in spite of constraints imposed by the fact that we read first word before next word, top line before next line, numbered page after numbered page, always from the top/front/beginning to the bottom/back/end. It may be helpful to the reader to understand here, however, that the “scaffolded” form of the thesis is more than formal—it is in keeping with the anti-linear arguments made throughout, and reflects a fundamental premise of the thesis. There is a traditional table of contents preceding this foreword, but this is purely for administrative reasons—the thesis’ “real” table of contents follows below. This table, like much else in the work, is based on Deleuze’s rhizome model, and although the table following may appear playful or anarchic, it is important to make clear that it is not offered as reactive “playing” with convention, or a reactive “resistance” to control. The rhizomatic model is instead a creative, proactive, positive theory or arrangement of possibilities. A primary proposition of the thesis is that multiplicity is our reality now—texts, no more or less than any other aspect of living now, are dynamic objects and contextualized by dynamic paradigms. Narrative linearity is no longer a functional model in writing, reading, interpreting, or thinking, if indeed it ever was, and the table of contents below invites the reader to approach the thesis as it was conceived and written: in as random an order as possible, non-hierarchically, and without the illusory hope of conclusion.
Starting in the Middle

Each time I have attempted to do theoretical work, it has been on the basis of elements from my experience—always in relation to processes that I saw taking place around me. It is in fact because I thought I recognized something cracked, dully jarring, or disfunctioning in things I saw, in the institutions with which I dealt, in my relations with others, that I undertook a particular piece of work, several fragments of an autobiography. (Foucault, 1981, cited in Rajchman, 1988, p. 108)

The following dissertation is, from beginning to end, an epic in medias res\(^1\). There is only as much beginning, middle, and end as is imposed upon me by the fact that we read by sequence of word after word, line after line, and page after pages, that pages must be numbered, that a material text has a front (beginning) and a back (end). These are impositions against which the fundamental premise of the thesis struggles. Points of capitulation to linearity will include a description of where my thinking about art, art teaching, and creativity began, although I do not write about any particular destination in the thesis. I have never believed in a final destination. Any destination is as much a starting point as it is an end. Each beginning in this dissertation is a middle, a destination, a start, a closing. And yet there is some imperative to direct the reader forwards, step by step, as a matter of custom, literary or textual courtesy, as a norm. There are a number of reasons why this normative leading of the reader is discordant with my intentions here; the thesis will not offer much of such standard linearity because I take issue throughout the work with modernist paradigms of predictable A-to-B-to-C structuring. The rationale of my objections to linearity, to predictable sequencing, and hierarchies will become clearer as the reader confronts various pieces of the work, but in order to bring the reader closer to accepting this approach, I will contextualize the immanent structure by

\(^1\) Latin literary term referring to all action taking place “in the middle of things” (Abrams, 1999, p. 226).
explaining how I have came to my research, what I mean to do in the dissertation, and why it is structured a-sequentially and non-hierarchically.

**Concepts Beginning (from Ending)**

I started teaching at the University of Arts in Tehran, early after receiving my MA. As a teacher, I wanted to seek ways to address the deficiencies in art instruction that I had seen as a student; I had an unformed, perhaps naïve will to effect change in the practices of art teaching. I could not, at the time, articulate the details of what would constitute such change, and it is likely that I was unclear even about why change ought to take place. “Making a difference” was important, in its vague way, and like most students, I knew there were better ways to be taught. With no gap between the end of my studying at university and the beginning of my teaching career, I found it easy to empathize with my students’ difficulties when they tried to develop personal, original artwork; I had quite recently been struggling with many of the same issues, and so could relate fairly immediately to their challenges. One question in particular arose during my own studies and travelled with me into my teaching: what, exactly, is “an artist?” I consistently questioned whether or not I was one myself; I knew how to draw realistic portraits and figures, to apply materials and mediums, and to compose forms and colours. I knew the fundamentals of visual aesthetics, integrity of form, and principles of composition. I was, according to all the assessments and evaluations made of my work, one of the best students at the school, and had enough skills to make art, but was I “an artist,” was I “creative?”
My studies took place at a time when the dominant discourse in the art world and in art educational institutions was modernist. In the late nineteenth and throughout most of the twentieth centuries, the art world experienced modernism “in the form of a tendency to emphasize the importance of formal values at the expense of overt narrative content” (Crowther, 1993, p. vii). This aesthetic view was paradigmatic, in tandem with the modernist impulse which was already underway in economic and social spheres launched by the scientific and industrial revolutions of the seventeenth and eighteenth centuries. Division of labour and a rigid compartmentalization of the process of production into stages and tasks assigned to different individuals was modernism’s new pattern of production and it was generally assumed to be of value because of its greater efficiency. Efficiency had been the ultimate goal, not only in the production process, but also in the sphere of knowledge and culture. Hence, attempts had been made to separate knowledge and experience into distinctive domains in order to understand and pursue them more efficiently, and as a result, to achieve a more advanced understanding of the world in order to control it. The idea of unlimited progress by controlling the world had become the dominant idea in the modern epoch. By virtue of this paradigm, modernism developed an epistemology, a metaphysics, and a cosmology, where the universe is conceived of and defined in terms of a mathematical and mechanistic order. Modernism formed a paradigm emphasizing reason, rationality, and the linear advancement of knowledge. This impulse in the art world eventuated the rise of non-representational art, and the idea of autonomy of art (Keith, 1995). Art production was no longer dependent upon factors external to art; no longer did the artist plead with Calliope, or another divinity for inspiration, it was “motivate[d] and justifiable in purely artistic terms”
Modernist artists were the elite, who preferred to step away from the expectations of the social mainstream (Milbrandt, 1998) and to concentrate on individual inspiration, originality, and purity (Clark, 1996). They sought unity, coherence, and meaning, which was lamented as lost in everyday life. Art and creativity were seen as features of individual genius and thus as unteachable. Hence, my trouble with the title “artist” arose because of its attributions to eternal value and mystery, creativity and genius that lead to a mythic sense of “being an artist” as opposed to a historical one.

When I started to teach, I wanted my students to be creative, in the sense advanced by Doll (1993), who argues that creativity occurs through “the interaction of chaos and order, between unfettered imagination and disciplined skill” (p. 88). I wanted to help my students beyond coaching them on a personal level, or beyond merely developing assignments that would lead them to practice certain techniques or concepts. At that time, all my knowledge of teaching methods referred to the models applied by my own university professors, who typically seemed to believe in an educational system consistent with the modernist doctrine, which defined itself “in opposition to the earlier idea of the bohemian artist who, trained in a master’s studio, led an unworldly life” (Mattick, 2000, p. 33). They were also significantly influenced by the Bauhaus educational program formed in Germany by Walter Gropius in 1919. Affected by modernist premises and progressive art developments, Bauhaus suggested teaching the principles instead of simply focusing on the traditional skills, such as representational drawing, anatomy, perspective and the techniques of painting and sculpture. Bauhaus
emphasized principles for constructing “visual experience.” Singerman (1999) in his book, *Art Subjects: Making Artists in the American University*, describes how substituting the term “visual” for “fine” arts, as the name of the programs of Bauhaus, was significant enough to establish a following by many art educational institutions. Singerman contends that this change allowed the emergence and growth of the term “design” which covered all forms of fine and applied art taught in academic institutions. This change fortified modernist doctrine in art institutions: “Vision counters the vocational, the local, and the manual; the visual artist shapes the world, designing its order and progress” (p. 69).

Therefore, what I knew from my education was based on Bauhaus-style programs which located “the subject of art in the artist, not in an external world of real or ideal forms. From this perspective, the principles of composition provide the language in which individuality was spoken” (Mattick, 2000, p. 33). But, I wanted to help my students to understand the underlying concepts and processes of making art, and the complexity of artistic thinking. I wanted to show them art’s relation to a greater social world, to lead them to a historical self consciousness, to help them to be creative instead of just absorbing the techniques and the principles of art production. I began to realize that teaching was a far more complex activity than I had formerly thought. So, I needed to know more about teaching and learning and the nature of the art making process. I started to read and contemplate the problematic issues involved in my teaching career. A Modernist paradigm seemed to me to be losing its power to create adequate
understandings of thinking, behaviour and phenomena (Doll, 1993). As MacPherson (1995) points out, modernism was “in trouble on its home ground” (p. 269).

Over the last decade, we have witnessed many radical changes in economic, social, and cultural spheres. Patterns of industrial production and rigid categories established by modernism have been questioned by the various strains of knowledge. The boundaries between modes of knowledge have blurred. The modernist social structures and political grouping have undergone fragmentation and complex realignment. Likewise, art-practices have faced scepticism about the rigidity of categories. The prolific notion of the “end of art,” ubiquitous in artistic discourses and yet highly controversial, has posited that art has exhausted its potential for real innovation and creativity (Adorno, 1970/1997; Jappe, 1999). Modernist order, certainty and linear-unlimited progress have been replaced by pluralism, fragmentation and uncertainty, to the extent that many scholars conclude that we have come to a paradigm shift (Crimp, 1981; Crowther, 1993; Doll, 1993; MacPherson, 1995; Nicholson, 1990; Pinar, 1988; Wallis, 1984) and that we have entered a new epoch. What this new paradigm looks like, and how it has impacted art discourses, motivated my questioning and my journey into negotiating the post-modern world.

After seven years of teaching at university in Iran, I decided to pursue my own studies further. I came to Queen’s University and began a Ph.D. in curriculum and cultural studies, with a focus on my questions around teaching art to university students. I wanted to investigate how to better articulate artistic ways of knowing and how to include them in my teaching.
Constructing a Rhizome

Write to the nth power, the n-1, write with slogans: make rhizomes, not roots, never plant! Don’t sow, grow offshoots! Don’t be one or multiple, be multiplicities! Run lines, never plot a point! Speed turns the point into a line. Be quick, even when standing still! Line of chance, line of hips, line of flight. Don’t bring out the General in you! Don’t have just ideas, just have an idea (Godard). Have short-term ideas. Make maps, not photos or drawings. Be the Pink Panther your loves will be like the wasp and the orchid, the cat and the baboon. As they say about old man river:

He don't plant 'tatos
Don't plant cotton
Them that plants them is soon forgotten
But old man river he just keeps rollin’ along

A rhizome has no beginning or end, it is always in the middle, between things, interbeing, intermezzo. (Deleuze and Guattari, 1987, pp. 24-25)

Deleuze and Guattari (1987) begin *A Thousand Plateaus*, *Capitalism and Schizophrenia* with a description of the “rhizome.” According to them, the “strata” is a space of organisation and stasis. It is a linear and solid structure with a hierarchical and binary nature. In contrast, their concept of the rhizome is as a non-hierarchical organic system. As opposed to the conventional idea of a rhizome as a root, the concept of a rhizome developed by Deleuze and Guattari defines a deterritorialized space, a multiplicity of *n* dimensions, a space without centre, without form or stability. It is a deterritorialized plane of flux. It is made of lines in motion, not of stationary points, but of continually whirling, folding, resolving and disaligning lines which Deleuze and Guattari call “lines of flight.” The rhizome is (an) anti-structure. It is an immensity of interconnections, assemblages and arrangements. It has no beginning and no end. It is the middle, the “interbetween”. The rhizome is a space of multiplicity and ephemerality. It operates by forgetting, fragmenting, and diversifying. Creation is more possible in such a space. The characteristics of the rhizome presented by Deleuze and Guattari are:
“1 and 2. Principles of connection and heterogeneity … 3. Principle of multiplicity … 4. Principle of asignifying rupture … 5 and 6. Principles of cartography and decalcomania” (Deleuze and Guattari, 1987, pp. 7-13). The first and the second principles show that any point of a rhizome is connected to any other point, which makes it a non-hierarchical structure. The third principle indicates that the points are not important in the rhizome, but that the lines between the points—the relations of the points—are important. The fourth principle is that of asignifying rupture. “A rhizome may be broken, shattered at a given spot, but will start up again on one of its old lines, or new lines” (Deleuze and Guattari, 1987, p. 9). The last two characteristics of the rhizome, the principles of cartography and decalcomania, present the rhizome as a map with multiple entry points, not as a tracing mechanism. Tracing represents the old instead of creating the new. Mapping, on the other hand, “constructs the unconscious” by orientation “toward an experimentation of contact with the real.” (Deleuze and Guattari, 1987, p. 12). That is, maps can exist as themselves without need for a referent while tracing can only exist as representation. In summary, “the rhizome is an acentred, nonhierarchical, nonsignifying system without a General and without an organising memory or central automation, defined solely by a circulation of states” (p. 21).

In A Thousand Plateaus, Deleuze and Guattari declare that the structure of their book is rhizomatic:

We are writing this book as a rhizome. It is composed of plateaus. We have given it a circular form, but only for laughs. Each morning we would wake up, and each of us would ask himself what plateau he was going to tackle, writing five lines here, ten there. We had hallucinatory experiences, we watched lines leave one plateau and proceed to another like columns of tiny ants. (p. 22)
They suggest that the different chapters (plateaus) of the book can be read in any order. This kind of reading positions the reader on the edges of the text and enables them to view the text as a synthesis of multiple heterogeneous realms which are not hierarchically ordered (arborescent), but are parallel to each other (rhizomic).

Inspired by Deleuze and Guattari’s metaphor of the biological rhizome, I have used the rhizome as the central organizing element in my work. With the belief that nothing in the world is unitary, that rather, everything is connected to another, always connected to countless others, I try to show that these realms operate in parallel to each other, effecting a non-hierarchical synergy that creates this work’s varied capacity for interpretation. This curiosity (for us) of such a conception of time and event is tantamount to an extreme defamiliarization, which we know from Wittgenstein (1958), Derrida (1978) and Heidegger (1962, 1999), provides the benefit of seeing things anew. Here, I will ask the reader to select their own path through this text in order to argue with the imperative of linear logic in language. Linearity is anathema to the Deleuzian rhizomatic logic. It is not possible in a scholarly work to excise language’s linearity word by word—perhaps in poetry this can happen, but here, I wish to take the possibility even some distance, to insist on a democratic removal of the authorial linear position, which traditionally demands that the reader comply, simply by reading, with the author’s estimation of the importance or significance of the sequence in which ideas are presented. In order to approach a mental recalibration of the auto-linearity to which we are subject, consider the following discovery by Nunez (2006) discussed in Cognitive Science. Nunez asks how we would interpret a “simple” rescheduling notice:
The notice read: “Wednesday’s meeting got moved forward 2 days.” If the new meeting is now on Friday in your schedule, then you see yourself in motion relative to time. If you wrote down Monday, then you picture time itself as moving. … English speakers in North America divide fairly evenly in how they interpret that opening sentence. But all accept the convention that the past is behind and the future in front. … Not so the two to three million speakers of Aymara in the Andes. Their language embodies a reverse concept of time – the future is behind and the past in front.

Writing in the current issue of *Cognitive Science*, Rafael Nunez says the Aymara case is the first documented example of a culture and language departing from the standard “arrow of time.”

The Aymara use the same word for “front” and “past” and also a single word to convey both “behind” and “future.” So “nayra mara”—meaning “last year”—would be translated literally as “front year.”

The Aymara place a lot of significance on whether a witness has personally witnessed an event. In such a culture, the researchers speculate it makes good sense to metaphorically place the know[sic] past in your forward field of view and the knowable future behind your back. (Calamai, 2006, June 18, n. pag.)

Although the Aymara conception of time, linguistically, is not itself a rhizomatic one, it is nonetheless a useful means by which we can experience a de-familiarization of our own linguistically ordered sense of time; because the Aymaran “arrow of time” points in a direction in opposition to our own belief in “the forward,” we can begin to appreciate the ontological play of defamiliarization, an appreciation that should foster a deeper apprehension of the rhizomatic, non-linear mode.

As in a rhizome, there are nodes in this writing, from which all offshoots *stream in parallel to each other*. Each piece focuses on a different node, a different middle, while still providing connections to the other nodes, the other sites in the rhizome. All nodes may be read independently of one another. Hence, the reader can start anywhere to read this thesis. There is no hierarchy. You are the person who initiates the perception of connectivity; it is a decentralising principle, although one ought to read the conclusion
last, at the end of whichever sequencing of sections to read one opts for otherwise. The conclusion is my way of connecting and interpreting the various realms discussed. This is only my conclusion—the reader’s sequence of reading, self-positioning, and inevitably unique contextualizing, born of the individual reader, may well, and should prompt alternate conclusions. “In conclusion,” I try to explore the connections and linkages between the parts—concepts, events, and ideas—and to form my own interpretation based on my own experiences as an artist and an art teacher.

**Interrogative Nodes**

The production of art has historically been viewed as an inner necessity or a gift granted to geniuses and elites. Art has also, in the context of this work, been the operations of a specific class (high), a specific race (white), a specific gender (male), and occurs within a specifically Western paradigm. However, to differentiate between the Western paradigm of art and any other is complicated by the fact that in Iran, for instance, what was once a Persian understanding of art is now entirely subsumed by a Western model, in both teaching and production. Islamic art has been as orientalised as much else in Eastern and Middle Eastern culture, so we have come to understand our own art history through Western eyes, and in many ways, are unable to see it otherwise at this point. Thus, my own instruction in art and art history has been heavily informed by, if not based entirely on, purely modernist principles. However, since the middle of the twentieth century, postmodernist artists and critics have attacked the gendered, classed, and modernist premise. Still, despite myriad discrepancies among approaches to art, the production of art has been taken as a “serious” endeavour entailing hard work and dedication (Elkins, 2001). A
notable exception to the view of the production of art as a “serious” venture occurs in Dada, which derided seriousness and favoured painting unconsciously, letting motifs come and go accidentally without trying to explore them, thinking of art as a hobby and its products as vehicles for humour. But when art is taken as a serious thing to do, and when the creation of art is undertaken as a concrete process, the teaching of art becomes a discipline in which students are guided to do projects that exhibit, to the instructor, a sober devotion.

What exactly is creativity? What purposes and uses does its ubiquitous rhetorical application serve, politically and economically? Is the process of making art law-abiding? What roles do chance and chaos play in artistic intention? Can artistic creativity be taught?

This dissertation is about the complexities of studying, making, and teaching artistic creativity. It investigates the visual studio art practice at the undergraduate level, with attention to the problematic of creativity and to the complex, accidental and playful nature of the art-making process within a Deleuzian perspective. Deleuze’s philosophy leads us to move forward through a creative affirmation of complex features of the world, by putting forward an ontology of becoming. Deleuze’s revolutionary theory of “events,” “becoming,” “the line-of-flight,” and “nomadic thought,” offers a framework and a vocabulary for my research which makes sense of the unpredictability, and complexity inherent in art making and teaching processes. Furthermore, his critique of metaphysics based on identity (the modern individual, typically neurotic and repressed), the nation-
state (a society of continuous control), and capitalism (a system domesticated into and
designed for infantilizing and commodification) suggests a theory that is beyond any
binary oppositions such as modernism/post-modernism. Such a theory challenges the
regimentation of art and creativity and is able to foster a notion of creativity “in terms of
a differentiating, impersonal, inventive power” (Osborne, 2003, p. 511).

This research program addresses complex issues in artistic creativity and teaching art,
which cannot be understood without considering issues of power, politics, culture, and
history. This study situates itself on an intersection of several intellectual disciplines—
philosophy, art history, aesthetics, visual culture, cultural studies, and critical theory.

This dissertation did not, in its development, follow a conventional path that includes a
separate literature review, a standard table of contents, and linear chapters. Rather, it is
about uncertainties—uncertainties in studying, making, and teaching art; uncertainties
that reflect the nature of life. There is no guide, nor suggestion of solutions to
uncertainties. The discussions are, as Foucault (1981) states, “on the basis of elements
from my experience” (cited in Rajchman, 1988, p. 108) and in keeping with that
experience, they follow no linear path. I attempt to render complexities, contradictions,
and uncertainties structurally as I have experienced them, which is as a rhizome of
concepts, thoughts, experience, events, and questions about what it might mean to teach
art “better.” In fact, what I mean to do is a mapping, in a Deleuzian sense: “Writing has
nothing to do with signifying. It has to do with surveying, mapping, even realms that are

2 Although the thesis now includes these traditional structures; they are a function of compliance with
supervisory/administrative requirements.
yet to come” (Deleuze and Guattari, 1987, pp. 4-5). My writing is more mapping than tracing. A tracing merely repeats what has to be done. A map, on the other hand, “can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation. It can be drawn on a wall, conceived of as a work of art, constructed as a political action or as a mediation” (Deleuze and Guattari, 1987, p. 12). A tracing is like growing a tree with roots and radials in our minds; however, the brain is more like grass than like a tree. My writing here is grass-like, rhizomic, not arboreal. I have page numbers only out of obligation to contextual demands. There is no hierarchical order in this writing. Flying between aesthetics, visual arts, political/cultural/historical issues, this work traverses lines of stratification and (de/re)territorialization. This map is an attempt at nomadic study, at movement between and within a small but critical set of nodes.

Sometimes I do not tell you where I am going, and why, not to be deliberately obscure but to reflect my conviction that much more is gained by the reader through the process of reading differently, of reading with the freedom to imagine intention, to create connections unseen by me. I do not wish to make a linear relation between a genuinely fragmented set of experiences and conceptualizations; I wish to take advantage of “the death of the author” (Barthes, 1977) and consign the reader as executor of this text. That said, we might encounter each other’s views in this or that node.
Discourse Theory and Creativity: A Review of the Literature

Discourses are not only restrictive but enabling. While they limit what can be said, they also provide the only language in which to say it. In order to find expression, emerging thoughts and things must speak in the terms of the discourses that are established, though at the same time they break away from them. Political (indeed any) change must be effected in a sort of dance between sedimented, historical discourses and lines of flight, between containment and breaking free. This is the act of archaeology: combining elements from different strata in order to resist the order that would be imposed by working on one stratum alone. (Marks, 2000, p. 28)

Michel Foucault (1969/1972) in The Archaeology of Knowledge works toward the development of a theory to understand the relationship between knowledge, language, social institutions, and power. As a part of this endeavour, Foucault defines discourse as “a group of sequences of signs, in so far as they are statements.” He writes, “the term discourse can be defined as the group of statements that belong to a single system of formation; thus I shall be able to speak of clinical discourse, economic discourse, the discourse of natural history, psychiatric discourse” (p. 121). Starting from a Foucauldian notion of discourse, I believe that understanding discourses leads us to understand the relations of knowledge and power and to open the way for challenges, changes, contestations, and resistance. Creativity study, as a discipline, creates discourses in which true and false are defined and determined by the researchers in a certain context. Creativity study, like all others, contains, provides and controls the rules for the production of its own discourse, i.e. for the formation and dispersion of statements. So Foucault’s concept of discourses as a productive, socially constructed regimes of knowledge and truth provides the backdrop for my subsequent discussion on creativity.
According to Foucault, statements have materiality, are realized and are “pronounced from a certain place, a certain position and at a particular time” (Haider and Bawden, 2007, p. 538). In fact, for Foucault, all statements are statements within discourses which define and produce the objects of our knowledge. It is discourse, not subjects, which constitutes knowledge. Discourse establishes certain principles and structures for judging the truth-claims of statements; it determines which statements are true and which are false. Therefore, within Foucault’s definition of discourse, discourse is not composed only of words, but it is also a system of representation, in that truths, facts, untruths, and non-facts are presented and represented within and as an actualizing system or systems. Discourse consists of the said as well as the un/non-said. It is more than just linguistic signs. Foucault contends that discourses form social realities. They form and create meaning systems and “organize social institutions and processes” (Weedon, 1987, p. 35).

Furthermore, Foucault (1971/1976), in *The Discourse on Language*, argues that the production of knowledge and discourse is controlled. He contends that discourse is regulated and organized by “rules of exclusion” concerning what is prohibited. He identifies three ways of controlling discourse: in terms of objects (what is spoken of), ritual (where and how one speaks), and the privileged or exclusive right to speak of certain subjects (who speaks). In fact, these three types of prohibition determine who can utter truth, how and under which conditions, and from which position. He writes,

> In a society such as our own we all know the rules of exclusion. The most obvious and familiar of these concerns what is prohibited. We know perfectly well that we are not free to say just anything, that we cannot simply speak of anything, when we like or where we like; not just anyone, finally, may speak of just anything. We have three types of prohibition, covering objects, ritual with its surrounding circumstances, the privileged or exclusive right to speak of a particular subject;
these prohibitions interrelate, reinforce and complement each other, forming a complex web, continually subject to modification. (p. 216)

Such rules and confinements structure the context of producing a discourse. They determine the authority of speakers and the conventions in which statements make sense. Indeed, for Foucault, such rules and procedures, established by society and its institutions, confine what can “count as knowledge and who has the authorizing power to speak about the objects that do count” (McNabb, 1999, p. 21). In this regard, Foucault (1971/1976) writes,

In every society the production of discourse is at once controlled, selected, organized and redistributed according to a certain number of procedures, whose role is to avert its power and its dangers, to cope with chance events, to evade its ponderous, awesome materiality. (p. 216)

Hence, Foucault in his work examines how some discourses attain the status of “truth,” and thus dominantly control social meaning systems, and maintain their authority, while others are marginalized and dominated. He particularly focuses on the social constructions of madness, punishment, and sexuality by way of example in making his point. In his investigation, he focuses on the relationship between knowledge and power and suggests that certain knowledges and practices emerging in a society are connected to power. According to Foucault, knowledge and power are interwoven and constitutive of and for each other. He often uses the term power/knowledge in order to elucidate how power operates within institutional machineries that are always linked to certain knowledges formed in discourses. He “identifies the methods by which institutions enact this control as external, internal, and enunciative. Through these methods, institutions are able to exert power over the emergence of knowledge in a discipline” (McNabb, 1999, p. 21). Foucault (1980) sees power as “the production of effective instruments for the
formation and accumulation of knowledge—methods of observation, techniques of
registration, procedures for investigation and research, apparatuses of control” (p. 102).
And at the same time, he considers organization and circulation of these “apparatuses of
knowledge” as the production of power. Hence, expert knowledge results from particular
institutionally privileged loci, which themselves are a consequence of discursive and
disciplinary knowledge, and which function as systems of control. The specialist
knowledge of experts in a discipline is the source of their power which enables them to
have unique control over the field. It legitimizes their statements and presents them as
authoritative and “true.” Weedon (1987) addresses the presence of the expert, or the
subject agent, in her description of power in Foucault’s philosophy. She notes that power
is “a dynamic of control and lack of control between discourses and the subjects,
constituted by discourses, who are their agents. Power is exercised within discourses in
the ways in which they constitute and govern individual subjects” (p. 113).

For Foucault, power is not merely a force of domination of an individual or a group over
the other, but a productive, non-localized network (Foucault, 1980). Power systems
induce forms of knowledge, run through the social body, and in turn, produce new
discourses. He writes,

> What makes power hold good, what makes it accepted, is simply the fact that it
doesn’t only weight on us as a force that says no, but that it traverses and
produces things, it induces pleasure, forms knowledge, produces discourse. It
needs to be considered as a productive network which runs through the whole
social body, much more than as a negative instance whose function is repression.
(p. 119)

In this sense, discourse is understood as a result of the productivity of power, while
conversely the analysis of “the related effects of power” (Foucault, 1980, p. 71) is
possible through the examination of discourse. In Foucault’s theory, knowledge is contextual; that is, it takes shape during certain periods of history and in certain social contexts. For him, the formation of knowledge and its social practices differ from period to period, historically, without any necessary continuity between them. Knowledges and practices are related to, or are a function of, historically specific discourses. Thus, things have meaning and are true within a specific historical context. Foucault’s analysis of power historicizes discourse, knowledge and “truth.”

**Discursive Terms and the Criteria of Creativity**

In this node, I begin my discussion with a brief review of the literature on creativity in the field of creativity research. Since a reasonable point of departure for researchers in this field seems to be a search for the meaning and definition of creativity, first I review the definitions proposed in the literature. Then, I identify the points of agreement and common characteristics in the researchers’ definitions. In particular, I identify two main criteria accepted by many creativity theorists. Informed by Foucault’s analysis of knowledge and its relation to/with power, I believe that the study of creativity, artistic and otherwise, is, like all other discourses, political and cooperative with systems of power. It is important to note here that definitions of and assumptions about creativity are unstable, are subject to historical periodic re-interpretation, to new associations, and that these shifts in a general understanding of creativity are very much a political function of the discourses and power systems of their moments. I will engage here with an analysis of current understanding and sets of assumptions about creativity. Then, I very briefly review the approaches in the field in order to illustrate a contour of the dominant
discourse in creativity studies over the last fifty years. The notion of creativity is considered a core concept to art discourses, as the domains of art making and art appreciation are said to “naturally” involve creativity. Hence, understanding both the concept of creativity and the hegemonic imperative of that concept’s rule is significant.

My central contention is that contemporary discourses of creativity reinforce and contribute to the hegemony of capitalism. Anything in a capitalist system is inextricably linked to the construction of the urge to consume, and therefore the acceleration of capitalism necessitates an increase in the rate at which we manufacture venues for consumption, even in such innovative ways as by making creativity itself a consumable package. Hence, reviewing discourses of creativity is essential to my argument because connecting capitalism and the understanding of creativity requires extensive contextualization. The preliminary question of “What is meant by creativity?” informs my discussion of how the current notion of creativity functions in the world of late capitalism and, more importantly, the issue of how creativity can be fostered to help us to resist the logic of commodification and capitalism. In my discussion, I do not intend to look for or produce an analysis of the formation of creativity discourses, but, rather to identify and delineate the political construction of creativity now. What does this construction mean? What does it mean to speak of creativity as not something in itself, but as a function of madness (19th century) or perhaps a sluicegate for genius (Modernism) or even a discursively operational tool in the capitalist kit (now)?
The origin of creativity has been debated since before Aristotle, but it was J. P. Guilford (1950) who revived the field of creativity research in 1950 with his compelling rationale and research agenda. Since 1950, studies on creativity have addressed a number of issues (personality, measurement, and so on) and applied various methodologies to these purposes. Studies have covered the various perspectives for describing creativity, the differences between creativity and intelligence, the ways to measure people’s creativity, the cognitive process involved in creative thinking, the analysis of how a creative product happens, the life experiences that influence a creative person, the characteristics of creative people, the biological and evolutionary bases of creativity, the motivations of creative people, the effects of social and cultural contexts on creativity, and the ways for developing creativity (Mayer, 1999). Creativity, therefore, has been diversely investigated and discussed to varying analytical degrees. Over the years, various definitions and approaches “as varied as creative expression itself” (Tardif and Sternberg, 1988, p. 429) have been presented. A review of the literature on creativity reveals a variety of perspectives and definitions, developed from the 1950’s to 1970’s (Helson, 1996) starting from concerns about the personality traits, cognitive abilities, talents, and “IQ’s of exceptionally creative men and women” (Albert and Runco 1999, p. 28). In the present day, the study of creativity continues to be aware of the impacts of socio-cultural contexts on individuals’ creativity (Rhyammar and Brolin, 1999).

Defining creativity has been, and continues to be, a starting point for creativity researchers. Of the essays, reports, articles, and books on creativity I have examined, many begin by questioning the definition of creativity. In the appendix of his 1988 essay,
Various Approaches to and Definitions of Creativity. Taylor presents a list of 50 or 60 definitions of creativity. Taylor classifies all the definitions into six major groups or classes: 1) Gestalt or perception type; 2) End product or innovation-oriented; 3) Aesthetic or expressive; 4) Psychoanalytic or dynamic; 5) Solution thinking; and 6) Varia. He offers terms of reference for all six groups. For instance, in the first category, Taylor includes definitions of creativity that emphasize “the recombination of ideas or restructuring of a Gestalt” (p. 118), and in the third category, the major emphasis is on self-expression in a manner which is unique.

The choice of aspects and approaches to creativity has led researchers to apply distinct definitions of creativity (Mooney, 1963). A review of the literature shows that the scope of approaches to the problem of creativity can be classified into four groups. Mooney (1963) and Tardif and Sternberg (1988) identify these groups as: views of creative persons, creative products, creative processes, and creative environments.

Reviewing these definitions of creativity and distinctive approaches, here, I try to present the challenges in understanding and developing a concept of creativity. I also render the complexities of the interaction between a variety of factors in the creativity consideration and creativity discourse, and its implications for the teaching of art.

Over the last century, the understanding of creativity has changed enormously, from creativity as a form of self-expression in the 1950’s to creativity as an element of successful technological and economic ventures in recent years (Cropley, 2001). In the
nineteenth century, the concept of creativity was closely associated with madness (James, 1995); after World War II, creativity took on aesthetic connotations. Creativity became a form of self-expression and communication, and a medium for beautification (Cropley, 1999a). The literature indicates that there is no widely accepted definition of creativity. Researchers have defined this term in wide-ranging ways: sometimes in terms of imagination, fantasy, madness, intuition, inspiration, curiosity, problem solving ability, divergent thinking, and sometimes in terms of any combinations of these elements. However, it is accepted that creativity is a complex human performance and occurrence (Runco, 1999b; Taylor, 1988; Torrance, 1988). Runco (1999a) describes creative thinking as a way to “generate problem solutions in concatenated chains of associations” (p. 660); the process of finding these associations takes not only time, it is argued, but a particular “creative” energy. All researchers unanimously agree that the creative process is not an isolated cognitive process; it is not “a matter of cognitive processes such as knowing, thinking, recognizing, remembering, or puzzling out, but … it also involves factors such as motivation, personal properties, and feelings” (Cropley, 1999a, p. 517). That is, creativity is a complex process of the interactions in the higher levels of cognitive activity. Creativity is deemed essential for recognizing the problem, finding the solution for the problem, and for developing criteria to recognize a solution that might be a complex and intractable process. However, as Cropley (1999a) suggests, not all solutions are necessarily generated creatively. Feldhusen (1995) contends that planning, processing, and regulating the transformation of information into something new needs the self-regulation and knowledge provided by strong metacognitive abilities. This process is also facilitated by characteristics of individuals, such as motivation,
intelligence, and style, in addition to the environment. Feldhusen argues that creativity depends on a large number of processes within an individual and on a higher level of performance in each individual.

What does “creativity” mean?

Roland Barthes (1967) identified two levels of signification, namely denotation and connotation. I first explain the standard definitions of creativity to understand the connotation of this word in the domain of creativity study. The Oxford English Dictionary describes creativity as “[c]reative power or faculty; ability to create … something whereby the actual world has its character of temporal passage to novelty.” To create means “To bring into being, cause to exist; esp. to produce where nothing was before, to form out of nothing,” and creative has been defined as “originative; … inventive; … imaginative.” This definition has also been suggested for novelty, “something new, not previously experienced, unusual, or unfamiliar”. A glimpse at the standard definitions of these words exposes that the denotation of creativity involves the concepts of novelty, newness, invention, and originality.

Magyari-Beck (1999) states that the linguistic meaning of creativity is “a special ability of an individual to create something new, useful, and valuable” (p. 433). However, for experts on creativity, the word means “a large domain of factors and results connected with the aforementioned ability at different levels of human society” (p. 433). Rober (1985) in The Penguin Dictionary of Psychology offers this definition of creativity: “A term used in the technical literature in basically the same way as in the popular, namely,
to refer to mental processes that lead to solutions, ideas, conceptualizations, artistic forms, theories or products that are unique and novel” (p. 165). Colman, (2006) in his dictionary of psychology, emphasizes the notion of novelty and originality in his definition of creativity. His definition is:

**creativity**—the production of ideas and objects that are both novel or original and worthwhile or appropriate, that is, useful, attractive, meaningful, or correct. According to some researchers, in order to qualify as creative, a process of production must in addition be heuristic or open-ended rather than algorithmic (having a definite path to a unique solution). (p. 179)

Researchers have defined creativity in diffuse ways, sometimes as an ability to produce novel and appropriate work (Ochse, 1990; Sternberg, 1988; Sternberg and Lubart, 1991, 1995, 1996, 1999), or as a disposition to rearranging concepts and emotions in a new form (Lansing, 1973). Creation for Sir Herbert Read (1958), one of the outstanding writers on art, is bringing something into existence that “previously had no form or feature” (p. 113). Thurstone (1952) describes creativity as an act where a thinker reaches a solution in a sudden closure that necessarily implies some novelty to them. Stein (1953) defines creativity in terms of culture because to him, a creative work must not only be novel (namely, a creative product not existing previously in the same form), but it must also be accepted as tenable and useful by a group in its time. Accordingly, Cropley (1999a) defines creativity as a social phenomenon. He says creativity “is facilitated by some social factors, and inhibited by others” (p. 511). For Bartlett (1958), creative thinking is “getting away from the main track, breaking out of the mold, being open to experience, and permitting one thing to lead to another” (p. 103). Although the literature delineates a wide range of efforts in defining creativity, some points of agreement and common characteristics can be identified in the various definitions offered by researchers.
Novelty and appropriateness as common criteria

Most of the definitions explicitly or implicitly include the production of something new. Cropley (1999a) asserts that after World War II, novelty was the only known constant factor in creativity discourse by researchers in aesthetics. Novelty was also defined as the achievement of surprise. Cropley argues that creativity is not just a matter of intelligence. Intelligence involves recognizing, recalling, and reapplying substantial knowledge of facts, effective acquisition of new facts, rapid access to the contents of memory, accuracy in finding the best answer to factual questions, and logical application of the already known. Creativity also requires these characteristics, but a further criterion of creativity is that something novel must be produced. Emphasis on novelty and newness in the creative process provokes the question, for whom should a product, process or idea be new? Must it be new “[f]or all human history, for the society or the era of the creator, or for the creator alone” (Cropley, 1999a, p. 513)? Among creativity researchers, some, such as Stewart (1950) and Thurstone (1952), believe that the only criterion for creativity is novelty, regardless of whether the society views an idea as novel or not. On the contrary, some argue that novelty cannot be the only criterion. They profess that originality alone is not sufficient; a creative product must be relevant and effective as well. Stokes (1999) in her essay, Novelty, writes “Creativity is a culturally defined way of being novel” (p. 298). She identifies two extremes of behaviour: the reliable responses that “are completely predictable, invariant, stereotyped” (p. 297), and novel responses that are unpredictable and random. She defines novelty as a particular way of being variable. Being novel, she contends, is not necessarily being creative. Novelty “would also have to be valuable or influential, useful or generative in its domain” (p. 297) in order to be
considered creative. Her argument is a verification of Stein’s 1953 assertion that creativity that appears in a particular culture must be defined in terms of that culture. He contends that a novel work is creative when it is accepted, tenable, and useful. Similarly, Selye (1962) says that creative productions “are true not merely as facts but also in the way they are interpreted, they are generalizable, and they are surprising in the light of what was known at the time of the discovery” (p. 420). Gruber and Wallace (1999), in Chapter five of their *Handbook of Creativity*, mention that creative products must be novel and they must be given value according to some external criteria. Thus, many definitions highlight originality, usefulness, and effectiveness as the main criteria of creativity (e.g., Boden, 1999; Gruber and Wallace, 1999; Martindale, 1999; Stein, 1953; Stokes, 1999; Thurstone, 1952). What is meant by originality is something that is new and novel; usefulness is defined as what is “appropriate for the situation in which it occurs” (Martindale, 1999). Effectiveness refers to the domain in which creativity is studied. For example, being effective in aesthetics is unlike being effective in business. Creativity has an ethical element because a new idea cannot have a negative connotation and be considered effective and relevant to the field. For example, a novel weapon of mass destruction is not effective in terms of creativity. In addition to novelty, usefulness and effectiveness, ethicality is a criterion of creativity according to some researchers (Cropley, 1999a).

**Socio-psychological Approaches to Creativity**

It is vital to understand that the following review of literature is a departure from my intent to work rhizomatically. Traditional art researchers and art educators need to review
past studies and theories about creativity to aid them in developing concepts of creativity which will perhaps serve as a foundation for their efforts in teaching, researching, measuring, and assessing art. Such reviews are exactly that: RE-views, archaeologies of what has been, and as such, have an overly deterministic effect on the rhetorical trajectory of creativity. The socio-psychological analyses of creativity described briefly below are important to my discussion not because they can or should affect a full conception of creativity as rhizomatic, but because a presentation of these understandings will indicate the specific and narrow field into which concepts of creativity have sometimes been confined.

Generally, three stages in the history of creativity can be identified: prehistory to the medieval period, the Renaissance, and the present. From prehistory until well into the medieval period, it was contended that creativity was a mysterious, supernatural process and was a gift of divine nature (Dacey, 1999). During the Renaissance, a humanistic point of view was developed and creativity was seen as an inherited genius (Dacey, 1999). More recently, there have been new conceptualizations about creativity (Dacey, 1999). Various approaches to and definitions of creativity indicate the degree of diversity in the study of creativity on the one hand, and the complexity of the subject on the other. The following explanation cannot thoroughly cover all the approaches to creativity. However, it strives to represent a broad array of paradigms.
Mystical approaches

Early studies of creativity defined it as a result of sudden inspiration. It was believed that creative products were invented, innovated, or emerged without any effort on the part of the creators (Cropley, 1999a). It was thought that it came as a gift “from above”. The Greeks assumed that new ideas were formed in the chambers of the mind. They believed that the gods controlled the chambers, and therefore the source of creativity was supposed to be the gods themselves. “It was widely believed that all desirable innovations were inspired by the gods or by God” (Dacey, 1999, p. 310). “Plato argued that a poet is able to create only that which the Muse dictates” (Sternberg and Lubart, 1999, p. 5). For Plato and Socrates, creativity was a divine madness (Albert and Runco, 1999; Durrenberger, 1999). This notion of madness, as Eysenck (1954) contends, was involved in inspiration. He writes, “In Latin there is no linguistic distinction between madness and inspiration. Mania and furor are terms that cover many different non-rational states such as anger, passion, inspiration and insanity” (p. 130).

Mystical approaches have influenced thinking about creativity throughout the centuries. During the Middle Ages, creativity and genius was considered to be “the manifestation of an outside spirit” (Albert and Runco, 1999, p. 18). In this respect, individuals were considered to be the means by which new ideas were transmitted.

Many artists describe creative inspiration as a mystery, something that takes over the artist’s actions. When asked to account for his creativity, Picasso said, “I don’t know and if I did, I wouldn’t tell you” (cited in Best, 1982, p. 281).
Associationist and Gestalt approaches

Along with the pragmatic shift of the Renaissance came the idea that individuals had the right to explore their world “without institutional permission and divine guidelines or intervention” (Albert and Runco, 1999, p. 19). The Renaissance saw considerable scientific development, and eventuated the legitimatization of scientific beliefs. Therefore, researchers in all disciplines accepted one of the most significant beliefs in science at the end of the eighteenth century: the existence of natural law. It is around this time that creativity began to be considered a matter of genetic inheritance. In the nineteenth century, the assumption that “great men are great because they have inherited a serendipitous combination of genes from their forebears, which produce a mind of intensely fine acuity” (Dacey, 1999, p. 316) was widespread. In the study of creativity, two scientific camps, the associationist camp and the Gestalt camp, were formed based on heritability of physical traits and mental abilities. Sir Francis Galton has been cited as the first scientific researcher on the nature of genius. After Aristotle, he was the most outstanding associationist. He believed that mental abilities were inherited, and that genius, like physical features, was in this category (Dacey, 1999). For Galton previous experiences or the immediate environment did not play a significant role in the creative act, but geniuses were persons who were “the beneficiaries of exceptional inheritance, especially of brain cells” (Dacey, 1999, p. 318).

Gestalt means “mental patterns or forms.” Gestalt psychologists hold that creative thinking is seeing an existing Gestalt in a new way by the restructuring and altering the Gestalts. For example, Wertheimer (1945) defines creativity as a process of destroying
one Gestalt in favour of a better one; for Keep (1957), creativity is the intersection of two ideas for the first time. The disagreement between the advocates of these two camps still stimulates new discussions between psychologists.

Psychodynamic approaches

Arguably, the first major theoretical approach to creativity in the twentieth century was the psychodynamic approach. According to the psychodynamic view, creativity is the result of “tension between conscious reality and unconscious drives” (Sternberg and Lubart, 1999, p. 6) in order to convert libidinal or aggressive energies into socially acceptable behaviours. According to Dacey (1999), Sigmund Freud (1908/1959) considers creativity to be “the result of overcoming some traumatic experience, usually one that … happened in childhood” (p. 320). Dacey argues that Freud describes the unconscious as a place where traumatic experiences are buried—the unconscious is hidden from conscious awareness, but has a tremendous impact on a person’s behaviour. Further, Taylor (1975) claims that sublimation for Freud is a primary cause of creativity—unconscious conflicts between tendencies and needs are sublimated by the ego into useful outcomes, resulting in creative production. According to Taylor, Freud believes that when people are not able to directly fulfill their sexual needs, they attempt to make up for it by being creative. In other words, sexual energy transforms into socially acceptable forms, with sublimation as the basic process.

Other thinkers such as Kubie (1958) argue that the preconscious falls between the conscious and the unconscious, with the contention that the preconscious is the true
source of creativity “because thoughts are loose and vague but interpretable” (Sternberg and Lubart, 1999, p. 6). In contrast to Freud, Kubie and others believe that the unconscious has a negative impact on creativity.

Psychometric approaches

Creativity can be studied at two levels: the individual level, and the societal level. At the individual level, the investigation focuses on how creative individuals are at solving problems in daily life. At the societal level, the investigation surrounds the issue of how creativity leads to new scientific findings, new movements in art, new inventions, and new social programs (Sternberg and Lubart, 1999; Taylor, 1975). Considering societal creativity to be a rare phenomenon, Guilford (1950), an influential scholar in creativity during the 1950s and 1960s, points out that the psychological study of creativity at the societal level is difficult in a laboratory setting. Hence, he focuses on creativity in everyday subjects and proposes a psychometric approach based on the concepts of convergent and divergent thinking. He develops a concept of creativity as a personality trait. He presents the relationship between creativity and intelligence as a central concern of psychology, and applies a simple method to study the complexity of creativity (Albert and Runco, 1999). He also designs instruments to measure creative thinking. The tests used by other researchers, such as Torrance (1974), are similar to Guilford's tests because they are a convenient way to scale creative people along standard measurements. Torrance’s tests score some characteristics of individuals considered relevant to creative thinking, such as fluency, flexibility, originality, and elaboration through the individuals’ responses to simple verbal and figural tasks.
Cognitive and computer modeling approaches

Cognitive approaches to creativity aim to illuminate the mental representations and processes of obtaining, coding, processing, storing, and retrieving information to produce effective novelty (Cropley, 1999b; Sternberg and Lubart, 1999). Cognition theorists believe that mental processes are “the essence and the engine of creative endeavours” (Smith, Ward and Finke, 1995, p. 1). They attempt to define creative processes by applying the methods and concepts of cognitive science. In contrast to any belief in the mystical processes of creativity, cognition researchers claim that creativity arises from simple mental processes (Schank and Cleary, 1995), and claim further that mental processes in creative thinking are similar to those in non-creative thinking. Smith, Ward and Finke (1995) assert that the root of this approach is in associationism, Gestalt psychology, and computational modeling. Therefore, studies using the cognitive approach can be categorized in two groups: 1) studies of human subjects, and 2) computer simulations. In the first category, researchers claim that special processes and abilities such as insight, incubation, or divergent thinking, as well as the ordinary cognitive skills “underlying such everyday activities as recalling events, forming images, using language, and dreaming” (Smith, Ward and Finke, 1995, p. 327) can be involved in creative thinking because no creative processes follow exactly the same pattern. Some creative processes result from flashes of insight; others can result from incremental applications of prior knowledge. Computer simulations of creative response in virtual environments described by Boden (1999) represent computational models that rely on problem solving guidelines “for searching a data set or conceptual space and finding hidden relationships between input variables” (Sternberg and Lubart, 1999, p. 8).
Central issues in cognition and creativity such as unstructured thinking producing novelty, intuition and insight, significance of prior knowledge, problem solving, etc. are studied to help reveal the basic cognitive processes underlying creativity.

**Social-personality approaches**

Social-personality approaches recognize three sources of creativity: personality variables, motivational variables, and the socio-cultural environment. Some researchers (e.g., Amabile, 1983; Barron, 1968; Eysenck, 1993; MacKinnon, 1965) describe creative people in terms of their personality characteristics. Reviewing the studies allows us to make a long list of personality traits that are potentially relevant to creativity. The list includes risk taking, flexibility, independence of judgment, self-confidence, attraction to complexity, and aesthetic orientation. Intrinsic motivation, need for order, and need for achievement are considered relevant motivation variables. Cultural diversity, war, the availability of role models and resources, as well as the number of competitors in a knowledge domain are included in the relevant social environment variables (Sternberg and Lubart, 1999).

Furthermore, some characteristics in individuals have been considered as creative individuals’ personal qualities. Shallcross (1981) describes these traits as: “openness to experience, independence, self-confidence, willingness to take risk, sense of humour or playfulness, enjoyment of experimentation, sensitivity, lack of a feeling of being threatened, personal courage, unconventionality, flexibility, preference for complexity,
goal orientation, internal control, originality, self-reliance, and persistence” (cited in Craft, 2000, p. 13).

**Confluence approaches**

Recent theories of creativity exploit a wide range of new methods of studying creativity (Mumford, 2003). Researchers employing these new theories contend that the occurrence of creativity needs multiple components to converge. For example, in one componential model, creativity is considered to be the conjunction of intrinsic motivation, domain-relevant knowledge and abilities, and creativity-relevant skills (Amabile, 1983). Therefore, the confluence approaches (e.g., Amabile, 1983, 1996; Csikszentmihalyi, 1988, 1996; Sternberg, 1985; Weisberg, 1993) focus on the interaction of many different forces.

For example, the investment theory represents a model of a creative person’s personal qualities. It explains how creativity requires the confluence of six distinct yet interrelated resources. These factors are: intellectual abilities, knowledge, styles of thinking, personality, motivation, and environment (Sternberg and Lubart, 1999). Under this model, the synthetic ability, the analytic ability, and the practical-contextual ability are three important intellectual abilities. The synthetic ability helps a creative person to find new ways to see problems; the analytic ability is necessary for recognizing worthwhile ideas to pursue; and the practical-contextual ability is employed to persuade others that an idea is valuable. According to the investment theory, a person needs enough
knowledge of the field to create something new in the specific domain. Furthermore, a legislative style of thinking is significant for creativity (Sternberg and Lubart, 1996).

The systems approach suggests that the manifestation of creativity is possible when it operates with the support of peers and within a system of cultural rules (Csikszentmihalyi, 1999). The systems approach emphasizes the interactions of people’s knowledge and thoughts with their actions and skills, within a socio-cultural or a domain-specific context. The value and relevance of creativity is evaluated in the context of the domain. Csikszentmihalyi contends that in a specific field of creativity, individuals play the role of “gatekeepers” by recognizing, preserving and remembering creative results. Csikszentmihalyi (1996) considers “flow” to be a common characteristic of creative people. Flow is the automatic, effortless, yet highly focused state of consciousness. According to him, nine elements can be identified as flow in activities of creative people: clear goals, immediate feedback, balance between challenges and skills, merging of action and awareness, elimination of distractions, lack of fear of failure, lack of self-consciousness, distortion of sense of time, and autotelic activity (enjoyment for its own sake).

The developmental evolving systems approach considers complex interactions of persons, process, and knowledge. It theorizes the unique individual as a creative person at work (Gruber, 1999). Applying a case study approach and dwelling on the interplay of purpose, chance, and insight, Gruber attempts to explain his evolving systems theory in The Evolving Systems Approach to Creative Work (1989). He presents five facets of his
approach: developmental and systemic, pluralistic, interactive, constructionist, and experimentally sensitive. Gruber’s systems approach suggests that creativity takes time, and it develops and evolves over time. It is pluralistic, because creative people employ various insights, metaphors, societal relationships, projects and heuristics. Creative products are cultivated within specific domains of knowledge and multiple insights are utilized in “a constant interplay among purpose, play, and chance” (Gruber, 1989, p. 4). A creative person needs the domain-specific skills and knowledge to advance creative work. Hence, they must reconstruct and take possession of whatever is necessary for conducting work. Finally, in this model, the feelings and social awareness of the creator are vital features of the creative process.

In the following, I argue that the emergence of post-modernism has influenced the creativity discourse and its infrastructure, which is dominantly modernist, and I address how post-modernism has challenged the notion of “definition,” as well as the common criteria of creativity definitions.
Post-modernist Discourses of Creativity

The emergence of post-modernist theories in the late twentieth century has influenced all domains and disciplines as well as the study of creativity. Over the past three decades, post-modern debates have become widespread in many cultural and intellectual fields, interrogating the modernist tenets from a number of disparate angles. The term, post-modernism, has appeared in a wide variety of disciplines including art, architecture, literature, sociology, communication, fashion, technology, and in each, definitions have developed which are often vague and inconsistent with each other (Burke, 2000; Doll, 1993; Klages, 2003). Ihab Hassan (1987), at the beginning of his book, *The Post-modern Turn: Essays in Post-modern Theory and Culture* writes,

> Fastidious academics once shunned the word post-modern as they might shrink from the shadiest neologism. But now the term has become a shibboleth for tendencies in film, theatre, dance, music, art and architecture; in philosophy, theology, psychoanalysis and historiography; in new sciences, cybernetic technologies, and various cultural lifestyles. Indeed, post-modernism has now received the bureaucratic accolade of the National Endowment for the Humanities in the form of Summer Seminars for College Teachers; and beyond that, it has penetrated the discourse of late Marxist critics who, only a decade ago, dismissed the term as another instance of the dreck, fads and folderol of a consumer society. (p. xi)

Obviously, Hassan’s claims are concerned with North America, particularly the United States; however, similar processes (more or less) have been occurring outside the Western paradigm.

Since the beginning of post-modernism is not exactly clear, locating it temporally or historically is hard. Moreover, a review of the literature reveals that there is no consensus on the definition of post-modernism. In fact, theorists of the post-modern refuse to define
the term in a traditional/modernist way, which would determine a single meaning once and for all. “In the post-modern theoretical world, such definitions tend to continuously undermine and sometimes un-define themselves” (Geyh, 2003, p. 2). Also, “there is no unified post-modern theory, or even a coherent set of positions” (Best and Kellner, 1991). Hence, post-modernism is defined as a condition which encompasses a wide range of variously interested approaches and theories, often with plural, often conflicting and/or contentious, positions. Henry Giroux describes post-modernism as a phenomenon with “diffuse influence and contradictory character” (1997, p. 117). Linda Hutcheon (1988) claims that “post-modernism goes beyond self-reflexivity to situate discourse in a broader context” (p. 41). Post-modernist approaches are so variable and diffuse that they bring the critics of post-modernism to say, in essence, since the term means everything, it means nothing. However, a more refined expression of such criticism of post-modernism is that it “means many things, [but] it does not mean everything” (Geyh, 2003, p. 3). Despite their many disagreements, post-modern theorists at least agree that post-modernism is a complicated term that eludes a single definition (Milbrandt, 1998). It “refers simultaneously to a cultural and political movement, and to a historical moment” (Pinar, Reynolds, Slattery and Taubman, 1996, p. 451). There is also a consensus that this term draws us away from seeking the truth. “It braces itself for a life without truths, standards and ideals” (Bauman, 1992, p. ix). Post-modernism can be characterized by a complete rejection of any grand narratives to explain phenomena. Callinicos (1989) argues that in spite of incoherence, internal contradictions and the ambiguity of meanings offered by the initial theorists of post-modernism (such as Jean-François Lyotard and Charles Jencks), post-modernism has “represented the convergence of three distinct cultural
trends” (p. 2-3): post-modern art, poststructuralist philosophy, and the theory of post-industrial society. Post-modern art has rejected “the functionalism and austerity prized by the Bauhaus, Mies van der Rohe and Gropius in favour of heterogeneity of styles drawing especially on the past and on mass culture found its apparent counterparts elsewhere in the arts—in return to figuration in painting” (p. 2) and literature. Poststructuralist philosophers, despite their differences, have emphasized “the fragmentary, heterogeneous and plural character of reality, denied human thought the ability to arrive at any objective account of that reality and reduced the bearer of this thought, the subject, to an incoherent welter of sub- and trans-individual drives and desires” (p. 2). Theories of post-industrial society developed by sociologists such as Daniel Bell (1999) and Alain Touraine (1988) have focused on social changes and the resulting transformations from “one economy based on mass industrial production to one in which systematic theoretical research is the engine of growth in the developed world” (p. 3).

Whatever post-modernism is, it has challenged the many assumptions of modernism and has changed the boundaries of definition. Its impact on social cultural and political practices is undeniable, and no less so on the understanding of creativity, as Brown (1999) asserts in his essay, Post-modernism and Creativity: “The majority of self-claimed theories of post-modernism have either rejected or significantly altered the idea of creativity as formulated in 19th— and early 20th— century modernism” (p. 423).

In the following, I attempt to briefly outline the modernist/post-modernist debates in order to show how post-modernism has challenged and has influenced the understanding
of creativity, particularly the two main criteria discussed previously (i.e. “novelty” and “usefulness”) that are accepted, exclusively or inclusively, by all foregoing approaches. Indeed, I do not intend to elaborate the vast post-modernism debates varied from extremely complex and difficult social/political/cultural/philosophical discussions to extremely simplistic and superficial tendencies in contemporary culture. An intricate argument about post-modernism covering the multiple perspectives and theories of post-modernist discourses is out of the scope of this writing. Here, I will only try to portray the contour of the modernism/post-modernism debates that is related to my argument about creativity and art.

Central to my account of creativity is Deleuze and Guattari’s work, which I will discuss in another node. But it is useful to note here, that while some designate Deleuze and Guattari as post-structuralist, Deleuze and Guattari, themselves, rejected this designation; Guattari seriously attacks and describes post-modernism as a new wave of cynicism (Best and Kellner, 1991). Best and Kellner (1991) assert “Deleuze and Guattari do not explicitly adopt the discourse of the post-modern” (p. 31). Whether they are post-modern or not is not a matter for this discussion. The real matters are the revolutionary attributes of their theories, which challenge the many prevalent assumptions and theories of both modernism and post-modernism. Deleuze and Guattari’s work is, as Osborne (2003) states, an inevitable beyond-ness from the binarity of modernism/post-modernism:

In assessing Deleuze, we need to forget Foucault’s oft-quoted remark that the twentieth century would one day be known as Deleuzian. Perhaps we would do better to go back to what Max Weber said about Nietzsche and Marx: not that one had to be a Nietzschean or a Marxist but that these two figures were the indispensable voices of the Next century, the twentieth. Deleuze, one suspects,
Throughout this writing, I do not differentiate between the terms modernism and modernity on the one hand, and post-modernism and post-modernity on the other hand, distinctions between which exist considerable confusions. Modernism and post-modernism have usually been associated with aesthetics, arts, architecture, and literature, while modernity and post-modernity have been used to refer to a set of philosophical, political, social, historical and economic ideas (Burke, 2000; Klages, 2003). However, this distinction does not always work and much of the talk surrounding post-modernism has been concerned with philosophical, social and economic changes. Therefore, in my writing these terms will be used without any distinction.

Modernism/Post-modernism Debates
For the past three decades, post-modern debates have dominated the cultural and intellectual landscape. In aesthetics, the centre of the debate has been whether or not modern art is dead, and if so, what, if any, kind of post-modern art has taken its place. Disputes in philosophy have emerged over whether the tradition of modern philosophy had ended. In social and political fields, new theories have attempted to define and explain aspects of the post-modern phenomenon. Post-modern theorists have radically criticized traditional and modernist culture, values and theories. Some argue that modernity has been the source of suffering and misery for the people “ranging from the peasantry, proletariat, and artisans oppressed by capitalist industrialization to exclusion of women from the public sphere, to the genocide of imperialist colonialization” (Best and
Kellner, 1991, p. 3). Others target the set of disciplinary institutions, practices, and discourses which conceal modernity’s oppression and repression; these critiques argue that modernism, in spite of its ostensible neutrality is fundamentally oppressive/repressive (Foucault, 1973, 1979; Deleuze and Guattari, 1987, 1977/1983). Such critiques assert that modernism’s institutions, practices, and discourses represent modernity as liberating. Modernism, according to such critiques, legitimates its modes of domination and control via its institutions, practices, and discourses. Modernists, however, support the modern tradition, either by ignoring post-modernists, by attacking them in turn, by attempting to elucidate and elaborate the modern discourse, and by trying to show that modernism has “unfulfilled potential” (Habermas, 1981, 1986, 1987) to overcome its limitations and destructive effects. They believe in the preservation of the assumed positive achievements of modernism. Habermas for instance, believes in the potential implicit in the structures of communicative reason; such an argument indicates one kind of attempt to elucidate and elaborate the modernist discourse.

Post-modernism has been discussed as a continuation of, or a radical break from, modernism. Making a connection between past, present, and future, Crowther (1993) contends that the theoretical progress is not just simply matching up some theory arrived at in splendid isolation with some pristine, as it were raw reality. Rather, it is a refinement of our conception of reality, based on the interaction of concepts yielded by tradition and our present mode of inherence in the world. (p. 197)

The prefix “post” in the term post-modern is interpreted in either way: as a description of a radical “negation,” or as a signifier of a “dependence on” and a “continuity with.” Advocates of post-modernism as a continuance of modernism argue that the word “post”
in the term post-modern represents simply a succession and a diachrony of periods, while others read the word “post” as a radical term of denial and negation. The first group (e.g. Best and Kellner, 1991; Crowther, 1993) conceptualizes post-modernism as a tendency within modern itself, and the other reads it as an attempt to liberate thought from the modern ideology and its oppressive conditions (e.g. Callinicos, 1989; Klages, 2003; Loomba, 1998). Best and Kellner (1991) address “post” as an indicator of a historical prolongation and attribute the ambiguity of the term “post-modern” to its application in differing fields. They contend that

all of these “post” terms function as sequential markers, designating that which follows and comes after the modern. The discourse of post-modern thus involves periodizing terms which describe a set of key changes in history, society, culture, and thought. The confusion involved in the discourse of the post-modern results from its usage in different fields and disciplines and the fact that most theorists and commentators on post-modern discourse provide definitions and conceptualizations that are frequently at odds with each other and usually inadequately theorized. (p. 29)

On the contrary, Callinicos (1989) defines post-modernism as a break from “the Enlightenment with which modernism tends to be identified” (p. 25). Likewise, Smith (2001) considers post-modernism a significant departure from the concepts of modernism that dominated the western world for decades. There are scholars who argue post-modernism in both ways. Klages (2003) asserts that post-modernism emerges and grows from and against modernism. Ania Loomba (1998) notes that the prefix “post” “implies an ‘aftermath’ in two senses- temporal, as in coming after, and ideological, as in supplanting” (p. 7). For Geyh (2003), post-modernism is both, a part of and a rupture of/from modernism. She writes,

Many of the conceptual, epistemological, and aesthetic revolutions of modernism continue to evolve as integral parts of post-modernism. Yet, post-modern thought has also launched the most comprehensive and convincing critiques of many of the
grand narratives of modernity (including Hegelianism, Marxism, Freudianism, etc.). (pp. 3-4)

Confusingly enough, Jean-François Lyotard considers post-modern sometimes as a rupture from the tradition, “a manner of forgetting or repressing the past” (1986/2001, p. 1613), and sometimes as “undoubtedly a part of the modern” (1979/1984, p. 79). Answering the question “What is Post-modernism?” in The Post-modern Condition: A Report on Knowledge, Lyotard addresses post-modernism as a continuation of modernism and writes, post-modern “designates the state of our culture following the transformations which, since the end of the nineteenth century, have alerted the game rules for science, literature, and the arts” (1979/1984, p. xxiii). However, later in the same text, he declares that “a work can become modern only if it is first post-modern. Post-modernism thus understood is not modernism at its end but in the nascent state, and this state is constant” (1979/1984, p. 79).

In the art world, post-modernism is mostly considered a continuance of modernism, particularly late modernism. Modernism in art reached its high point in the late nineteenth and twentieth centuries with the notion of “autonomy,” that is, the artwork is motivated and justifiable in purely artistic terms, and is no longer dependent upon factors external to art. In the visual arts, modernism appears as a tendency to use unmodulated colors to present a fresh, direct version of perception, such as is seen in the work of Impressionists such as Camille Pissarro, Claude Monet, and then in the Fauves’ such as Henry Matisse and André Derain. Visual artists such as Pablo Picasso and George Braque initiated Cubism. Kasimir Malevich invented Russian Suprematism. Later, Marcel Duchamp worked towards an abstract and conceptual presentation of psychological processes. Over
the twentieth century, some artists have done a kind of “self-interrogation” (Crowther, 1993). They attempted to visualize beyond the appearances and “articulate the underlying foundations of physiology and psychology” (Wheale, 1995, p. 17). These various and exclusive efforts to discover a kind of art beyond modern assumptions brought about art movements such as Dadaism, surrealism, etc. which did not completely correlate to the characteristics of modernism. Although modern arts and artists can be generally characterized with specific tenets, attempts to classify those artists working in the vein described above as modernist become highly intricate. As Moretti (1988) states, “Modernism” is a portmanteau word that perhaps should not be used too often. But I don’t think I would classify Brecht as a modernist. … I just cannot think of a meaningful category that could include, say, surrealism, *Ulysses*, and something by Brecht. I can’t think what the common attributes of such a concept could be. The objects are too dissimilar. (p. 346)

Wheale (1995) argues that these artists attempted to explore the “complex relations between perception, memory and identity” (p. 17) and through their ironized works, anticipated many of the strategies associated with post-modernism. Abstracting artists combined visual images with written texts, or produced collages of disparate materials which had never been considered to be appropriate to art. Their practices, which were in opposition to traditional artistic practices, became very influential for post-modern art (Harrison, 1991; Krauss, 1985; Wheale, 1995). The common characteristics of modern art offered by Lunn (1982) particularly confirm Wheale’s discussion. Lunn (1982) identifies four major directions of aesthetic modernism emerging across Europe at the end of the nineteenth and twentieth century which bear a strong similarity to the characteristics and underlying definitions of art in post-modernity. In chapter two of
Marxism and Modernism, he discusses four major aesthetic aspects of modernism, implying various and often contrasting movements in modern art:

1. The aesthetic self-consciousness or Self-Reflexiveness;
2. Simultaneity, Juxtaposition, or Montage;
3. Paradox, ambiguity, and uncertainty;
4. Dehumanization and the Demise of the Integrated Individual Subject or Personality. (pp. 34-37)

He contends that in modern art, the media or materials exploited by artists in the process of producing art work become central. Modern artists attempt to deviate from reflective or representative art as well as romantic notion of art as the expression of feeling. He also declared that in modernist art, unity is often created from an assemblage of variant fragments. He writes,

In exploring simultaneity modernists were accepting the ephemeral and transitory present as the locus of art. At best, such an “aesthetic of the new” could freshen perceptions and cleans the sense and language of routine, habitual, and automatic responses to the world, to “defamiliarize” the expected and ordinary connections between things in favour of new, and deeper, ones. Montage need not have such liberating functions, however, and could be readily applied in manipulative advertising and political propaganda, while the cult of novelty might easily degenerate into a worship of changing fashions. (p. 36)

Furthermore, he notes that modern artists celebrate multiplicity and indeterminacy, as opposed to a coherent, fixed, and certain point of view. They “view reality as necessarily constructed from relative perspectives, while they seek to exploit the aesthetic and ethical richness of ambiguous images, sounds, and authorial points of view” (p. 36). At the end, Lunn points out that modern art is a dehumanized art. Expressionists, Cubists, and the other modern artists distort and deconstruct human form to the extent that it vanished entirely in non-figurative abstract art.
Similarly, Owens’s (1980) discussion of the strategies deployed by modernist artists, in order to move beyond the assumptions of modern art, presents post-modern arts as the continuation of late modernism. He categorizes these strategies into six groups: appropriation, site specificity, impermanence, accumulation, discursivity, and hybridization (p. 75). Appropriation is the strategy of using photo-mechanical reproduction of an image to challenge the uniqueness and the “aura” of an art work. Andy Warhol is one of the many artists who deploys this strategy (Figure 1). With reference to site specificity, we see the location of works in a defined context, and/or in the construction of complex environments, installations, and sites as the strategy that artists such as Robert Smithson pursue to challenge the modern assumption of art work as timeless and universal (Figure 2). Owens describes impermanence as a way of using fugitive physical materials or ephemeral popular imagery by the artists in order to raise an objection to the elitism in art (i.e. Jeff Koons’ Pink Panther, Figure 3). Strategies of
Figure 2. Robert Smithson, Spiral Jetty, 1970, (The University of Hawaii, n.d.).

Figure 3. Jeff Koons, Pink Panther, 1988, (The Museum of Modern Art, New York, 1997).

Figure 4. Yve Lomax, Open Rings and Partial Lines, (detail), 1983, (The University of Chicago, n.d.a).
relation out of repetitive or contrasting elements brought together, placed on top, next and near to each other (i.e. Yve Lomax’s Open Rings and Partial Lines, see figure 4).

Discursivity demonstrates a replacement of reference, as in the meaning of an artwork no longer associated to a world outside of its rectangle. Combinations of visual imagery and written text in the same piece animate the silent work of art (i.e. Mary Kelly’s Post-Partum Document, see figure 5). The purity and originality of a piece of art has been challenged by hybridization—collage and montage of different materials, styles and period references either in the physical construction or in the content of the artwork (i.e. Tom Phillips’ and Peter Greenaway’s film, “TV Dante,” 1989).
Due to all these commonalities between what is described as post-modern art, and what is seen in late modern movements such as Dadaism, Constructivism, and Surrealism, theorists such as Callinicos (1989) come to argue that “both the definitions given and the examples cited of post-modern art place it most plausibly as a continuation of and not a break from the fin-de-siècle Modernist revolution” (p. 15).

Despite all debates over whether post-modernism is continuity of modernism or not, and in spite of ambiguities and contradictions presenting mutually and internally inconsistent accounts of post-modernism, thinking about modernism seems probably the easiest way to begin thinking about post-modernism.

**Characteristics of Modernism and Post-modernism**

Modernism as a development in the arts began when a movement formed in visual arts, music, literature, and drama that “rejected the old Victorian standards of how art should be made, consumed, what it should mean” (Klages, 2003, ¶ 3) and “asserted the independence of the artist free to explore a mental and psychological world as much as a physical one” (Smith, 2001, p. 1). It was a revolt against “the alienating aspects of industrialization and rationalization, while seeking to transform culture and to find creative self-organization in art” (Best and Kellner, 1991, p. 2). For Ralph Smith, as Clark (1996) describes, modernism referred to the era of the avant-grade, in which artists and intellectuals were elites who preferred to step away from the expectations of social mainstream (Milbrandt, 1998). Elitism in modernism manifested itself as a kind of obstinate antagonism to mass culture which is challenged significantly by post-modern
discourses (Huyssen, 1992). Modern artists believed in the individual genius of artists and the autonomy of art (Keith, 1995). They emphasized “art for art’s sake” and were driven by notions of inspiration, originality, and purity (Clark, 1996). Best and Kellner (1991) in the first chapter of their book, *Post-modern Theory: Critical Interrogations*, argue that modern art opened the way for modernity—“the products of consumer society, new technologies, and new modes of transportation and communication” (pp. 2-3) to enter everyday life.

Modernity as a historical and philosophical term has been associated with the modern world and “processes of individualization, secularization, industrialization, cultural differentiation, commodification, urbanization, bureaucratization, and rationalization” (Best and Kellner, 1991, p. 3). Berman (1982) addresses the modern as characterized by innovation, novelty, and dynamism, while Whimster and Lash (1987) relate the dissemination of the modern mentality to the rise of a rationalist philosophy begun by Descartes and focused on systematic, pragmatic knowledge of the natural world in the early seventeenth century. Modernity has been known as an outcome of the Age of Enlightenment beginning from the eighteen-century philosophical movement with thinkers such as Diderot, Voltaire, and Rousseau. This movement proceeds through to Kant and Hegel. The Enlightenment project intended to develop a concept of “social progress which relied on a notion of human perfectibility” (Wheale, 1995, p. 6). This project proposed a universal form of reason that appeared in a form of absolutism and was associated with Euro-western culture.
Generally, modernity has been characterized by the intellect as a positive progressive movement; the power of reason over ignorance; the power of order over disorder; the power of science over superstition; and the assumption of society as moving inexorably onwards and upwards. Modernists emphasize reason and rationality as the source of progress (for those understood to possess it) in knowledge and society. Order created by rationality has superiority, in this point of view. According to modernists, efficiency is the result of greater order; disorder and chaos are antithetical to modernism. Modernism reckons everything not consonant with its definition of order as disorder and as “the other.” “Thus anything non-white, non-male, non-heterosexual, non-rational, etc. becomes part of disorder, and has to be eliminated from the ordered, rational modern society” (Klages, 2003, n. pag.) Modernism treats absolutes such as truth, certainty, reality including notions of “beauty” as articles of faith (Clark, 1996). According to this approach, science is universal, neutral and is mandated to discover eternal truths about the world, regardless of the individual status of the knower (Klages, 2003). Scientific rationalism is the sole locus of reason, outside of which nothing exists to which one could appeal for truth claims. Modernists separate and categorize and put all things into rationally designated individual drawers. And finally, modernist theorists believe that society moves according to immutable and unchanging laws, that there is a driving force that propels society onward (Burke, 2000).

In both aesthetic modernity and historical modernity, what is central is a belief in a grand theory of the advances of progress and logic toward perfection that has universal
application. Modernists believe that fundamental laws which govern our existence can be controlled and exploited to ensure a brighter future for humankind (Lyotard, 1979/1984). For Lyotard, as Geyh (2003) suggests, modernity is the Enlightenment, or is the result of Enlightenment thought. Lyotard (1979/1984), in *The Post-modern Condition*, argues that the Enlightenment search for a comprehensive method to explain the physical/social world was an endeavour to gain rational control of the human environment. He discusses “modern” as a term that designates

any science that legitimates itself with reference to a meta-discourse … making an explicit appeal to some grand narrative, such as the dialectics of Spirit, the hermeneutics of meaning, the emancipation of the rational or working subject, or the creation of wealth. (Lyotard, 1979/1984, p. xxiii)

In *Defining the Post-modern*, Lyotard addresses the failure of modernity and the Enlightenment project:

This idea of progress as possible, probable or necessary was rooted in the certainty that the development of the arts, technology, knowledge and liberty would be profitable to mankind as a whole. … After two centuries, we are more sensitive to signs that signify the contrary. Neither economic nor political liberalism, nor the various Marxisms, emerge from the sanguinary last two centuries free from the suspicion of crimes against mankind. … What kind of thought is able to sublet (Aufheben) Auschwitz in a general (either empirical or speculative) process towards a universal emancipation? (Lyotard, 1986/2001, pp. 1613-14)

Such an analysis of modernity and Enlightenment leads Lyotard to establish a theory of post-modernity, in which, as Callinicos (1989) portrays, the collapse of the grand narratives is a constitutive phenomenon. He contends that “modernity, in whatever age it appears, cannot exist without a shattering of belief and without discovery of the ‘lack of reality’ of reality, together with the invention of other realities” (Lyotard, 1979/1984, p. 77). In *The Post-modern Condition*, Lyotard (1979/1984) describes a shift in the status of knowledge, and seeks to redefine what he calls “post-modern knowledge” in terms of
“paralogy” (p. 61) and the heterogeneity of language games. For Lyotard, post-modern scientific epistemologies are characterized by the rejection of a universal meta-language in which all other languages can be translated and evaluated. In fact, Lyotard’s account of post-modernism is associated with theoretical post-modernity and is philosophically close to post-structuralism, with the latter’s radical critiques of traditional views of knowledge, truth, and meaning. He writes,

The post-modern would be that which, in the modern, puts forward the unpresentable in presentation itself; that which denies itself the solace of good forms, the consensus of a taste which would make it possible to share collectively the nostalgia for the unattainable; that which searches for new presentations, not in order to enjoy them but in order to impart a stronger sense of the unpresentable. A post-modern artist or writer is in the position of a philosopher: the text he writes, the work he produces are not in principle governed by preestablished rules, and they cannot be judged according to a determining judgment, by applying familiar categories to the text or to the work. Those rules and categories are what the work of art itself is looking for. The artist and the writer, then, are working without rules in order to formulate the rules of what will have been done. Hence the fact that work and text have the characters of an event; hence also, they always come too late for their author, or, what amounts to the same thing, their being put into work, their realization... always begin too soon. Post modern would have to be understood according to the paradox of the future ... anterior. (Lyotard, 1979/1984, p. 81)

Clark (1996) states that post-modern thinkers use connective models for explaining social interaction that better reflect the multifaceted nature of human existence and that post-modernism proposes that forms of knowledge do not exist as universal absolutes but are constructed by people living within communities. Therefore, post-modernism is a critique of grand narratives which try to mask contradictions and which try to draw everything into the rational and absolute order mandated by modernism. Post-modernism is associated with a rejection of all appeals to foundational, transcendental, or universal truths or meta-narratives. On the contrary, it appreciates a multiplicity of cultures, celebrates difference, and searches for commonality or relational positioning between
cultures. Theorists with this approach emphasize that reality is always contextual and provisional; it is not universal or stable. They believe in the end of history\(^3\), the end of meaning, the death of the subject, and the illusionary status of progress. Unlike modernity, which is concerned with mathematical and mechanistic cosmology, post-modernity holds to the interpretation of meaning as a socially constructed fluid and contextual entity. Post-modernity presents the failure of reason to understand the world and asserts the impossibility of any final meaning. “A post-modernist thus calls for new categories, modes of thought and writing, and values and politics to overcome the deficiencies of modern discourses and practices” (Best and Kellner, 1991, p. 30).

According to Clark (1996), in postmodernism, appropriation, collage, and juxtaposition of meaning are privileged above the modernist tropes of inspiration, originality, and purity. In other words, postmodern thinkers promote flexibility, diversity, differentiation, mobility, communication, decentralization, and internationalization. Post-modernism celebrates fragmentation, provisionality or incoherence, and seeks pluralism as well as the location of perspective. Hence, post-modernism is drawn to look for justice, complexity, compassion, ecological sustainability, spirituality, and internal relatedness, while injustice, inequality, sexism, racism can be seen increasingly as effects of modern society. Modernism explains social interaction in terms of opposing binary poles (male/female, capitalist/socialist, conservative/liberal, subject/object, personal/public).

Post-modernism, however, rejects artificial bifurcations or dualism and uses connective

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\(^3\) Some post-modern theorists such as Fredric Jameson, Jean Baudrillard and Francis Fukuyama argue that our post-modern society has reached the “end of history.” According to them, the end of the belief in teleological meta-narratives has led us to understand history as spatial or flattened inhabiting the perpetual present. In this sense, post-modern culture lacks a sense of historical consciousness or of cause and effect.
models for explaining social interaction that better reflect the multifaceted nature of human existence.

A review of the literature (e.g. Adler, 1990; Bell, 1999; Callinicos, 1989; Clark, 1996; Lyotard, 1984, 1986/2001) on post-modernism explicitly divulges that as a theoretical break, post-modern is an inclusive phenomenon that encompasses all critiques of modern theory and new models of art, thought, and subjectivity. It can be described as a matrix of discourses constituted of a broad range of theoretical, cultural, and social tendencies. These theories and approaches, including post-structuralism, feminism, new-Marxist and postcolonial criticism challenge the basic tenets of modernity, even as they may have some commonalities with modernism in art, such as “rejecting boundaries between high and low forms of art, emphasizing pastiche, parody, bricolage, and irony” (Klages, 2003, no pag.).

Post-structuralist thinkers from a number of disciplines critique modernism’s structuralist assumptions and claims which operate on the bases of unmediated access to truth outside the particular perspective. According to Pinar, Reynolds, Slattery and Taubman (1996) “[Post-structuralism] has frequently been linked with Foucault, Lacan, Deleuze, Guattari, Kristeva, and Derrida” (p. 451), although they, themselves, mostly have denied such a labelling and some of them have even attacked the application of the term to their own work. Regardless of whether or not these thinkers are post-modern, they have radically interrogated many of the grand narratives of modernism. Indeed, because Derrida’s primary argument is against the Western notion of a structure and a knowable centre, logocentricity, and because Foucault’s work is a critique of Western systems of
knowledge and its “truth games,” as well as an investigation for developing alternative modes of knowledge and discourse, and because of Deleuze and Guattari’s new models of theory, practice, and subjectivity, we see undermined the universal applicability and value of particular conceptions of reason and right as the infrastructures of modernist theory and method.

Jacques Derrida (1978) and his followers argue that language makes any claim to truth highly problematic. He shows, in his deconstructionist criticism, that language is a system of deferral in which signifiers cannot lead to a fixed and single signified but can only lead to more signifiers (Derrida, 1978). Therefore, language is a much less stable and transparent medium, contrary to structuralists’ assumptions such as the anthropologist Levi Strauss (1963) or the linguist Ferdinand de Saussure (1974).

According to a structuralist analysis, language is a constituted system of signs. Spinks (2001) contends that these signs have no meanings per se; their meanings are produced in their differential relations to the total signifying structure. Derrida (1978) criticizes this structuralists’ claim and contends that the signifying structure produced by a play of differences can never be accounted for or explained from within the system itself. Such a system, organizing the differential play of signs, cannot transcend to the same “play” it portrays. Derrida (1978) argues that the non-transparency of language allows us to create and explain our own meanings. Language with rhetorical and metaphorical traits cannot reflect reality. It just, as Keith (1995) points out, helps to reflect what we conceive of as reality. Derrida (1978) argues that any claim to truth is an interpretation among many. Traditional western philosophy’s belief of a truth outside of the critic and history that we
might discern has been called to question by post-structuralist thinkers. Instead of focusing on language as does Derrida, Michel Foucault, as Keith (1995) asserts, concentrates “on the traditional grand explanatory systems apparent in western system of knowledge” (p. 43). According to Besley (2005), Foucault’s project is to “historicise and analyze how in Western culture the specific ‘truth games’ in the social sciences such as economics, biology, psychiatry, medicine and penology have developed knowledge and techniques to enable people to understand themselves” (p. 77).

From this overview of the literature one might conclude that post-structuralist thinkers, on the whole, question:

1. access to truth outside a particular perspective
2. use of language as a transparent medium to convey meaning
3. absolute founding and controlling by a first principle
4. master narratives and true knowledge

Neo-Marxist and postcolonial criticism questions the superiority of an economically dominating, imperial, white, male culture. Such thinkers emphasize the need to investigate “that system of power that authorizes certain representations while blocking, prohibiting, and invalidating others” (Owens, 1983, p. 59). According to Best and Kellner (1991), theorists such as Fredric Jameson and David Harvey see post-modernism as “the cultural logic of late-capitalism.” They examine new formations by the “degree of capital penetration and homogenization across the globe” (p. 3). For Jameson (1991), post-modernism is “closely related” (p. 17) to consumer capitalism. Jameson argues that post-
modern culture becomes a pastiche, or a kind of endless repetition/imitation of modernist tropes, which effectively ruptures notions of style and individualism. He asserts that “modernist styles thereby become post-modernist codes” (1991, p. 17) which, by virtue of their “discontinuous material signifiers” (1985, p. 119) defy coherence. In Post-modernism and Consumer Society, Jameson (1985) claims that “there is a way in which post-modernism replicates … the logic of consumer capitalism” but also questions whether “there is also a way in which it resists that logic” (p. 125). Ultimately however, as Goulimari (2004) proposes, in Post-modernism, or, the Cultural Logic of Late Capitalism, Jameson sees post-modernism as less resistant and more a function of the new economic moment and its logic; social fragmentation, as a feature of “post-modern period” “expresses, rather than resists, consumer capitalism” (¶ 9). Jameson’s theory provides post-modernism a (Marxist) economic base. According to him, the rise of technology, the proliferation of a ubiquitous culture of media, and global economies are transforming the economy of developed countries from a manufacturing to an information and services base. Along with these politico-economic transformations, a new socio-cultural formation emerges. Neo-Marxists such as Jameson and Harvey believe that the new formation requires new concepts and theories. Geyh (2003) believed that “Jameson himself is at once a theorist and a harsh critic of these transformations” (p. 4). David Harvey’s work (1989), The Condition of Post-modernity, is complementary to Jameson’s theory. For him, the links between fragmentation and late capitalism are very obvious. He contends that “the reproduction of the social and symbolic order through the exploration of difference and ‘otherness’ is all too evident in the climate of post-modernism” (p. 345), and “racial minorities, colonized peoples, women, etc. … become a
part of the very fragmentation which a mobile capitalism and flexible accumulation can feed upon” (p. 303).

In summary, Modernism in Western thought and culture is under attack from a multitude of angles by post-modern thinkers. Euro-Western cultural elitism and its correlative arrogance are attacked by post-colonial critics, while the other Neo-Marxists scrutinize forms of economy, society, culture, and experience. Theorists such as Baudrillard (1988), Lyotard (1984), and Harvey (1989) address the new forms of knowledge, and changes in the socio-economic systems that produce a post-modern social formation while others, often post-structuralists such as Derrida (1978), Foucault (1976, 1980), Kristeva (1982) engage more with social criticism and social structures.

So far, the sketches of dominant definitions of and approaches to creativity over the last 50 years have been presented here, as has an examination of how post-modernist theories in the late twentieth century have influenced all domains and disciplines including the study of creativity. Of course, I have not intended to present a comprehensive critique of all definitions and approaches but rather to sketch a terrain on which we can see the rhizomatic relations of discourses of creativity. The subsequent argument indicates how post-modernism challenges two widely accepted criteria for creativity by researchers.

**Post-modernist Takes on Novelty and Appropriateness**

In the following I attempt to show how post-modern theories that tend to define concepts contextually, not absolutely, challenge the criteria of novelty described as being original and new, and usefulness defined as being appropriate, relevant, and effective to the
context in which it occurs. These two main criteria for creativity embraced by a social psychology connect the field of creativity to the discourses of modernism. Novelty and progress as goals of modernism have been radically challenged by post-modern theories.

Here, it is essential to remind the reader that there is no collective definition of post-modernism and that there is only a general consensus on post-modernism as a condition with a broad diversity of theories. Similarly, there is no central post-modern theory of creativity. Post-modern approaches to creativity encompass a wide variety of perspectives ranging from redefinition of the concept to complete rejection of the possibility of creativity. However, despite such variety, all have called into question the modernist concept of creativity formulated in the nineteenth and early twentieth centuries.

Creativity and novelty

Creativity is commonly understood in terms of innovation which in turn has been defined as the creation or adoption of new ideas (Amabile, 1988; Daft, 1978; Zaltman, Duncan, and Holbek, 1973). Adaptation of newness means newness is new to the adapting unit (Angle and Van de Ven, 1989). Hence, newness as a property of innovation might have differing definitions in varied fields; for instance, in psychological studies, the focus is mostly on the study of innovation at the individual level, and in management and economics, innovation is studied at the organizational level and is defined as the adoption of a new product, service, process, technology, policy, structure or administrative system (Daft, 1978; Damanpour, 1991; Zaltman, Duncan and Holbek, 1973).
Likewise, artistic creativity, particularly in its modernist sense, is intertwined with the notion of originality. Originality, for both modern and late modern artists, was fundamental and was associated with the notion of “artistic genius.” Krauss (1985) describes novelty as a constant theme in the vanguardist discourse. She argues that the perception of originality for the avant-grade was more than a rejection or dissolution of the past; it was a myth, “a literal origin, a beginning from ground zero, a birth” (p. 157). Krauss continues, “The self as origin is safe from contamination by tradition because it possesses a kind of originary naïveté. … the self as origin has the potential for continual acts of regeneration, a perpetuation of self-birth” (p. 157). She notes that originality for vanguardists was a claim of their rights. They alleged that they were the origin of their work, so their uniqueness and singularities guaranteed the originality of their works as their productions.

In modern art, individual artistic expression is believed to have authenticity and, certainly, authority. Modern artists seem to be autonomous subjects who abstain from the expectations of the social mainstream (Milbrandt, 1998) and work based on their own inspiration, originality, and purity (Clark, 1996). Such qualities make them able to create authentic and genuine works which are “new” and “original.” Both artist as autonomous subject and originality of a work of art have been seriously under attack by post-modern theorists.
Artists as autonomous subjects: Brown (1999) in his essay, Post-modernism and Creativity, argues that empirical approaches to creativity have been challenged with post-modernism’s decentralization of the subject and deconstruction of absolutes. He writes, “The modernist concept of creativity as pure expression, for example, has been widely discredited, but no central theory of post-modern creativity has emerged to take its place” (p. 428). Brown contends that the post-modernist critique of the autonomous subject has resulted in a period of post-creativity, in which the subject is considered a site through which language speaks. Post-modern approaches to creativity reject the concept of “autonomous subject” who is fully comprehensible outside of (or prior to) language, who is capable of originating meaning. According to Brown, the post-modern subject is “equally a cultural being constructed through the operations of language and a natural being whose experiences extend beyond language” (Brown, 1999, p. 427).

Derrida (1976) holds that a signified cannot be separated from its signifier, so, a content cannot be free from an element by which the content is expressed. Moreover, there is no transcendental signified to which all signifiers refer (Derrida, 1976). This implies that there is nothing outside of symbolic systems. In this sense, pure content cannot exist and accordingly there is no pure expression. All meanings are necessarily contextual and reflexive. Derrida (1978) states that meaning is endlessly created, so in some sense the artist is but a node in the infinite. To support the idea of the autonomous subject, modernism constructs a natural being conceived in terms of a unified rationality. Such a subject is a consciousness who has access to a complete meaning and then is able to express it. Therefore, the first attempts to attack the autonomy of the subject begin by
focusing on theories pertaining to unconscious psychosomatic processes. Kristeva (1986),
in this manner, proposes “semiology” which is based on two concepts: phenotext—the
perceivable signifying system—and genotext—the body of the bio-physiological process
constrained by the social code and not reducible to the language system. The genotext
exists within the phenotext. She offers the theory of the “speaking subject.” Her
“speaking subject” is a divided subject consisting of a conscious and an unconscious
mind. The conscious mind includes all social confines—family structures, modes of
production, etc., and the unconscious mind contains bio-physiological processes or what
Freud defines as “drives.” The “speaking subject,” as Kristeva defines it, is not a
transcendental ego existing outside of the realm of experience, or detached from its
history, its unconscious, and its body. The speaking subject is not an entity prior to
language and expressed through it, but a constant “present” in the act of articulation
itself. The subject of this act, argues Kristeva, “cannot be a transcendental subject, who
lacks the shift, the split in logical unity brought about by language which separates out,
within the signifying body, the symbolic order from the workings of the libido” (1986, p.
29). This split embodies the “infinitization of the symbolic system.” The speaking subject
is capable of “renewing the order in which he is inescapably caught up; and that capacity
is, for the subject, the capacity for enjoyment” (p. 29).

In fact, Kristeva’s “speaking subject” constitutes agency and creativity. It is not an
autonomous subject prior to language and sign systems, neither is it entirely engraved
within language. The subject, according to Kristeva is perpetually “in process” or “in
crisis.” She claims that the speaking subject cannot exist on their own, but that they stand
“on the fragile threshold as if stranded on account of an impossible demarcation” (1982, p. 85). Such a definition of the subject makes Kristeva’s model significant for creativity study:

The importance of Kristeva’s model of the speaking subject for a discussion of creativity lies in its description of the subject’s enunciations as motivated—even original—without implying the subject’s self-presence prior to enunciation. (Brown, 1999, p. 427).

Kristeva’s split subject who initiates a creative act cannot be described as autonomous. A speaking subject is bound to the language and to the body, and so their sense of the self is continuously deferred. Brown (1999) concludes that with Kristeva’s theory creative “activity, in fact, is necessarily implicit to some degree in any enunciation, because the speaking subject can no more exist wholly within the confines of language than entirely within psychosomatic processes” (p. 428).

The work of art as original: Alongside the notion of autonomous artists, the modern concept of originality and authenticity of the artwork has been attacked by post-modern artists and theorists. According to Brown (1999) post-modern theorists argue that “creativity must be redefined from its associations with expression of original content toward the collage-like practice of rearranging pre-existing information in original configurations” (p. 423). Post-modern artists have challenged the idea of originality and replaced it with the concept of reference. Modern art as new, innovative, original, and avant-garde has been replaced with a kind of art which is, as Adler (1990) describes, “aggressively derivative” (p. 1366). By celebrating their derivativeness, post-modern artists attack the modernist notion of “novelty” as one of the basic criteria that established the value of modernist concept of creativity. Instead, they self-consciously “combine
different stylistic tendencies or modes of representation and material in the space of a single picture” (Crowther, 1993, p. 199). For post-modern artists, indeed, the post-modern era is the end of the “new.” They demythologize aesthetic purity and freedom and “watch it splintering into endless replication” (Krauss, 1985, p. 170). Post-modern artists take existing ideas and place them in new contexts and (re)present them as their own works. What is considered as copy, and is thus of course inauthentic by modernist standards, is re-valued by post-modernists and connected to its history by raising the issue that there is nothing new in the world.

Sherrie Levine takes famous art photographs and simply re-photographs them. She creates a piece of art by making a new version of famous works or by reproducing the exact, indistinguishable copy of the originals which are not original. She reinforces the notion that the “original” is an ideal that can never be achieved. In doing so, she questions the modernist notion of originality and authenticity. In an interview, talking about her work, Levine states,

I am interested in making a work that has as much aura as its reference. For me the tension between the reference and the new work doesn’t really exist unless the new work has an artistic presence of its own. Otherwise, it just becomes a copy, which is not that interesting. (n.d.)

David Salle with his juxtaposed images from art history or popular culture—pornography, advertising, and cartoons—presents the impossibility of originality in the post-modern era. In an interview with Frederic Tuten, Salle asserts,

I grew up in a time when the idea of a work of art as having an autonomous life was still viable. The central idea was to make something which, instead of pointing to an experience, becomes the experience itself. … When I came along, the making-meaning part of painting occurred primarily within the process of
Instead of being original, Salle has literary and visual references for both the idea and images in his paintings. Demonic Roland’s (Figure 6) title comes from the Song of Roland of the Charlemagne cycle, while its images have been taken from both high and low art. Salle, in his juxtapositions, dissolves conventional images of conflict and then works them back in layers of visual-verbal puns and allusions. These unconnected, contradictory images and ideas are combined and connected in a way that completely thwarts any narrative and meaning. A critic called Salle’s paintings “dead, inert representations of the impossibility of passion in a culture that has institutionalized self-expression” (Lawson, 1981, p. 42) and insisted that his paintings are about “all the paintings [he] won’t make or can’t make” (Salle, 1980, p. 44).
Julie Wachtel’s paintings reject “not just the idea of originality but the idea of Quality” (Levin, 1985, p. 81). She takes “corny, sentimental cartoon images” (Steinbach, 2003, p. 54) from greeting cards and combines them in her works. Jeff Koons never touches or makes his own art. He simply hires highly skilled artisans and industrial producers to do this. Removing himself as both designer and producer, he demotes “the artist” to, as he calls it, “an ideas person.” He undermines the notion of artistic authorship when he steals Duchamp’s idea about ready-mades and displays his own ready-made. It seems clear that much of post-modernism’s art is determined to comment on the spurious notion of “originality.”

Among other philosophical endeavours, Walter Benjamin’s (1968) theory of mechanical reproduction, has intensely challenged the idea of creative works as original and authentic. In his famous essay, The Work of Art in the Age of Mechanical Reproduction Benjamin argues that “a work of art has always been reproducible,” but the mechanical reproduction of artistic productions “represents something new” (p. 218). He notes that even a perfect reproduction of an artwork lacks the uniqueness of an original. He defines the unique existence of a work of art in terms of its existence in time. He writes,

This unique existence of the work of art determined the history to which it was subject throughout the time of its existence. This includes the changes which it may have suffered in physical condition over the years as well as the various changes in its ownership. The traces of the first can be revealed only by chemical or physical analyses which it is impossible to perform on a reproduction; changes of ownership are subject to a tradition which must be traced from the situation of the original. (p. 220)

Then, Benjamin notes that only the original, not manual or technical reproductions, can be authentic. He defines authenticity as “the essence of all that is transmissible from its
beginning, ranging from its substantive duration to its testimony to the history which it has experienced” (p. 221). Since a reproduction lacks historical testimony, it has no authenticity. The critical point here is that, when the original was free of potential reproduction, it preserved all the artwork’s authority; multiple reproductions, or the possibility of reproduction, have dissolved the authenticity and genuineness of “the masterpiece.” Benjamin, in his discussion, indicates that the art world elite, by emphasizing art works’ ostensible uniqueness and their aura, has been threatened by the emergence of photomechanical reproduction:

From a photographic negative, for example, one can make any number of prints; to ask for the “authentic” print makes no sense. But the instant the criterion of authenticity ceases to be applicable to artistic production, the total function of art is reversed. Instead of being based on ritual, it begins to be based on another practice—politics. (p. 224)

Mechanical reproduction is coincident with the rise of socialism and democratic consumption of imagery while the traditional art world is essentially ritualistic and functions by distancing society from works of art. Such works of art exist in a “pure” form without any social function and categorizable content. This is the famous nineteenth century doctrine of “art for art’s sake.” Benjamin claims that art for art’s sake is a deliberate act of cultural mystification, and is a doomed project. Benjamin criticizes the idea that art originated from individuality and genius. In fact, he tends to distrust the notion of originality and innovation in artwork. Benjamin sees the work of art not as an autonomous work by an individual artist—in other words, he is not a modernist in his view of art. Instead, Benjamin sees art as a joint production, in a sense, between artists and their typically advantaged context. He shows that what makes an object a piece of art
is a certain privileged value that sets it apart from what are seen as ordinary objects, and, in this way, prefigures Duchamp theoretically.

What are these values that delineate a work, an object, a person, etc. as creative? Who defines/determines/establishes such values and rules? Asking the questions, “who may create art and for what purposes?” and “who may consume art and for what purposes?” leads us to consider the specific aspects by which the work of art is created and distributed.

Creativity and appropriateness

The modernist concept of “novelty” has also been criticized by post-modernists in terms of its association with the idea of “progress.” Critiques from these quarters, as Berry and Siegel (2000) argue, have clearly displayed how “some of the bloodiest carnage of the 20th [century] was carried out in the name of bringing newness into the world” (¶ 3). Grosz (1999) believes that the core concept of a modernist faith in progress is “change” as a constant, predictable, measured, regulated transformation. It is all about regulation, stability, and control or, as Foucault envisages it, a “regulating power” which contains unpredictability, the emergence of singularities, and the consequent realignment of power (Foucault, 1969/1972). Progress, in this sense, is a controlled regulated development. “New” and “novel” in such paradigm cannot be anything except “innovation within legitimized parameters” (Grosz, 1999, p. 39). Hence, the other proposed criterion for creativity, appropriateness, has been seen as politics revelling in the creativity discourse. As mentioned before, there is a consensus among creativity theorists that a novel
production is creative when it is valuable, influential, and useful in its domain. From a post-modernist point of view, defining creativity as “appropriate” for a field, is a way of positioning it in institutional settings. It locates the creative individual both within the boundary of the institutions that regulate creative production, and within the society that defines and governs the operation of these institutions. Therefore, being useful and appropriate for a field refers not only to the political body of the field but the operational state required by a society of its institutions, which is not sequential but rhizomatic and complex. It is a way to convert creative activities into authorized productivity (useful production legitimized by institutional and societal systems) that can be consumed. In the art world, it means that what is “art” is that which is recognized and introduced as art by art institutions. As Danto (1987) argues, art institutions, “the galleries, the collectors, the art magazines, the museum and finally the corporations” have become “the major patrons of the age” (p. 205). So it is these institutions that determine what art is in their adoption of artists, who determine how we consume art, and, of course, what work is “creative” and who can be an “artist.” Thus the modernist aestheticization of art is replaced by a systematized capitalist commodification of art.

The work of art as commodity: Acknowledging the central role of commodities in capitalism, Marx begins his Capital with an extended analysis of commodities and their values. He writes,

The wealth of those societies in which the capitalist mode of production prevails, presents itself as “an immense accumulation of commodities,” its unit being a

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4 The term “mode of production” is used by Marx to refer to the specific organization of economic production in a given society. A “mode of production” includes the means of production (machines, raw materials, factories and other facilities), labor and the organization of the labor force.
single commodity. Our investigation must therefore begin with the analysis of a commodity. (Marx, 1967/1979, p. 35)

He defines a commodity as “a material thing confronting man [sic], a thing of a certain utility for him, in which a definite quantity of labour is fixed or materialized” (Marx, 1969, p. 164). According to Marx, a commodity is an external object produced not for its own immediate consumption but for large-scale market exchange. For he distinguishes between two kinds of value attributed to commodity: use-value and exchange-value.

“The utility of a thing makes it a use-value. … [Hence u]se-value become a reality only by use or consumption” (1967/1979, p. 36). Exchange-value is the value of a commodity in relation to other commodities in the market. So, the exchange-value of a given commodity is an expression of, first something equal (a quarter of wheat is equal and exchangeable with x silk or y gold), and secondly, “something contained in it, yet distinguishable from it” (x silk or y gold are also replaceable by each other or equal to each other) (1967/1979, p. 37).

According to Marx, an object in its commodity form “becomes increasingly one-sided. … [I]ts immediate use-value for the gratification of the needs of its producer appears wholly adventitious … and inessential…” (cited in Bennett, 2001, ¶ 17). Unequal objects in their commodity forms become identical and equal in terms of their exchange-value. Jameson (1991) refers to such equivalence as “the mystery of the equivalence of radically different things” (p. 233). In fact commodification defines objects as units of exchange and thereby homogenizes them and demolishes their “varied forms of existence as objects of utility” (Marx, 1967/1979, p. 73). The object, as Taussig (1980) states, based on a market exchange and its exchange-value, becomes equivalent with any other commodity
no matter how much they may differ in terms of their use-value properties—their physical features, symbolic attributes, and so on. By virtue of this abstraction, which is based on market exchange and the universal equivalence of money, a palace is equal to a certain number of shoes, just as a pair of shoes is equal to a certain fraction of an animal’s hide. (pp. 25-26.)

For Marx the harm of commodification is not to products but rather to humans. His notion of “commodity fetishism” is a comprehensive critique of the social impact of commodification. According to him, commodification entails an unnatural transmission of energy from humans to commodified objects. He argues that commodification objectifies labour and labourer and ignores human agency to resist the never-ending spread of the market. It also masks power relations resulting from the capitalist way of making profit: although a portion of the labour “is exchanged for the equivalent of the worker’s wages; another portion is appropriated by the capitalist without any equivalent being paid” (Marx, cited in Camatte, 1988, p. 53).

If we agree with Bennett (2001) that “there is no vision of capitalist or non-capitalist economy today that does not depend to some extent upon the commodity form,” (Bennett, 2001, ¶ 9) and if we accept his argument that commodity consumption structures our everyday life, our “identities, aspirations and imaginations” (Bennett, 2001, ¶ 8), we must therefore conclude that cultural products, such as art, become no different from commodities in general. In this regard, Horkheimer and Adorno (2002) in their analysis of their contemporary culture note that “culture today is infecting everything with sameness. Film, radio, and magazines form a system. Each branch of culture is unanimous within itself and all are unanimous together” (p. 94). They write,

Films and radio no longer need to present themselves as art. The truth that they are nothing but business is used as an ideology to legitimize the trash they
intentionally produce. They call themselves industries, and the published figures for their directors’ incomes quell any doubts about the social necessity of their finished products. (p. 95)

Criticizing the industrialized and standardized capitalist culture, Horkheimer and Adorno argue that cultural industry has transferred art into a commodity.⁵ Similarly, Adorno (1997) in his Aesthetic Theory contends that in the capitalist mode of production “the absolute artwork converges with the absolute commodity” (p. 21). Artworks are no longer understood as separate from the dynamics of their commodity forms.

According to Horkheimer and Adorno, the culture industry colonizes human creativity. They contend that mass-produced art in the culture industry benefits only prescribed amusements. In a capitalist system, creativity becomes “entertainment,” cultural products are designed meticulously and professionally to encourage more consumption. A pre-capitalist concept of creativity as a primary drive for artists’ self-expression is de/re-territorialized to divert “us from dehumanizing forms of work even as it mirrors its monotonous structure” (Bennett, 2001, ¶ 41).

⁵ In Dialectic of Enlightenment they write, “The culture industry can boast of having energetically accomplished and elevated to a principle the often inept transposition of art into the consumption sphere” (Horkheimer and Adorno, 2002, p. 107)
We’ll help you cultivate your creativity so you can better meet the challenges in your workplace. Right now, you've probably got a problem that needs a creative solution. And you probably feel like you're facing a brick wall with no toe-holds in it. You're wondering how on earth you can even start your brain thinking creatively when all those years of business school made a habit of logical thinking, not creative. But when we listen to you, ask the right questions and then assign specific tasks to help you develop your creative problem-solving skills, what we're doing is giving you the tools to climb that wall. (Creativity Explosion, n.d. ¶ 2)

It seems the new ethos for success is built by a package of /for creativity, one full of formulas and techniques -- a capsule of handy tools and techniques offered to increase creativity. It is simple. In order to survive in the contemporary complex world with its globalized, hypercompetitive, post-network economy we just need to order the package, apply the techniques and become creative and productive. Such prescriptions, typical of the many statements about creativity and its significance for our lives, are seen everywhere. The discourse of creativity is widespread within society (Thrift, 2002), even to the extent that it has seeped into the unconscious. This discourse is everywhere, not only in the commercial world but increasingly in academic and cultural life.
In this node, I attempt to discuss how discourses of creativity, whether popular or academic, psychological, managerial, and/or post-modern, are currently engaged with and complicit in what has come to be called the “creativity explosion.” The “creativity explosion” is a discursive reference initiated (critically) by Osborne (2003) to describe the growing mandatory role assigned to creativity, required and so produced within a capitalist context, in which to be creative is “a kind of moral imperative.” As Osborne (2003) states,

But it is not only the popular psychologists of the Tony Buzan or Edward de Bono variety who have been engaged in the creativity explosion. On a somewhat more academic level, the long-standing concern with creativity as an aspect of intelligence (Guilford, 1950) has mutated into a more exclusive focus on the intrinsic values of creativity as an end in itself. Here, creativity is less a unit of intelligence that can be measured than it is a general cognitive value that can be promoted by the use of certain techniques. (p. 508)

I believe that a measure of the discourses of creativity can be achieved by positioning these discourses in their capitalist context.

Osborne (2003) recognizes this development as the advent of a more intellectualized discourse of creativity, one that has been forming in conjunction with psychologists and managers as the ideologues of creativity. Experts in academic fields, alongside popular and managerial psychologists, all endeavour to identify, measure, and classify creativity, and to offer techniques to lead people to be more creative. Business texts today often suggest that creativity is improvable through technique (e.g. McFadzean and ÓLoughlin, 2000; Randor and Noke, 2002; Santanen, Briggs, and de Vreede, 2004; Weiss, 2001). Similarly, literature on psychology, management, education, and other social sciences are typically fraught with terms about “creative partnerships,” “creative technology,”
“creative thinking,” “creative leadership,” and so forth. Clichés such as these are often taken for granted, unquestioned, and assumed to be “right” (Jeanes, 2006). Runco (2003), in a consideration about the increasing attention to creativity in the coming years, puts forward the question: “with all this creativity, where will we hang all the paintings?” (p. 1). Accordingly, Osborne (2003), in his essay, Against Creativity: A Philistine rant, asserts that the desire to be creative seems today to be compulsory in many domains of life. He argues that we live in the age of a “creativity explosion” which is both ideological, and a matter of our governmentality. It is “a response to the needs of capitalism or more generally to the structural needs of the economy” and is also “a product of human agency and the machinations of experts and–loosely speaking–of workers of the intellect” (p. 508). In fact, the contemporary ideologues of creativity, psychologists and managers, have played an important role in establishing the burgeoning discourse of creativity.

Through a review of the literature on the history of the study of creativity, two general tendencies are recognizable. Building on Williams’s discussion of the etymology of the term “creative,” Negus (1998) identifies two broad approaches to creativity: exclusivist and inclusivist. The exclusivist approach emphasizes certain gifted and/or mystically inspired artists and individuals who have the ability to create. On the contrary, creativity from an inclusive point of view is a term referring to “numerous conventional and routine activities such as ‘creative’ writing or ‘creative’ accounting” (p. 362). Osborne (2003) believes that much contemporary psychology, particularly popular and managerial psychology, defines creativity as the inclusive privilege of all people rather than “the
exclusive prerogative of geniuses or great thinkers” (p. 508). He argues that psychologists with an inclusivist approach use creativity as a resource “in the personal psychology of everyday life” (p. 508). Such psychologists approach creativity not merely as something that happens spontaneously or to the genius, but as something that ordinary people can manage to produce. In this regard, he refers to Mihaly Csikszentmihalyi not as a popular psychologist, but as an academic:

Mihaly Csikszentmihalyi describes the creative person as potentially a sort of ‘everyman’ who has a great deal of energy but who is often quiet and at rest; someone who is smart yet naïve at the same time; someone with a combination of playfulness and discipline; someone who is humble yet also proud (Csikszentmihalyi 1996; cf. Sankowsky, 1987). (cited in Osborne, 2003, p. 508)

Here, we see the turning of creativity into something achievable for everybody, through the practice of certain techniques and ways that can be delivered by experts. That is, the quasi-certification of creativity, where professionals instruct producers in the skills of creativity, are ostensibly removing classical elitism from the traditional understanding of creativity and applying it to the information society.

The Information Society, or the post-industrial society, is a state of radical growth of scientific and technological development with “a shift from manufacturing to services” and the emergence “of new technical elites and the advent of a new principle of stratification” (Bell, 1973/1999, p. 487). Post-industrial society, as Bell (1973/1999) describes in his book, *Coming of Post-Industrial Society*, is generally “a changeover from a goods-producing society to an information or knowledge society” (p. 487) in which technical and scientific rationality advance into the economic, social, and political spheres. He argues that in a knowledge society, industrialists are no longer dominant.
Instead, technocrats, planners, and scientists dominate, and we see technical skill becoming the base of power, and education as the mode of access to power. Hence, the motivational structure of activity in post-industrial society is described in terms of creativity rather than labour, which is the main form of activity in an industrial society. The idea of creativity is seen as an essential component of a post-industrial society. And again, the increasing domination of the issues of creativity in post-industrial society has had a profound impact on the economic, political, and cultural relationships and formations of a new social order. Commodity-based capitalism is being replaced by knowledge-based capitalism, within which elites/intellectuals are the dominant source of wealth for companies and societies. The question here is: why does knowledge become the most significant component of the capitalist system? Capitalism, as Deleuze represents it, is a repressive machine which is “an immanent system that’s constantly overcoming its own limitation” (1990a, ¶ 6). It turns people into private individuals, owners of their body and capitalism’s labours.

Deleuze and Guattari (1977/1983) define history as a process of deterritorialization; for example, primitive tribes are static societies which code and govern everything by rules; these are deterritorialized by a barbaric territorial machine, through a highly codifying production in their social order. In this manner, capitalism radically decodes and deterritorializes social order. It dismantles and scatters codes and releases desire, which is defined by Deleuze and Guattari as something from which all things take form, something that creates all social and historical reality. Such a deterritorialization only appears to lead to an absolute, nomadic freedom, but it does not. Capitalism quickly
reterritorializes the flow of desire. Capitalism, Deleuze and Guattari write, “institutes or restores all sorts of residual and artificial, imaginary, or symbolic territorialities, thereby attempting … to recode, to rechannel persons who have been defined in terms of abstract qualities. Everything returns or recurs: states, nations, families” (1977/1983, p. 34).

According to Best and Kellner (1991), for Deleuze and Guattari deterritorialized lines form on “assemblages of desire” (p. 101). Such a rhizomeatic dynamic interconnections of desire “only become organized as unities, foundations, and hierarchies by dominant sociolinguistic powers, tyrannical signifiers, political despots, the authorities of normalizing institutions, or a host of micropractices of everyday life” (p. 101).

Thrift (2002), whose management approach is unusually sympathetic to critiques of creativity, notes that

after all, many of the bad things that go on in business are now the results of the actions and advice of the institutions of the cultural circuit of capital…When we hear management discourse talk of ‘rightsizing’, remember it means sacking; when we hear management discourse talk of ‘leadership’, remember it means managers getting their way; when we hear management discourse talk of a ‘knowledge economy’, remember it means making money from restricting rights to knowledge, and so on. Business may have to compete, but that competition inevitably means that there will be losers as well as winners—and generally the losers are not the people who inhabit the cultural circuit of capital. (p. 25)

According to Deleuze and Guattari (1977/1983), “capitalism is continually reterritorializing with one hand what it was deterritorializing with the other” (p. 259).

Capitalism decodes ancient forms of social relations, and recodes them, in order to maximize utility and docility to the extent that it deploys the most drastic forms of subordination and control. In a capital system, corporations do so by employing “strategy” to control unexpected social and individual behaviours and to reduce them to
notions of production and consumption. In this system, what matters above all is the production of surplus value; by deterritorializing, capitalism unleashes a flow of means of production, or what Marx called the “continual revolution of the means of production” (cited in Holland, 1985-1986, p. 297). Flows must be conjoined so that surplus can be extracted from them. “In capitalism,” Deleuze (1990a) says, “only one thing is universal, the market.” Considering the market as a generator of both wealth and misery, he asserts, “A concern for human rights shouldn’t lead us to extol the “joys” of liberal capitalism of which they’re an integral part. There’s no democratic state that's not compromised to the very core by its part in generating human misery” (Deleuze, 1990a, ¶ 7).

Capitalism operates not by confining people, Deleuze (1990a) contends, but through continuous control and instant communication. It spreads, as Deleuze and Guattari (1977/1983) explain, by extensively releasing its codes—a flow of means of deterritorialized production—but it cannot do so without expropriating any actually existing creativity. Forces of creativity, which Deleuze and Guattari call desiring-production, are freed so long as capitalism cannot profit from them. The capitalist system turns everything into commodity: land is real estate, people are labour, thoughts and creativity are means by which one can make money. This is why a creativity discourse must be situated in its current post-industrial society context, within which the market importance of creativity is connected with the capitalist system. That is, seeing the current idea of creativity as “a component in a wider assemblage—the creativity industries, consumerist individualism, the cult of the new as ever-unchanging fashion, the forces of intellectual and cultural productivism for its own sake, the performativity of
‘ideas’ and culture” (Osborne, 2003, p. 522), creativity is treated as a precious commodity; something that can be traded. Creativity is turned into a thing that makes money for people. If, in the past, one might make money from a creative product, now, in an information/knowledge society, money is made by having an idea. In an information society, a new economy, the idea of creativity has become a fetishised cultural commodity (Beach, 1999; Beach and Carlson, 2003; Jeanes, 2006; Willis, 1999).

Creative industries such as design, fashion, software production, video games, marketing, advertising, pop music, the performing arts, publishing, the arts market, and much more, as well as expertise in creativity itself, in psychology and management, all support new economies in which the axiomatic mandate is “to be creative.” This is well manifested in Muoio’s words:

There is more room for creativity than ever. Smaller and smaller groups of smart people can do bigger and bigger things … Now there’s sobering news: you’re only as good as your last great idea. The half-life of any innovation is shorter than ever. People, teams, and companies are feeling the heat to turn up new products, services and business models. What’s the reward for one round of successful innovation? Even greater pressure to revisit your success, and to unleash yet another round of innovation. (cited in Thrift, 2000, p. 152)

In such an economy, with the logic of the “entrepreneurialization of business” (Jeanes, 2006, p. 509), managers are required to present their creative faculties more vividly than many other aspects discussed in typically conventional management discourse (Jeanes, 2006); educators need to train students how to be creative, and psychologists have to suggest the more efficient techniques to help people be more creative to survive in the new economy. What we are losing in such a context, as Jeanes (2006) points out, is “the very ability to be truly creative” (p. 130).
Seeing the ubiquitous creativity discourse in its capitalist context leads us to think of creativity not just as a concept seeping through a surfeit of facets of our lives, but, in a Foucauldian sense, as a matter of power, a depiction of a world retailed by people who have the power to do something with it. Michel Foucault (1979) highlights two distinctive strategies of power for the control of individuals over individuals: sovereign power, and disciplinary power. Sovereign power is characterized by absolutism. This power works by means of deduction, extraction, repression, and, ultimately, death. This form of power, Foucault contends, was augmented increasingly by a “productive power” or a “new form of pastoral power” (Foucault, 1982, p. 783). For Foucault, productive power is a system of power that makes the individual a submissive subject. Such a power establishes norms and general imperatives of societal order, and disciplines individual desires for health, wealth, and security, in the interest of the new economic imperatives of capitalist society. Beyond these forms of power, Deleuze (1990a) suggests another kind of power which is on the way to becoming hegemonic: control of communication. Foucault (1979) in *Discipline and Punish* illustrates the pervasive systems of containment and control in a disciplinary society. Detailing how the penal system affects society and instils discipline into it, he renders an expansion of disciplinary techniques to all society. He believes that the discipline of the prison system spills out into all of society. This expansion of disciplinary control creates a whole society of docile bodies submitting to the will of the state. In disciplinary societies, the enclosures—family, school, barracks, factory, hospital, even prison—within which the individual is continuously located, had their own laws and were independent of each other. These enclosures are distinct psychological molds that shape the minds and behaviours of the people within them.
Individuals in these kinds of societies move from one closed site to another. “Disciplinary societies are based on confinement and centralization.” Deleuze (1990b) says “all of these confinements are breaking down, and in their place is control” (Spinuzzi, 2004, ¶ 2). Societies, Deleuze states, are no longer exactly disciplinary. They are moving toward control rather than discipline. Control societies operate not by confining people but “through continuous control and instant communication” (Deleuze, 1990a, ¶ 11). Unlike disciplinary societies, societies of control have borders separating enclosures which are blurred. As an example, Deleuze writes that “education can be envisaged as becoming a less and less closed site differentiated from the workspace as another closed site, but both disappearing and giving way to a frightful continual training, to continuous monitoring of worker-school-kids or bureaucrat-students” (1990a, ¶ 11). One of the manifestations of this erasure or blurring of borders is evident in the cross-disciplinary, multi-market obligation to “be creative.”

Creativity has become “a moral imperative” in societies understood as being in a post-industrial state of development, or as Thrift (2002) points out, where creativity is increasingly understood to have value in itself:

What we now see is much greater attention being paid to fostering the powers of creativity that will lead to innovation, most particularly through models that eschew the black-boxed model of information processing in favour of what von Krogh and Roos (1995, 1998) call “creative” knowledge. Thus creativity becomes a value in itself. (p. 676)

Osborne (2003) contends that we need to escape “the moralizing injunction to be creative”, the “compulsory individualism, the compulsory ‘innovation,’... compulsory productiveness, the compulsory valorization of the putatively new” (p. 507). Bourdieu, in
a discussion about cultural production, addresses the charismatic ideology of “creation” which “directs the gaze towards the apparent producer – painter, composer, writer – and prevents us from asking who has created this ‘creator’ and the magic power of transubstantiation with which the ‘creator’ is endowed” (Bourdieu, 1996, p. 167). For Osborne, escaping from moralizations and compulsories is possible through what he calls philistinism. This is a kind of ethics, or countervailing power against the threat of the doctrine of creativity. Philistinism, according to Osborne, is an ethos; not a morality, but a counter-power. Such a philistinism counters any attempt to reduce the notion of creativity to a doctrine of morality. It “can help liberate us from the potentially moronic consequences of the doctrine of creativity” (p. 507). According to Hesmondhalgh, Bourdieu provides another theory of cultural production, which is based on “[Bourdieu’s] own characteristic theoretical vocabulary of habitus, field and capital” (Hesmondhalgh, 2006, p. 212). For Bourdieu (1994), “the field of power” is a composition of economic and political fields. Thompson (1991) defines field as “a structured space of positions in which the positions and their interrelations are determined by the distribution of different kinds of resources or capital” (p. 14). For Deleuze (1995), this kind of nomadic power, which makes people “increasingly subjected to free-floating, nomadic forms of control” (p. 178), must be resisted. So, from a Deleuzian point of view, the moral imperative of “being creative,” like the other imperatives reterritorialized by capitalism, can only be eluded through a creative act.

Osborne (2003) locates all approaches to creativity in the creativity explosion, even those that try to steer modern notions of creativity toward alternative directions using the tenets
of post-modernism or those that seek to re-link creativity with everyday life. Although
Osborne includes even Deleuze’s account of creativity in the explosion, I believe that
Deleuze’s philosophy stands against and indirectly critiques the creativity explosion;
further, Deleuze and Guattari (1977/1983, 1987) help to resist its logic. Such a resistance
is possible because Deleuze’s philosophy, as Osborne points out, is a “ressentiment-free
philosophy (nothing could be less creative than ressentiment)” (Osborne, 2003, p. 511).
Deleuze, Creativity, and Chance

Creativity study as a practice has developed a language and has established itself as a territory over the last fifty years, that is, as a field. Efforts have been made in this field to define creativity, to identify creative individuals, and to delineate the creative process. From a Deleuzian (1977) point of view, this field, like other fields, appears as a site of territorializing and, of course, re-territorializing. A field is about forming connections and establishing a language. Theories are made in a field not to convey messages, but rather to give orders and to organize bodies. A field concerns facts and observables and then prescribes them with a sense of prefigured order, namely, definitions, implications and instructions. Deleuze and Guattari (1987) assert that “language is made not to be believed but to be obeyed, and to compel obedience” (p. 76). They hold that “language is not life; it gives life orders. Life does not speak; it listens and waits” (p. 76). With such statements, Deleuze and Guattari open up a plane that “a life” inhabits: a plane of immanence, a state of creative becoming.

Deleuze and Guattari’s theories are the framework to discuss how an artist or a creator can be a radical, revolutionary, nomadic person who resists all forms of oppressive power, including the moral imperative of “creativity” discussed by Osborne (2003), and this imperative’s underlying capitalist and commodifying demands. Here, I do not intend to present a comprehensive monograph of Deleuze’s philosophy; rather it is my apprehension of Deleuze’s account of creativity. So, in the following, first, I portray what a creative act and a creator might be from a Deleuzian point of view. Then, using
Deleuze’s philosophy, I discuss the terms that inform the account which comprises the last part of this thesis (Making Connection: Teaching Contingencies).

Although Deleuze had already started to deal with the metaphysical question of how creativity is possible in *Difference and Repetition* (1968/1994) and *Logic of Sense* (1969/2001a), it was his involvement with Guattari that led him to propose a practical approach to creativity. In fact, it is a Deleuzo-Guattarian notions of events, becoming, the line-of-flight, delirium, the body without organs that opens up a way to think of “creativity in terms of a differentiating, impersonal, inventive power” (Osborne, 2003, p. 511).

In *Difference and Repetition*, Deleuze (1968/1994) argues that creation occurs in a process of differentiation. According to him, creation is possible because the virtual is different from the actual and the virtual can have multiple actualities. Deleuze defines the virtual as “real without being actual, ideal without being abstract” (Deleuze, 1966/1988, p. 96). He distinguishes between the “possible” and the “virtual”. For Deleuze, the “virtual” is in opposition with the actual, not the “real.” The “possible,” on the other hand, is that which is opposed to the real. The virtual has reality but it is not “actual,” while the possible has no reality. Hence, according to Deleuze, actualization is a completely different process from realization. The “process of realization is subject to two essential rules, one of resemblance and another of limitation” (Deleuze, 1966/1988, p. 97), while the process of actualization proceeds by creating difference. When the

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6 It should be noted here that grappling with Deleuze’s disconcerting use of language and his uncanny defamiliarizing of terms forces the reader to double and triple back on his text; this is not an accidental effect but a deliberate strategy on Deleuze’s part to urge the reader into new and complex positions.
possible is realized, it simply has existence. In this case, the notion of the real has no
difference from that of the possible. “Real ... resemble[s] the possible” (p. 212), and is “in
the image of the possible that it realizes” (p. 97). That means “there is no difference
between the possible and the real” (p. 97). When the possible is not realized, the rule of
realization involves a limitation which repels or blocks the realization of the possible.
Deleuze writes, “Realization involves a limitation by which some possibilities are
supposed to be repulsed or thwarted, while others ‘pass’ into the real” (1966/1988, p. 97).
Unlike the possible, the virtual does not need to be realized. It has to be actualized.
Deleuze argues that the process of actualization has nothing to do with the rules of
resemblance or limitation. The rules of actualization are differentiation and creation. The
actual is not like the virtual, but different. The real is “one of the many possibles, all of
which resemble the real, that has been brought into existence” (Colwell, 1997, ¶ 9).
Conversely, the actual is something new, created in an active process of differentiation by
the virtual. Deleuze writes,

While the real is in the image and likeness of the possible that it realizes, the
actual, on the other hand does not resemble the virtuality that it embodies. It is
difference that is primary in the process of actualization—the difference between
the virtual from which we begin and the actuals at which we arrive, and also the
difference between the complementary lines according to which actualization
takes place. (1966/1988, p. 97)

It is, indeed, the process of differentiation that allows creation. The virtual becomes
actualized “by being differentiated and is forced to differentiate itself, to create its lines
of differentiation in order to be actualized” (p. 97). Therefore, the virtual is a principle of
creation, and “actualization is creation” (p. 98). This means that the creative act exists
through a modality of the actual and the virtual. The creative act as an event is a
becoming which repeats but repeats differentially. “The actual is a differential repetition of the virtual” (Colwell, 1997, ¶ 11).

The philosophy proposed by Deleuze in *Difference and Repetition* (1968/1994) demonstrates creation and the context in which creation takes place as both paradoxical and problematic. He asserts that “the ‘problematic’ is a state of the world, a dimension of the system, and even its horizon or its home: it designates precisely the objectivity of Ideas, the reality of the virtual” (p. 280). The problematic state of the world, creation and its context does not lead us to passivity but instead helps us to move forward through a creative affirmation of complex features of the world, through a process of differentiation, a creative becoming. In this sense, the creative act as an event turns into continuous problematizing. In *Bergsonism*, Deleuze points out that “stating the problem is not simply uncovering, it is inventing” (1966/1988, p. 15). In this sense, stating the problem and solving it are “very close to being equivalent” (1966/1988, p. 16). Deleuze understands the pure event along the lines of the relation between a problem and its solution. For Deleuze, a problem is “a virtual structure whose nature is never entirely captured in any given specification or determination of its conditions” (Patton, 1997, p. 7). Hence, as Williams asserts, problematizing is “the underlying real processes of differentiation” (2000, p. 203) and of course actualization:

We call the determination of the virtual content of an Idea differentiation; we call the actualization of that virtuality into species and distinguished parts differentiation. It is always in relation to a differentiated problem or to the differentiated conditions of a problem that a differentiation of species and parts is carried out, as though it corresponded to the cases of solution of the problem. (Deleuze 1968/1994, p. 207)
Therefore, Deleuze’s notion of creativity stands against any kind of simplification and
generalization; against prescribed instructions or solutions which mark facets of the
creativity explosion. Generalization works based on rules of resemblance and also
limitation, and its process is realization not actualization. Deleuze’s theory of creativity is
a counter-power, a force brought to bear against capitalism and its creativity explosion.

As indicated before, the modernist concept of novelty refers to what is original,
unfamiliar, new, and different. Modernist faith in the idea of progress caused the
proliferation of technical innovations which became routine in the early twentieth
century. This belief in progress entailed the idea of newness for the sake of newness.
Challenging this idea, post-modernism holds that the novelty produced by innovation is
more of an illusion than anything. Post-modernism indicates that there is nothing new in
the world. According to Menezes (2003), the Heideggerian thesis of the “non-historicity
of the technical world” (¶ 6), excess technical innovation. He writes,

The regular consumption of new products has the effect of emptying out the
pathos of newness from daily life. And when this pathos is discharged over the
aesthetic field, where it is impossible to verify the real contents of the newness,
the crisis of the notion of progress and evolution appears. (Menezes, 2003, ¶ 6).

Art critic, Brian Wallis, describes this crisis:

Today no action, no feeling, no thought we own has not been performed by a
thousand movies, commercials, television sitcoms, or magazine articles. Our
society, supersaturated with information and images, not only has no need for
individuality, it no longer owns such a concept. (1984, pp: xvii-xviii)

For Deleuze, “the new is not the ‘merely different,’ but the differentiation. It is what
makes the difference characterized as diversity possible. In other words, it is not a
phenomenon, but rather the noumenon [the thing-in-itself] closest to the phenomenon”
Understanding difference as the product of primary differentiations means an individual is not different from another individual but is rather a degree of intensity of variable immanent components. Then, in this sense, difference is not between individuals, but a condition of the complex constant change. For Deleuze, the concept of the new as becoming is far from “fashionable.” It is creativity that emerges from the complex becoming of social/cultural/political practices. Thus, Deleuzian creativity is a dynamic state of forming new connections and problematization, and of transforming into completely new becomings.

Deleuze (2001c) begins *What is the Creative Act?* by asking, “What is it to have an idea in cinema?” Answering this question, he notes that ideas as potentials are engaged in “one or another mode of expression and that are inseparable from that mode of expression” (p. 99). Creation, as Deleuze puts forward, is all about mediators. Without mediators nothing happens. Mediators are either people, or things, plants or animals. They can be “real or imaginary, animate or inanimate” (Deleuze, 1995, p. 125). People need their own mediators to express themselves. There is a mutual relationship between a person and a mediator. They are one another’s mediators (Deleuze, 1995). In *What is Philosophy?*, Deleuze and Guattari (1994) discusses creativity as a characteristic potential in distinct domains of the arts, or philosophy, or the sciences, each in a certain way. In fact, creation, for Deleuze, means invention of something in a specific area: a philosopher creates concepts; a filmmaker invents blocks of “movement-time;” a painter creates blocks of lines and color; a scientists invents functions. A creative act (having an idea) for Deleuze, as Osborne (2003) points out, is not easy to do. It is not something that
takes place recurrently; rather it is “a rare event, it occurs infrequently. To have an idea is a sort of celebration; it does not happen every day. Put another way, to have an idea is not a general thing. One does not have ‘an idea in general’” (2001c, p. 99). Deleuze’s position is against generalization of the notion of creativity. Instead, he restricts it to certain intellectual activities.

Deleuze asks “What is it to have an idea ‘in’ something?” Having an idea in something is to create. We speak in the name of this creation. Such speech is not only communication which conveys information, but a resistance. He writes,

> To have an idea is not on the order of communication. Everything that we have been speaking about is irreducible to all communication. What does that mean? It means, in one sense, one could say that communication is transmission and propagation of information. What is information? That is not a complex question. Everyone knows that information is an ensemble of order words. When one informs you, one tells you that you are censored for having believed them. In other words, to inform is to circulate ordered words. ... this is information that is communication. And at the same time in these ordered words and their transmission there is in fact no communication. There is no information; this is exactly the system of control.” (2001c, pp. 104-105)

Information is defined as a set of order-words, and of words coding some vested interest, and performing an act of repression. It is a mechanism by means of which repressive power is exercised in societies of control. “When you are informed, you are told what you are supposed to believe” (Deleuze, 1998, p. 17). In societies of control, control is achieved by the bombardment of information. However, Deleuze believes such control can be resisted. For Deleuze, resistance is possible only through a creative act: “whenever one creates, one resists. Artists, filmmakers, musicians, mathematicians, philosophers, all resist” (Deleuze, 1988, ¶ 1). He states that
they resist first against being forced in certain tempting directions and against the demands of popular opinion, that is, against the whole domain of imbecilic interrogation. They really have the strength to demand their own way, their own rhythm, and they can’t be forced to set loose just anything in any conditions whatsoever, just as one usually doesn’t hassle an artist. (Deleuze, 1988, ¶ 3)

Therefore, “to create,” is “to resist.” It means “it’s effective, positive; the world would not be what it is if not for art, people could not hold on any more” (Deleuze, 1988, ¶ 9). He asks, “What can art do with all of this?” and he replies that “art is that which resists. ... All acts of resistance are not works of art. In a certain manner, all works of art are not acts of resistance, but in another way they are” (2001c, p. 106). According to Deleuze, works of art are not abstract resistance, but “active struggle against the profane and the sacred” (2001c, p. 107). Authentic creativity is not easy to achieve. Creation is not something that everybody can do. A creator’s concern is not searching information, theories and conventions for gaining access to creativity. “A creator is not a being that works for pleasure;” a creator does not communicate to transfer information; “a creator does nothing but that which he has need to do” (2001c, p. 102). In fact, Deleuze distinguishes between “imitation” and “creation.” In Mediators (1992), Deleuze writes, “imitators imitate one another, and that’s how they proliferate and give impression that they’re improving on their model, because they know how it’s done, they know the answers” (p. 287). Imitation in a Deleuzian sense, as Osborne indicates, “is not just doing what other people do. It is also about making creativity seem like an easy thing to achieve” (Osborne, 2003, pp. 511-512).

In the Deleuzian model of creativity, authentic creativity is as destructive as productive. He writes,
A creator who isn’t seized by the throat by a set of impossibilities is no creator. A creator is someone who creates his own impossibilities, and thereby creates possibilities. It’s by banging your head against the wall that you find an answer. (1992, p. 292).

The creator, as Deleuze proposes, is someone who cannot sit on the line. In the act of creation the creator has no option but to abandon the line, become, as Osborne (2003) suggests, a traitor to the status quo. In Deleuzo-Guattarian terms, artists and creators invent lines of their own rather than choosing to remain safely in the confines of any recognized aesthetic territory or any pre-existing doctrine or ethos of creative powers. The artistic act as a process of actualization is a great destruction: every artist seeks to sustain a state of permanent creation in which what matters is “never what is known but rather a great destruction of what is already known in favour of the creation of the unknown” (Deleuze, 2004, p. 136).

For Deleuze, the arts and specifically literature are about “life taken to the force of an impersonal power.” They are neither “a means of personal ‘expression’ [nor] an apparatus for capturing and mobilizing certain kinds of precepts and especially affects, even a kind of ‘machine’” (Osborne, 2003, p. 514). For him, an artist is “the one who liberates a powerful life, a life that’s more than personal life, not his or her life” (Deleuze, 1988, ¶ 5). In this sense, art is not a kind of sublimation, but, as Deleuze insists, is “ripping life forth, life’s liberation, and that’s not at all something abstract.” It is a way for “freeing life from prisons that humans have created and that’s what resistance is” (Deleuze, 1988, ¶ 6). That’s obviously what artists do: “there is no art that is not also a liberation of life forces, there is no art of death” (Deleuze, cited in Stivale, 2002, p. 407).
Deleuze (1995/2001b), in his essay, *Pure Immanence: Essays on A Life*, considers immanence the source of all creativity. He asks, “What is immanence?” The answer is “A life” (p. 28). Deleuze defines immanence not as that which is immanent *in* something or being immanent *to* something but what is absolute in *itself*: “It is only when immanence is no longer immanence to anything other than itself that we can speak of a plane of immanence” (p. 27). Immanence is “A LIFE, and nothing else” (p. 27). He elaborates the concept of immanence in three elements or stages: immanence as

a) “a this-worldliness opposed to the transcendence;”

b) actualities of this world that inhabit it and should be distinguished from its virtualities (pure immanence);

c) a creative core and a productive motor of all that exists. (Reading Notes on Deleuze and Guattari, n.d., n. pag.)

Immanence “is prior in terms of productivity,” (Reading Notes on Deleuze and Guattari, n.d., n. pag.) while “pure immanence,” or what Deleuze calls “A life,” contains “only virtuals. It is made up of virtualities, events, singularities” (Deleuze, 1995/2001b, p. 31). “A life” is a paradoxical experience in which individuality fades and becomes “a singular essence,” (Deleuze, 1995/2001b, p. 27) an empty time of singularities existing in between what we take to be the defining moments of an individual’s life:

This indefinite life does not itself have moments, close as they may be one to another, but only between-times, between-moments; it doesn’t just come about or come after but offers the immensity of an empty time where one sees the event yet to come and already happened, in the absolute of an immediate consciousness. (Deleuze, 1995/2001b, p. 29)
A life unfolds according to a different logic than the life of an individual. It is always “in the making,” and flashes into conscious existence only occasionally. Therefore, creation in Deleuze’s philosophy is tightly bound to the notions of events and becoming.

**The Creative Act as a Becoming Event**

What is an event? What are the conditions that make an event possible? In Deleuze’s work, the concept of an “event” has multiple meanings. Here, I focus solely on those that will inform my discussion of the creative act as an event and of the conditions in which creation occurs.

*Events as incorporeal*

The Deleuzian concept of “event” has several components. The most important one is the Stoics’ conception of events as incorporeal. In *The Logic of Sense* (1969/2001a), Deleuze presents the Stoics as the first to create a philosophical notion of the event. The Stoics distinguish between two realms of being: a material realm, and an incorporeal realm. The first includes bodies and states of affairs and the latter is a realm of events. States of affairs are the arrangements of bodies or things at a particular point in time. They are actions and passions and the mixture of bodies determine them. All states of affairs become absorbed into and are developed from a unity formed by such a mixture of all bodies. The only time of bodies and states of affairs is the present. However, an event, according to the Stoics, is “…an incorporeal, complex and irreducible entity, at the surface of things, a pure event which inheres or subsists in the proposition” (1969/2001a, p. 19).
Deleuze, in *The Logic of Sense*, concentrates on events as virtual structure. He writes “Events are not bodies” (p. 4), they belong to the virtual field, since they are “ideal by nature” (1969/2001a, p. 53). Events are incorporeal transformations which are expressed by means of language in statements, and are attributed to bodies and physical states of affairs (Deleuze and Guattari, 1987). “Being cut” when somebody’s flesh is cut with a knife is an incorporeal attribute of the flesh. It is neither the flesh nor the knife; it is an expression of what happened. This is an event which might be expressed in a variety of ways (Patton, 1997). Hence, “pure events are both the expressed of statements and the ‘sense’ of what happens” (Patton, 1997, ¶ 3). Deleuze considers the event as a sense-event that arises from a particular state of affairs. This sense is not located in the things themselves or in the knowing being. It is on the surface between things and words (1969/2001a, p. 22).

Therefore, in *The Logic of Sense* (which might equally have been entitled *Logic of the Event*), Deleuze argues for the identity of sense or what he calls “pure events;” that is, incorporeal entities which subsist over and above their spatiotemporal manifestations, and which are expressed in language. He relies upon the Stoic concept of the “sayable” (*lekton*) in order to distinguish the sense or event expressed in a proposition from the mixtures of bodies to which these are attributed. The account of concepts in *What is Philosophy?* also assimilates event and sense: “concepts are described as identical with events understood as the ‘pure sense’ that runs through their components” (Patton, 1996, p. 14). As Deleuze demonstrated in *Logic of Sense*, events are always double-sided, on each side of the constantly moving fissure separating states of affairs and propositions.
Events as becoming

The Stoics’ concept of events establishes: (a) events as incorporeals; (b) events as becoming. Hence, in Deleuze’s account, all events (both “being red” and “becoming red”) are incorporeal transformations. The state of being something (being cut or being red) is an attribute of bodies, whereas the event of becoming something (becoming cut or becoming red) is a change state. Deleuze divides time into: (a) chronos: an historical time in which events happen; and (b) aion: a time of the event. His division within time entails his distinction between the event proper (the pure event), and its actualization in a particular context. From the perspective of ordinary time (chronos), the event is “eternally that which has just happened or that which is about to happen” (1969/2001a, p. 8). From the perspective of events themselves, the time of the event (aion) is a long period. Their inner complexity and temporal rhythm are indiscernible from the point of view of ordinary time to the extent that “it appears that nothing is happening, and then suddenly everything changes and nothing is the same as before” (Patton, 1997, ¶ 16). Deleuze addresses Péguy’s notion of the “aternal” as the best expression of this dimension of events: “There are critical points of the event just as there are critical points of temperature: points of fusion, freezing and boiling points, points of coagulation and crystallization” (1968/1994, p. 189). In sum, Deleuze’s conception of the incorporeal, along with this temporal dimension of events, leads to another component of his concept, namely his distinction between the pure event which is “immaterial, incorporeal, unlivable: pure reserve” (Deleuze and Guattari, 1994, p. 156) and its incarnation in bodies and states of affairs.
For Deleuze an event is infinitely divisible. The time of an event is never present. According to him, an event displays a “double structure”—its specific physical manifestation and an existence beyond its physical manifestation. It is actualized in the present moment, the moment of its embodiment “in the state of affairs, an individual, or a person” (Deleuze, 1993b, p. 81). It also has a lasting significance that is outside of the present moment. An event, Deleuze states, has a past and a future, an existence beyond the present moment to the extent that makes it “free of the limitations of a state of affairs” (1993b, p. 81). Hence, time, for Deleuze, is not the chain of events constituting time by the passing of present moments. He places events into time (as a line). Processes consist of variously interlinked events. Deleuze argues that events are different from their “spatio-temporal realization[s] in state of affairs” (1969/2001a, p. 22). Events are “not what occurs” but are “rather inside what occurs” (Deleuze, 1969/2001a, p. 149). As Deleuze writes,

> With every event, there is indeed the present moment of its actualization, the moment in which the event is embodied in a state of affairs, an individual, or a person, the moment we designate by saying, “here, the moment has come. The future and the past of the event are evaluated only with respect to this definitive present, and from the point of view of that which embodies it. But on the other hand, there is the future and the past of the event considered in itself, sidestepping each present, being free of the limitations of a state of affairs, impersonal and preindividual, neutral, neither general nor particular. (1993b, p. 81)

Such a description presents the event as co-existing in a superimposed layer, “in a time of becoming that cuts across historical time” (Patton, 1997, ¶ 17). Deleuze understands the event in terms of becoming. The event is neither a static structure nor something changing over the course of time. “It is that which repeats but repeats differentially” (Colwell, 1997, ¶ 7).
Events as singularities

The third concept of events for Deleuze, in The Logic of Sense, is events as singularities arranged in series. He argues that we never have a single series, but the serial form which is “essentially multi serial” (1969/2001a, p. 37). In this sense, events not only have their own internal structures but are complex, that is, they are always composed of other events. Such complexity of events presents them as chaotic:

Infinite series of wholes and parts … appear[s] chaotic to us (as aleatory developments) only because we are incapable of following them, or because of the insufficiency of our own screens. (Deleuze, 1988/1993a, p. 77)

The “great screen” composes these infinite series of wholes and parts. Therefore, as Whitehead and Leibniz discuss, an event is “a vibration with an infinity of harmonics or submultiples;” (Deleuze, 1988/1993a, p. 77) a whole and its parts as an infinite series. An element has parts and is a part, and also has intrinsic individual features. Deleuze asserts that the individual is a concrescence of elements. An element is a given, the datum of another element thatprehends it. That is a prehension, not a connection or a conjunction:

Prehension is individual unity. Everythingprehends its antecedents and its concomitants, and, by degrees, prehends a world. The eye is prehension of light. Living beings prehend water, soil, carbon and salts. (1988/1993a, p. 78)

Creativity as an event

Deleuze’s notion of events as incorporeal becoming singularities leads us to think of creativity in terms of a differentiating, inventive power. Deleuze defines an event as “something and its duration for a period of time.” For him, everything can be an event. “The Great Pyramid,” he says, “is an event” (1988/1993a, p. 76). “What are the conditions that make an event possible?,” he asks. Events happen “in a chaotic
multiplicity but only under the condition that a sort of screen intervenes” (1988/1993a, p. 76). Such a chaotic multiplicity cannot be separated from the screen. This is the screen “that makes something-something rather than nothing-emerge from it [chaos]” (p. 76). It seems to be a becoming of many “a One.” The One is not a pre-given unity. It is “the indefinite article that designates a certain singularity” (1988/1993a, p. 76). The screen is placed between multiplicity and the One. Something is made from chaos and multiplicity by the screen. Citing Leibniz, Deleuze contends that

> chaos would be the sum of all possibilities, that is, all individual essences insofar as each tends to existence on its own accounts; but the screen only allows compossible—and only the best combination of compossibles—to be sifted through. (1988/1993a, p. 77)

A creative act is an event which is incorporeal becoming singularity.

The concept of “incorporeal transformation” employed by Deleuze and Guattari in *A Thousand Plateaus* describes the change in status of a body and its states of affairs. Discussing the effects of what takes place before and after the judge pronounces sentence (the murder, the trial) on Bodies, they contend that “the transformation of the accused into a convict is a pure instantaneous act or incorporeal attribute that is the expressed of the judge’s sentence” (1987, p. 80-81). What Deleuze and Guattari mean in their description of incorporeal attributes expressed in linguistic utterance is to show that the usage of language is not merely the communication of information, but is action. It is not simply a report of what happened or is happening but helps to actualize particular events in its context. In this sense, the creative act as an incorporeal event is a system of signs, not communication of information. Referring to Deleuze’s philosophy, Bogue (2004) defines signs:
Signs for Deleuze are not transparent media for the communication of information. Rather, they are hieroglyphs, enigmas that point beyond themselves to something hidden. ... Every sign has something enfolded within it, something “other,” that must be unfolded if it is to be understood. The interpretation of signs, then, is a matter of “explicating,” or unfolding (from Latin plicare: to fold), that which is “implicated,” or enfolded. (p. 328)

“The signs of art,” he continues, “are signs of essences, manifestations of originary worlds that unfold within the material form of a given artwork but transcend that matter and reveal the truth of the cosmos as a dynamic process of self-differentiation” (p. 328).

Since a creative act exists inside the signs, it cannot be autonomous. A creative act, as a becoming event, is conditioned by the meaning constituted by what is expressed in linguistic forms by societies, media, prevalent discourses, and the fears and hopes these meanings simultaneously produce and resist against these constitutions by the forces of life.

**Deleuze and Chance**

Creative act as a becoming takes place in a chaos, in a chaotic multiplicity. It is linked with uncertainty and chance. Deleuze’s theory of becoming—a theory of the actual as the transformation of the virtual—is grounded ontologically in multiplicity and the notion of duration. Inspired by Bergson’s challenges to the notion of the possible/real distinction in favour of that of a virtual/actual distinction, Deleuze views becoming as a constant creative process of change or differentiation. In fact, becoming, for Deleuze, is the elaboration of a “difference” emerging in duration which entails an open future:

[Duration] involves the fracturing and opening up of the past and the present to what is virtual in them, to what in them differs from the actual, to what in them can bring forth the new. (Grosz, n.d., p. 1)
Difference, in Deleuze’s account, does not refer to the differences between individuals and their limits or oppositions. It is not only a negation:

This is what the philosophy of difference refuses: *omnis determinatio negatio*. … We refuse the general alternative proposed by infinite representation: the indeterminate, the indifferent, the undifferenciated or a difference already determined as negation, implying and enveloping the negative (by the same token, we also refuse the particular alternative: negative of limitation or negative of opposition). (Deleuze, 1968/1994, p. 52)

Instead, difference is “the object of affirmation or affirmation itself” (Deleuze, 1968/1994, p. 52). That is, it is not opposition between individuals, but rather a condition in which they exist; it is not logical, but ontological:

Negation is difference, but difference seen from its underside, seen from below. Seen the right way up, from top to bottom, difference is affirmation. This proposition, however, means many things: that difference is an object of affirmation; that affirmation itself is multiple; that it is creation but also that it must be created, as affirming difference, as being difference in itself. (Deleuze, 1968/1994, p. 55)

Hence, difference, in its Deleuzian sense, manifests the failure of the classical system of representation and philosophies of transcendence. Deleuze argues that representation has only a single centre from which everything is mediated but not mobilised. “Movement,” he asserts, “implies a plurality of centres, … a coexistence of moments which essentially distort representation” (1968/1994, p. 56).

Deleuze emphasizes that the virtual should not be confused with the possible. In *Bergsonism*, Deleuze asks, “Why does Bergson challenge the notion of the possible in favour of that virtual?” Then he answers,

It is precisely because … the possible is a false notion, the source of false problems. The real is supposed to resemble it. That is to say, we give ourselves a real that will pass into existence according to an order of successive limitations. Everything is already *completely given*: all of the real in the image, in the pseudo-
actuality of the possible. … it is the possible that resembles the real, because it has been abstracted from the real once made, arbitrarily extracted from the real like a sterile double. Hence, we no longer understand anything either of the mechanism of difference or of the mechanism of creation. (Deleuze, 1966/1988, p. 98)

According to Deleuze, becoming is not a realization of possibilities but an actualization of the virtual. It is not based on resemblance and limitation but on creation of differences.

Deleuze (1962/1983), in *Nietzsche and Philosophy*, explaining Nietzsche’s metaphor of the dicethrow writes, “The game has two moments which are those of the dicethrow—the dice that is thrown and the dice that falls back” (p. 25) in a certain combination. The dicethrow takes place on two distinct tables: the earth and the sky. “But, these two tables are not two worlds. They are the two hours of a single world, the two moments of a single world, midnight and midday, the hour when the dice are thrown, the hour when the dice fall back” (p. 25). According to Deleuze, the principle of the dicethrow is the affirmation of both “becoming” and the “being of becoming;” the affirmation of chance as well as necessity:

The dice which is thrown once are the affirmation of chance, the combination which they form on falling is the affirmation of necessity. Necessity is affirmed of chance in exactly the sense that being is affirmed of becoming and unity is affirmed of multiplicity. (1962/1983, p. 26)

The notion of multiplicity for Deleuze does not mean “multiple” in its traditional sense—division between one and multiple. Rather, it deposes the classical one/multiple dichotomy. For Deleuze, multiplicity is both what is objective (has actuality) and has no virtuality, and simultaneously what “is the virtual insofar as it is actualized, in the course of being actualized, it is inseparable from the movement of its actualization” (Deleuze, 1966/1988, p. 42-3).
Dicethrow is reconciliation between chaos and order, a moment of chance (the throw of the dice) and a moment of necessity (the return of the dice). It is an event in which necessity is chosen on the basis of chance. The moment of throwing the dice is the moment of refusing control and order by affirming the chance of upcoming encounters. The throw of the dice is the moment of pure multiplicity while the moment of the return of the dice is a single moment in which all the fragments of chance unite. Deleuze’s two concepts, multiplicity and univocity, are better understood through his emphasis on the philosophy of immanence. In the philosophy of immanence, nothing entails a condition that transcends the conditioned. In fact, the philosophy of immanence is about “the condition as being in the conditioned” (Bell, n.d., p. 2-3). The plane of immanence or consistency is where becoming and multiplicities intersect. It is the intersection of all concrete forms. ... It is the abstract Figure, or rather since it has no form itself, the abstract Machine of which each concrete assemblage is a multiplicity, a becoming, a segment, a vibration” (Deleuze and Guattari, 1987, pp. 251, 252).

In *What Is Philosophy*, this plane is defined as “a section of chaos that acts like a sieve” (Deleuze and Guattari, 1994, p. 42). Chaos and multiplicities are sifted through by the plane of immanence:

The screen is like the infinitely refined machine that is the basis of Nature. From a psychic point of view, chaos would be a universal giddiness, the sum of all possible perceptions being infinitesimal or infinitely minute; but the screen would extract differentials that could be integrated in ordered perceptions. (Deleuze, 1988/1993a, p. 77)

Dicethrow is the affirmation of the outcome of becoming and the result of chance. In a Badiouian sense, the distance between the throw and the return of the dice constitutes the passage from the pure multiple to the localisable “being-there.” For Deleuze, throwing of the dice is the immanent movement of the virtual, is the openness to chance, a catapult.
into chaos, while the return of the dice is a return from chaos in a series of structured actualizations. Deleuze views these two moments, decadence into chaos and return to order, as a continuous moment, an immanent movement of the virtual to the actual. In fact, “every distinct actualization of the virtual in some sense refers to the same virtual and its internal self-variation” (Laerke, 1999, p. 88).

In response to the question “What are the conditions that make an event possible?,” Deleuze, in the *Fold, Leibniz and the Baroque*, writes,

> Events are produced in a chaos, in a chaotic multiplicity, but only under the condition that a sort of screen intervenes.

> Chaos does not exist; it is an abstraction because it is inseparable from a screen that makes something—something rather than nothing—emerge from it. Chaos would be a pure *Many*, a purely disjunctive diversity, while the something is a *One*, not a pregiven unity, but instead the indefinite article that designates a certain singularity. (1988/1993a, p. 76)

There is no reliable way to predict the outcome of chance. The necessity resulting from the chance in a dicethrow is not predetermined. On the contrary, it is always in a state of becoming. The necessity is not knowing precisely what the result will be, but rather affirming that it is always becoming. Chance in the dicethrow is pure multiplicity, and then “there is only a single combination of chance as such, a single way of combining all the parts of chance, a way which is like the unity of multiplicity, that is to say number or necessity” (Deleuze, 1962/1983, p. 26). Hence, in Deleuze’s philosophy “multiplicity” and “univocity” are two interwoven concepts. A univocal Being can be expressed in variations in intensity. “In other words, for Deleuze, a multiplicity is what he would call a nomadic distribution of a fundamentally non-hierarchical being (univocity), a distribution that cannot be reduced to identifiable unities” (Bell, n.d., p. 5). Deleuze asserts that
multiplicity appears chaotic to us “only because we are incapable of following [multiplicities] or because of the insufficiency of our own screens” (Deleuze, 1988/1993a, p. 77).

The virtual becomes actualized “by being differentiated and is forced to differentiate itself, to create its lines of differentiation in order to be actualized” (Deleuze, 1966/1988, p. 97). The virtual becomes the actualized through a process of differentiation in a chaotic multiplicity. But, Deleuze believes that such a chaotic multiplicity exists in a screen and is inseparable from it. The screen is placed between multiplicity and the One. It seems to be a becoming of many, the One. The One is not a pregiven unity. It is “the indefinite article that designates a certain singularity” (Deleuze, 1988/1993a, p. 76).

In sum, as Badiou (2000) suggests, Deleuze’s philosophy is a constant reaffirmation of tak[ing] things by the middle; do not first try to find one extremity and then move towards the other. No. The middle must be grasped so that the sense of the trajectory of thought is not fixed by a principle of order or of succession; but so that it is instead fixed by the moving metamorphosis that actualises one of the extremities into its most detached counterpart. This procedure could bear the name of the anti-Cartesian method. … Where Descartes negatively and reflexively fixes the first certainty within a chain of reasons, Deleuze affirmatively and impersonally grasps a line of flight by the middle. Where Descartes leaps to the external guarantee of his references by means of the big Other, Deleuze intuits, at infinite speed, the continuity of metamorphosis, the micro-economic exchange of the small same and its other, or the macro-economic exchange of the small other and the big Same. (p. 191)
Contingency

In fact, however, this idea of the “unity of opposites” has been known, under the name of “contingence,” for a very long time. But what we had found still constituted a “discovery.” Our scientific and technological age had forgotten that reason, with all its consequences, was inseparable from unreason with all its consequences. The myth that everything in the world can be rationally explained had been gaining ground since the time of Descartes. An inversion was necessary to restore the balance.

The realization that reason and anti-reason, sense and nonsense, design and chance, consciousness and unconsciousness, belong together as necessary parts of a whole—this was the central message of Dada. (Richter, 1964/1978, p. 64)

William Burroughs, in Mind War/The Adding Machine, clearly illustrates a society that Foucault identifies as our “immediate future” and Deleuze calls “society of control.”

Burroughs writes,

At the top [of the elitist state] would be a theocracy trained in psychic control techniques implemented by computerized electronic devices that would render opposition psychologically impossible. Entry to this privileged class would be permitted only to those whose dedication to the world state was absolute and unquestioning. In short, you don’t get in by merit or ability but by being an all around one hundred percent shit. Under this ruling, the elite of power addicts would consist of an anonymous service collective of functionaries, managers, and bureaucrats. And below them the slave workers. There would be no place for dissent or independent research. The troublesome artist would be eliminated or absorbed. The elite lives happily ever after, at the top of a control state that makes 1984 seem cozy and nostalgic. (cited in Jeffrey, n.d.)

“Control” as the main theme of Burroughs’ novels, manifests in a variety of ways. In fact, as Deleuze states, control is the name Burroughs proposes as a term for the new consumerist technological state of the world where the human is addicted to control.

Individuals living in this technological world are unable to detach from its power structure; they are addicted, and control is the means for this technological enslavement:

The logical extension of encephalographic research is biocontrol; that is control of physical movement, mental processes, emotional reactions and apparent sensory impressions by means of bioelectric signals injected into the nervous system of the subject. … You see control can never be a means to any practical end. ...
... can never be a means to anything but more control. ... Like junk ... (Burroughs, 1959, p. 162,164)

Although control in the history of confinements in the West is not new, its recent form in societies of control, as Deleuze illustrates, is the harshest (Deleuze, 1990a). Western cultural sensibility begins with Greek cosmogonic myths of order conquering chaos and transforms gradually into the discourses privileging order, and certainty and stability over chaos (Hall and Ames, 1995). In the modern epoch, structuring chaos and contingency become economic necessities of capitalism. Industrialization and expansion of early capitalism required a rationalization to produce a system of order that moulded “the experience of industrial life into subjectivity” (Heckman, 2004, ¶ 8). Modern reason guaranteed linear causal systems in which everything had a cause and consequences. Controlling causes led to desired and efficient results, and certainly assured more profit.

The contemporary world, with its unprecedented technological changes, is too complex to be controlled by modern rationalization. At this point in history, the perpetuality and temporality emphasized by post-modernists is a part of daily experience. It has been understood that linear causality does not operate well when too many competing forces are involved. We are now living in the world that Burroughs prophesied: a technological nightmare. Deleuze describes this new state of life:

Felix Guattari has imagined a city where one would be able to leave one’s apartment, one’s street, one’s neighbourhood, thanks to one’s (dividual) electronic card that raises a given barrier; but the card could just as easily be rejected on a given day or between certain hours; what counts is not the barrier but the computer that tracks each person's position—licit or illicit—and effects a universal modulation. (1990b, ¶ 7)
Along with rapid technological advancement, new cultural norms have been forming, which are “tied to economics … clearly geared towards the promotion of technological advancement at any cost” (Heckman, 2004). This economic system, Deleuze contends, “extends its dominion over humanity not merely through the extraction of labour and production of wealth, but by capturing and distorting the constitutive human power, desire” (Bell, 2001, p. 9). It seems frightening, but Deleuze asserts that “there is no need to fear or hope, but only to look for new weapons” (Deleuze, 1990b, ¶ 3). What are these weapons? Do we give way to this new order or do we resist it?

Doane (2002), in *The Emergence of Cinematic Time: Modernity, Contingency, The Archive*, points to the role of contingency and chance in modern art, and the role these conditions play in the realization of freedom and resistance against modern reason and its structuring/ordering forces. She argues that since modernism produces a system of ordered living, resistance is formed in aesthetics and art (i.e. Dada, Surrealism, etc.) which look for liberation from Modernist rationalism and order. The application of chance in artistic processes is thus a revolutionary act against modernist reason and its systems of control. Doane writes,

In the face of the abstraction of time, its transformation into the discrete, the measurable, the locus of value, chance and the contingent are assigned an important ideological role -- they become the highly cathected sites of both pleasure and anxiety. Contingency appears to offer a vast reservoir of freedom and free play, irreducible to the systematic structuring of “leisure time.” What is critical is the production of contingency and ephemerality as graspable, representable, but nevertheless antisystematic. (p. 11)

She points to the fact that new ordering systems exploit contingency in some way. The new re-territorialized capitalist system takes contingency and chance into account, and
snares and renames risk by having it regulate the irregular or, as Hannigan (1998) describes, turns them into the “riskless risk” (see pp. 71-74). This process of reterritorializing the concept of risk is what Osborne (2003) recognizes as imperative compulsory creativity in a society where cultural productions such as film, television, fashion, music, etc. must inevitably be commodified to serve consumer practices; thus the enjoyment of entertainment functions as highly ordered social evolution. Consumer-driven technical rationalities seek containment of risk, pose solutions and prescriptions to structure contingency, so our lives become more ordered than in any known previous epoch. The uncontained “accident” in our programmed lives is considered an interruptive, an unanticipated and thus undesirable consequence, but precisely because we are subject to an entirely new depth of ordering, the importance of discussion about contingency is increasingly urgent.

This node is engaged with a kind of archaeology of the concept of chance, with a search for “displacement” and “transformations” (Foucault, 1969/1972) of “chance.” As Foucault (1969/1972) argues, the history of a concept is not necessarily about its progressive refinement, but rather reveals the concept’s various fields of constitution and its successive rules of application. An archaeology of the notion of chance illustrates how the concept has evolved in various theoretical contexts. I see “contingency” as a site of potential for resistance. Systems of control usually work through the establishment of static structures wherein chaos and chance are anathema. And yet one of the most common experiences of a creative result is the awareness that it has occurred by chance.
Where do major creative breakthroughs come from? Do they hinge on contingencies or are they the result of intentional and purposive processes?

Considering scientific research as an adventure, James Austin in his book, *Chase, Chance and Creativity*, asserts, “skill alone will not be enough, for much of the novelty in creativity is decided only when you are bold enough to thrust at chance” (1978, p. 63).

Discussing accidental but important developments in science, Albert Rothenberg (1988) contends that scientists understand what has happened and further develop errors that have occurred. Using the term “error” or “conversion of error” instead of the term “serendipity,” he argues that in each case, a link existed between the error’s substance and the accumulation of knowledge to date in that field. He argues that scientists preserved clarification and separation of the fact of nature by error instead of making a correction to the mistake or error. Parnes (1977) suggests that

the typical “aha” experience may be considered to be the result of the new connection of elements residing inside our mind and/or within our perceptual field. This new and relevant connection or new and harmonious connection often “just happens,” accidentally or serendipitously. (p. 462)

Simonton (1995), in his influential theory of creativity and chance-configuration, argues that chance permutation of mental elements is a starting point of creativity. According to him, sometimes these chance permutations, including ideas, concepts, recollections, emotions, etc., converge to create a specific configuration, which can lead to a scientific discovery. He writes, “This ... chance configuration represents the insight that transfers to more deliberate and elaborate processing at later stages in the creative process” (p. 467).
Similarly, chance is understood to play a significant role in artistic creativity. Many artists have reported accidental happenings in their artistic experience. They explain how artistic creativity is a rich interplay between the planned and the unexpected. Francis Bacon (1987), the British painter, states,

“In my case all painting... is an accident. I foresee it and yet I hardly ever carry it out as I foresee it. It transforms itself by the actual paint. I don’t know in fact very often what the paint will do. And it does many things which are very much better than I could make it do. (p. 16)"

Max Elliott asserts that “the process of art-making is full of happy accidents – what fun” (2005, n. pag.). Jeane Duffey describes the way she paints: “Oops! I wonder how that blob of paint turned up in the sky? – that must be how many a bird ‘happened’ in a landscape and how extra leaves were added to overhanging branches” (n.d., n. pag.).

Brian Knowles (2003) sees creativity as the process of relying on accidents. He says, “We never learned how to solve problems, create effects, get concrete results. So we hope for, and rely on fortuitous accidents. What we do by accident we call ‘creative’” (n. pag.)

Clark (1994) refers to the critical moment of creation:

“What marks this moment of picture-making off from others (what makes it inaugural) is precisely the fact that contingency rules. Contingency enters the process of picturing. It invades it. There is no other substance out of which painting can now be made—no givens, no matters and subject-matters, no forms, no usable pasts. Or none that anybody agrees on any longer. And in painting—in art in general—disagreement means desuetude. (p. 16)"

According to Diaz de Chumaceiro (2003), the sudden “aha” experience of a newly conceived creative idea is not simply the artist’s response to accidental happenings, but to four stages of emergent thought, in each of which operates some degree of chance: preparation, incubation, illumination, and verification. For Diaz de Chumaceiro (2003), the term “incubation” refers to unconscious processing. Smith and Blankenship (1991)
define the “incubation period” or “incubation time” as time away, when unresolved problems are set aside. And an “incubation effect” is the result of insight that happens during this period. Diaz de Chumaceiro holds that the “aha” response to the four stages and each stage’s chance happenings is repeated as many times as necessary until the completion of a new creative product. Diaz de Chumacerio believes that, despite the role chance recognizably plays in creative processes, it remains largely unexplored as a subject of research. Serendipity, as the faculty of making unexpected but fortunate results by accident, is studied by some researchers, but mostly in vocational and career counselling (e.g., Betsworth and Hansen, 1996; Cabral and Salomone, 1990; Hart, Rayner, and Christensen, 1971; Miller, 1983; Scott and Hatala, 1990), although not in the domain of art.

The term “chance” has been understood in various ways. It usually refers to what is totally undetermined as well as what is unpredictable, unexpected and accidental. In his essay, *Accident and the Necessity of Art*, Rudolph Arnheim (1966) writes,

> Accident always refers to relation, and when we call a relationship accidental, we express our belief that it did not come about through a direct cause and effect connection between the parties concerned. (p. 164)

The preferred concept for Plotnitsky (2004) is “contingency,” which is, as he argues, the interplay of both causality and chance. The word contingency is derived from two Latin words, *con* meaning “together with,” and *tangere* meaning “to touch.” Hence, contingency is about how two things relate to, and in contact with one another. Referring to differing meanings of the term “contingency” in diverse fields, Larsen (2004) argues that the notion of contingency varies in meaning as it appears in logic, rhetoric, theology
or literature. The semantic focus point is the relation between that which exists by chance and that which exists by necessity. In literature the fundamental ambition of many autobiographies is to transcend the ephemeral “conditions humaines” and give the individual life an interpretation of necessity. Gould (2002) defines contingency as the tendency of complex systems with substantial stochastic components, and intricate nonlinear interactions among components, to be unpredictable in principle from full knowledge of antecedent conditions, but fully explainable after time's actual unfolding. (p. 46)

The axiomatic conception of chance introduces the phenomenon as an unanticipated occurrence. The question is, why do we single out for attention some, among the myriad unanticipated events that occur each day, but not others? To which events do we pay attention and how do we assign meaning to these occurrences? What is the role of human agency in responding to chance occurrences? What is the relationship between our deliberative and willful actions and chance happenings? Do agency and chance exist apart? What is the relationship between these two in a creative act? Which one plays a central role in a process of creation, chance intervention or artist’s agency?

The following node is an attempt to understand how philosophers and artists have approached the notion of chance/accident/contingency and how they have responded to these questions.
The Legacy of Chance: A Historical Overview

The element of chance in the universe historically has been represented and understood in various forms. In the Homeric epic, chance events, as Edmunds (1975) describes, were attributed to divine intention. For Homeric characters, behind actions there were divine and human intentions, and outcomes of actions were not completely random but rather were infused with intention. For them, chance was divine intervention and, as Edwards (1987) contends, often in contrast with their own human intention. Hammer (1998) addresses the notion of divine intervention as chance in the Homeric epics, and writes,

The gods in the Homeric epics, the Iliad in particular, are everywhere. They watch, take sides, devise plans, appear in dreams, provide counsel, interfere in the physical universe, and even engage in fighting. In short, the gods act and appear as forces originating outside the human will: as chance, or contingency, or luck. (p. 126)

Accordingly, Edmunds (1975) in his book, *Chance and Intelligence in Thucydides*, states that “from the point of view of most Greek literature prior to Thucydides, tyche is objective and is connected with the divine. Tyche comes from outside and is what befalls one” (p. 191). He begins his discussion in Thucydides’ *History* (431, BC) by delineating the distinction between tyche (chance), and techne and gnome (perception, foresight, planning, technical competence, and the like). He argues that in Thucydides’ time, techne-tyche and gnome-tyche antitheses were commonplace, and that the opposition between chance and skill broadly appears in Greek writers’ work. In fact, techne and gnome were associated with “reason” as opposed to unreasoning passion. He puts forward that

the earlier Greeks, from what was essentially a religious point of view, saw mortal affairs in terms of tychne. Thucydides reverses this situation and sees tyche in terms of human affairs, as that which is unexpected or contrary to calculation. …
Tyche is then the degree by which the outcome differs from the expectation. (p. 207)

Edmunds concludes that in Thucydides’ analysis of history, contingent elements can be separated from the main trends of a certain period of history. According to him, for historiographical purposes, Thucydides excluded tyche as a principle. He writes,

In particular, he [Thucydides] expresses the technical spirit of this period: in the strictness of his method, in his confidence in his method, and in the conception of method as eliminating the merely contingent and aiming at the idea, he specially resembles the author of the Hippocratic De Arte, who defended “the art” against those who attributed its successes to tyche. (p. 206)

Generally, in Homeric epoch, chance (tyche) was attributed to the gods and divine intervention, although Thucydides turned it to human affairs and defined it as unexpected outcomes. In this period, chance was seen to be a source of knowledge, and it was considered a key for understanding and even influencing the forces that ruled the universe.

Among pre-Socratic philosophers, the atomists, Leucippus and Democritus⁷, were the first who in the fifth century B.C. consistently thematized chance. Denying the existence of chance, Leucippus declared that “nothing occurs at random, but everything for a reason and by necessity.” Democritus claimed that the universe consisted of the everlasting, undividable, and infinite in number elements which he called “atoms,” and

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⁷ “Leucippus is a very shadowy figure; his exact dates are unknown, some even say he never existed, but it is likely that he was a contemporary of Empedocles (around 440 BC) and that he came either from Miletus or from Elea. Democritus, who was a disciple of Leucippus, is a more certain figure. He was born 460 BC in Abdera in the north of Greece and died at the age of 90 years, after leaving an expansive work elaborating his philosophy including the atomistic theory in great detail. Democritus has written approximately 70 books and hence overshadows his master by far. Unfortunately none of his writings remained intact, but a great deal of what he said has survived in Epicurus.” (cited from http://www.thebigview.com/greeks/democritus.html)
the “nothing.” Atoms were in constant motion, and hence their positions, sizes and shapes differed from each other. Everything in the universe formed when the atoms were appropriately combined and passed away when the atoms separated. Therefore, all that existed were atoms and void. Countless atoms necessarily meet and create forms through trial and error without any purpose. Although in the Democritus’s theory, chance is present in the formation of the universe—when “heavens and ... all the cosmic system” (Aristotle, trans. 1970, 196a:26) come into being. But it ceases to function post formation, that is, chance is thematized in ideas about the formation of the cosmos, but not about the working of the universe. According to atomists, all things in the world proceed from a definite antecedent cause, so that they are predictable and have necessary outcomes. Events are brought about necessarily and unavoidably by the element of causality. This idea of predictability and causality, in conjunction with Aristotle and Plato, has become the dominant and hegemonic formative ideology in western thought.

Atomists’ blind conviction regarding the necessity of vortex-like movement of atoms, without cause and origin, was criticized by Aristotle. Stating that none of the early philosophers, who had already attempted to theorize chance, provide a satisfactory explanation, Aristotle devotes book II of his *Physics* to illuminate what chance is, and what its relation to natural necessity might be. Chance in Greek philosophy has two conceptions: tyche and automaton. Tyche (luck, good fortune) is used in the more general sense while automaton (spontaneity, coincidence) is used for natural processes. Tyche occurs in the field of human affairs and human intentions, while automaton refers to natural causal systems as an interruption of a process which produces an unusual result.
For Aristotle, both of these forms of chance (tyche and automaton) are objective and exist in our everyday experience.

Aristotle in *Physics, Book II* identifies four causes for a thing:

1) The material cause: the matter out of which a thing is made; “that out of which as a constituent a thing comes to be … for example, the bronze and the silver and their genera would be the causes respectively of a statue and a loving-cup;”

2) The formal cause: the forms in accordance with which the matters come together; “the form, or model … this is the account of what the being would be, and its genera … and the parts which come into the account;”

3) The efficient cause: the agent or force which effect the change; “the primary source of the change or the staying unchanged: for example, the man who has deliberated … the father [of the child];

4) The final cause: the end or purpose for which a thing exists; “That is what something is for, as health might be what a walk is for” (Aristotle, trans. 1970, chap. 3).

For Aristotle, these causes are fundamental to the understanding of any happening.

Then, he asks whether chance is the fifth cause. In chapter 5 of *Physics*, Aristotle distinguishes between what happens by necessity—“always ... [or] for the most part” (trans. 1970, 196b:10) and what happens by chance or luck. According to him, some events occur for a purpose and some do not. Of those which “come to be for something” (196b:15-20) “some are in accordance with choice and some are not” (196b:15-20). The
necessary and “for the most part” events are mostly in accordance with deliberate intention and choice. Furthermore, he believes that among those events that happen by chance “there are some to which [chance] can [have causes]” (trans. 1970, 196b:20).

According to Aristotle, all outcomes of thought or nature are for the sake of something. Nature moves toward a definite end, and human beings must have a purpose, a reason for doing a certain thing.

Therefore, Aristotle distinguishes two kinds of causation: “proper causation” and “accidental causation.” Within proper causation, things occur out of necessity with “automatic outcomes” which are intended and expected. In accidental causation, events take place by coincidence and the outcomes are indeterminate and unexpected. Chance lies in the realm of accidental causation. Aristotle defines luck (tyche) as something that “comes to be by virtue of concurrence” (trans. 1970, 196b:25). Luck is the incidental production of some result by a cause that took its place in the chain of causes without the result being contemplated. For chance happenings, according to Aristotle, are those events occurring incidentally, not uncaused. They are the outcome of the concurrence of two causal sequences. He writes,

For as a thing is, so it can be a cause, either by itself or by virtue of concurrence. Thus that which can build is by itself the cause of a house, but that which is pale or knows music is a cause by virtue of concurrence. That which by itself is a cause is determinate, but that which is a cause by virtue of concurrence is indeterminate; for an unlimited number of things may concur in the one. … Clearly then, luck is a cause by virtue of concurrence in connection with those among things for something which are objects of choice. (trans. 1970, 196b:25-197a:5)

Aristotle categorizes luck into two groups: good fortune and bad fortune. “Luck is called good when something good comes out, and bad when something bad, and it is called
good fortune or bad fortune when the consequences are sizable” (trans. 1970, 197a:25).

For Aristotle, Tyche represents good fortune which is a consequence of skill as well as luck. According to him, luck (tyche) can only be relevant to rational beings. He argues that “luck and its outcome belongs only to things which can be lucky and in general engage in rational activity. Hence, luck must be concerned with things achievable by such activity” (trans. 1970, 197b). Luck or good fortune as “an activity going well” (197b:5) must involve choice and deliberation. So it is reachable only by those who are “capable of choosing” (197b:8). “Hence nothing done by an inanimate object, beast, or a child, is the outcome of luck” (trans. 1970, 197b:7). Conversely, the automatic is associated with animals and inanimate objects:

Thus we say that the horse came automatically, in that it was saved because it came, but it did not come for the purpose of being saved. And the tripod fell automatically. It was set up for someone to sit on, but it did not fall for someone to sit on. (Aristotle, trans. 1970, 197b:15)

The Aristotelian world with its causality is a de-divinized world. His philosophy of natural sciences was adopted later in the seventeenth century to justify the form of modern sciences.

Although Aristotle recognizes and theorizes chance in the universe, in his theory of art and poetics, chance has no place. For Aristotle, an artwork is portrayed by an “aesthetic necessity.” In contrast with the actual world in which events do not intend a “single result” (Aristotle, trans. 1971), in the world of art, happenings are events that must happen to complete the intended design. Thus, while he believes chance can be experienced in an artistic process, it must fit the overall plan. Morson (1998) argues that “for Aristotle, and for the tradition of poetics deriving from him, the harmony of art
ideally eliminates all contingency from the artwork. It makes a perfect “unity,” in which everything has its place” (p. 287). Aristotle believes that a perfect piece of art manifests a perfect form in which everything is there for a purpose:

> The structural union of the parts being such that, if any one of them is displaced or removed, the whole will be disjointed and disturbed. For a thing whose presence or absence makes no visible difference, is not an organic part of the whole. (Aristotle, trans. 1971, VIII, p. 53)

In Aristotle’s aesthetics, nothing in a work of art is contingent, which he defines as something that “can either be or not be” (Morson, 1998, p. 287). Hence, Morson concludes, “It would seem that contingency, surprise, and human freedom are ruled out of the artwork” (p. 288). However, in his introduction to a translation of Aristotle’s *Physics*, Oesterle (1962) surveys Aristotle’s theories on chance with the apparent aim of showing that chance does indeed factor significantly throughout Aristotle’s work:

Now it should be pointed out first of all that contingency in one way or another enters into all of the logical works of Aristotle. Even prior to them … Porphyry’s *Isagoge* introduces contingency in the definition of predictable accident… In the *Categories*, accident means something quite different: that which is present in and is predictable of a subject; and while some such accidents are necessarily present in a subject, others can be present or absent, and in this respect they are also predictable accidents… In the *Prior Analytics* (Book I, Chapter 13) … Aristotle first points out the distinction between the possible as opposed to the impossible and the possible as opposed to the necessary. In the *Posterior Analytics* he shows that there can be demonstration only in necessary matter, excluding thereby the extreme cases of possibility opposed to the necessary, namely, fortune and chance. On the other hand, he notes that demonstration in necessary matter does not exclude natural probability, i.e., what happens for the most part. The *Topics* introduces a new type of contingency … [which] is the same as likelihood or verisimilitude, as distinguished from truth. In the *Rhetoric* the enthymeme persuades in contingent matters, largely from singulars, by an appeal to appetite. In the *Sophistical Refutations* Aristotle shows that it is the infinity of *ens per accidens* that is exploited by the sophist … Finally, in the *Poetics*, contingency is shown to be necessary for tragedy. (pp. 9-10)

Plato, like Aristotle, holds that the universe must come to be by some cause. In the *Timaeus*, Plato (trans. 1888) elaborates his metaphysical cosmology. His Pythagorean
character, Timaeus, begins his discourse by describing the creation of the things by a “craftsman” who is not “a God who creates ex nihilo but … who creates order out of chaos” (Mason, 2006, p. 283). According to Plato, “all that comes to be must needs be brought into being by some cause: for it is impossible for anything without a cause to attain to birth” (Plato, trans. 1888, 28C, p. 87). He declares Demiourgos (which literally means the craftsman) the cause of the universe. Then Timaeus focuses on the nature of material (fire, water, air and earth) and asserts that the craftsman, Demiourgos, uses materials to create products. According to Plato, via Timaeus, God has used a model for his creation which is necessarily perfect, eternal and ever-unchanging. At the end he concludes, “Now it is manifest to everyone that [God] looked to the eternal: for the universe is the fairest of all things that have come to be, and he is the most excellent of causes” (Plato, trans. 1888, 29C, p. 89). Timaeus presents the universe as an image of Demiourgos: “It has been created in the image of that which is comprehensible by reason and wisdom and changes never” (29C, p. 89). The perfect and eternal Demiourgos has created the universe in his own likeness: “He was good, and in none that is good can there arise jealously of ought at any time. So being far aloof from this, he desired that all things should be as like unto himself as possible” (30A, VI, p. 91).

Plato believes that God is the cause of the universe who created it for good. Hence, Plato thinks of this cosmos as the product of intelligent design. In Timaeus’ dialogue, Plato represents the beauty, proportionality and perfection embedded in the world. As Johansen (2004) states,

"Timaeus shows his concern with keeping his account proportionate with the relative importance and value of his subject matter. A proportionate account of the
cosmos itself instantiates the order and relative importance of the parts of the cosmos. (p. 192)

He introduces the world as a production of reason; a rational construction with a visible order which “relies on invisible forces” (Beierwaltes, 2003, p. 269). According to Plato, the universe is patterned after ideas. Ideas in Plato’s philosophy are “unchanging existents and at the same time thinking structures of a timeless, absolute Mind” (Beierwaltes, 2003, p. 269). They are pure forms of understanding and reason. For Plato, the universe is “the fairest of creations.” It is a conscious imitation of the divine and super-sensible world of Ideas. It exhibits its likeness to its originating perfect pattern “in the orderliness of celestial movements and in the mathematical perfection of its spherical form” (Morrow, 1950, p. 147).

However, there are causes which produce chance effects and chaos in the world. Plato calls them secondary causes. The state of chaos, as Plato points out, is the material world before reason (God) took control of it:

For God desiring that all things should be good, and that, so far as this might be, there should be nought evil, having received all that is visible not in a state of rest, but moving without harmony or measure, brought it from its disorder into order, thinking that this was in all ways better than the other. (Plato, trans. 1888, 30A, VI, pp. 92-93)

So, Plato identifies two kinds of causes: “true cause” and “auxiliary causes” (Morrow, 1950). True cause is divine cause (Demiourgos)—an agency working for the best. Secondary causes are those the craftsman “uses to serve him in carrying out the idea of the best so far as is possible” (46D, p. 161). Timaeus states,

We must declare both classes of causes, distinguishing between those which with the aid of reason are the creators of fair things and good, and those which being
destitute of reason produce from time to time chance effects without design. (47B, p. 163)

Here, Plato’s concept of necessity comes to light. Plato, in *Timaeus*, distinguishes between intelligence and necessity. Intelligence is the self-moving soul while necessity governs the behaviour of material things. For Plato, necessity is associated with chance and disorder. Chance is produced when necessity is not connected with reason. When material things are not controlled by intelligence, they act randomly and disorderly without design. The universe is created for the best so necessity must be controlled (“persuaded”) by intelligence. Hence, God (the craftsman) persuades necessity to produce an orderly and purposive cosmos. For Plato, the universe is fashioned by a combination of reason and necessity:

The generation of this universe was a mixed creation by combination of necessity and reason. And whereas reason governed necessity, by persuading her to guide the greatest part of created things to the best end, on such conditions and principles, through necessity overcome by reasonable persuasion, this universe was fashioned in the beginning.” (trans. 1888, 48A, p. 167)

Obviously, for Plato, the universe is the result of the victory of intelligence over disorder. It does not seem, in such a world, that chance and disorder and unpredictability can have a place. Plato’s reference to chance as disorderly events which happen in absence of reason who wills good, leads us to think that the order they lack is some aspect of the good (Morrow, 1950). The Platonic world is orderly, stable and predictable. It is a world without chaos and based on reason, and is for good.

Aristotelian and Platonic metaphysics were inherited and suitably modified by thinkers in the Middle Ages. For St. Thomas Aquinas, chance was a certain relationship between causes and outcomes. As a Christian theologian, Aquinas believed in God's providence,
which for the most part, as Brian Davies (1993) notes in *The Thought of Thomas Aquinas*, was a “way in which God governs or rules his created order” (p. 158). Davies suggests that Aquinas’s thesis of providence includes:

the beliefs (1) that creatures are made by God *ex nihilo*, (2) that they depend on him entirely for their being or goodness, and (3) that they are moved by God both as efficient cause and as final cause (as alpha and omega). (p. 158)

Such a belief in providence indicates that for Aquinas, everything in the world is purposeful and intended by God. He maintains that God creates and orders everything to an end which is divine goodness; every cause necessarily achieves the planned effect because the universe has been created for good. He writes,

> We have to declare that God has providence. He creates every goodness in things, as we have already shown. It is not only in the substance of created things that goodness lies, but also in their being ordained to an end, above all end to their final end, which, as we have seen, is the divine goodness. This good order existing in created things is itself part of God's creation. Since he is the cause of things through his mind, and, as we have already made clear, the idea of each and every effect must pre-exist in him, the divine mind must preconceive the whole pattern of things moving to their end. This exemplar of things ordained to their purpose is exactly what Providence is. (Aquinas, trans. 1969, question 22, article 1, p. 150)

Hence, nothing can fall outside of God’s providence and nothing can be “subject to chance” (Davies, 1993, p. 159). Aquinas indicates that chance events have causes which are always part of providence. They are parts of the divine design for making the creation more varied and complete.

Following Aristotle, Aquinas holds that everything happens for a purpose and any cause normally produces an effect. In this purposeful necessity, some outcomes come to be by chance. He asserts that chance is an accidental cause in the realm of purpose which happens in the fewer number of cases (Aquinas, 1962). He argues against the opinion that
Aquinas certainly asserts that there are contingent events in the natural world. But these events are based on God’s causality and in the scope of his will, not on random events or matters of chance:

The form of anything that proceeds from an intellectual voluntary agent is intended by the agent. Now the universe of creatures has for its author God Who is an agent by His will and intellect. . . . Nor can there be any defect in His power, so that He fail of His intention: since His power is infinite. . . . It follows therefore that the form of the universe is intended and willed by God. Therefore it is not from chance: for we ascribe to chance those things which are beside the intention of the agent. Now the form of the universe consists in the distinction and order of its parts. Therefore the distinction of things is not from chance. (Aquinas, cited in Benzoni, 2005, p. 460)

With Augustine, the most influential philosopher of the Middle Ages in Europe (Stanford Encyclopaedia of Philosophy, 2004), the metaphysical basis is replaced by the eternal domain of alternative possible histories instead of the idea of one necessary world order. Augustine argues that God has designed and predicted all events in history. Discussing his famous section on “time,” Augustine, in The Confessions, describes God’s action of creation as a single will, not as a succession of wills. According to him, in being perfect, God must exist outside of time. God created the world not at a particular time, but created time alongside the world. Therefore, God is outside time—“no time and no created thing is co- eternal with [God]” (Augustine, trans. 1961, Book XI, chap. 30) and knows history whole. Augustine, like Aquinas, believed that a providential design guided the world and all events.
For Augustine, God’s providence controls everything, and nothing is outside of the rule of providence: “that God can never be believed to have left the kingdoms of men, their dominations and servitudes, outside of the laws of His providence” (Augustine, trans. 1950, Book V, chap. 11). Hence, anything beyond providence is not accepted. Augustine, in the fifth book of *The City of God*, emphasizes that nothing like fate or fortune, as necessary causes, exists over and beyond providence:

> According to the judgment or opinion of those who call those fortuitous which either have no cause, or such cause as do not proceed from some intelligible order, and those things fatal which happen independently of the will of God and man, by the necessity of a certain order. In a word, human kingdoms are established by divine providence. (Augustine, trans. 1950, Book V, chap. 1)

Therefore, everything in the universe happens only in accord with God’s will which is attributed with a certain order of causes:

> Though there is for God a certain order of all causes, there must therefore be nothing depending on free exercise of our own wills, for our wills themselves are included in that order of causes which is certain to God, and is embraced by His foreknowledge. (Augustine, trans. 1950, Book V, chap. 9)

In such a providential system, nothing can exist without cause: “The cause of things, therefore, which makes but is not made, is God; but all other causes both make and are made” (Augustine, trans. 1950, Book V, chap. 9). God is the cause of everything in his providential order, even if we are not able to recognize or understand the cause of an event. For Augustine, like Aquinas, God designed creation perfectly. There are no errors in creation, and what we see as mistakes, such as wild beasts, disasters, etc. is our failure to see “how admirable these things are in their own places, how excellent in their own natures, how beautifully adjusted to the rest of creation, and how much grace they contribute to the universe” (Augustine, trans. 1950, Book XI, chap. 22).
Accidental causes akin to natural causes are the result of God’s will. They are considered as accidental or chance because of the insufficiency of human knowledge. So it seems that there is no place for literal or objective contingency and chance in Augustine’s philosophy; there is only that which we misunderstand, being un-divine humans, as chance or contingency. Unlike Aristotle’s philosophy in which chance is an actual cause indicating the indeterminacy of the universe and a part of his theory of causality, in Augustine’s philosophy, chance is considered as chance by virtue of the lack of human accessibility to complete knowledge. So if we had access to complete knowledge, we would not see chance or contingency but perfection and order, regardless of events such as disasters, death, misfortune, etc. In a providentially ruled universe, nothing can be undesigned or uncontrolled.

The above review reveals that, in Western culture, chance (discussed in various ways) has always been approached in terms of its relation with intelligence and purpose. For pre-Socratic thinkers chance was divine intention; for Greek philosophers, it was necessary causation; for the Middle Ages theologians, it was a part of a harmonic, perfectly designed universe. Dominant thought in Western culture as a whole has been based on a tendency “to equilibrium at an optimal state, a sufficient reason for everything and a pre-established harmony of the whole” (Morson, 1998, p. 298). In such a culture, chance cannot be anything except an error which must be controlled. We see in the Modern period a Middle Ages God replaced by natural/historical laws. Modernism re-introduces a belief in the facts, belief that everything in the world has a sufficient reason, and that there is a pre-established harmony of the whole to the extent that nothing is
considered to occur “out” of design. Hypotheses of regularity and the universality of natural laws have inflected many aspects of Western culture in modern era (Guignon, 1983).

Modernism and Chance

In Modernity, conceptions of the world can be seen to take a curious retrogressive turn back, past the Medieval philosophical sense of chance and necessity being “acts of god” to the earlier Aristotelian conception, where the universe’s causal matters are atheistic. Aristotle’s concept of causality has had immense significance in the development of conceptions of causality since the seventeenth century. His idea that there is no accident, that everything happens by necessity, and that chance is a term used when we are unaware of causes, has influenced many thinkers—from Spinoza and Leibniz to Hume, Laplace, and Einstein (Morson, 1998). The world defined by modernism under Aristotle’s influence is “based on three hundred years of mechanistic, separative thinking, which has de-divinized, de-sacralised an Earth that was once worshiped as a goddess” (Green, 2003, p. 283).

The modern mechanistic and deterministic universe

In the sixteenth and seventeenth centuries, the trend of thought was that one needs to impose upon experience a methodology or rationality in order to understand the universe’s design, and that the need for a special force, like mathematics for instance, was necessary to develop a full understanding of the universe; this became the dominant inclination of Western thought. Finding ordered beauty in mathematics, thinkers like
Nicolous Copernicus, Tycho Brahe, Johann Kepler, and Galileo Galilei saw mathematics as the underpinning of nature’s laws, and strived to discover nature’s order. Their cosmology and methodology was completed and expressed best by both Newton (1777) and Descartes (1637/1977), who looked at the universe as a deterministic and predictable place, and who believed that its deterministic rules could be described by scientific and mathematical principles in order to predict and control the future.

Newton constituted some simple principles applied to the whole universe to “explain the mechanical working of the universe” (Doll, 1993, p. 20). His work was a beginning for empirical science to seek “encompassing formulas and regression equations that can foresee the end from the beginning” (MacPherson, 1995, p. 263). Therefore, two important premises of Newtonian cosmology developed as foundations of modern and empirical science: first, the notion that the universe was a deterministic place; second, the concept that effects were continuous functions of causes. The latter meant that “sufficiently small variations in causes will produce arbitrarily small changes in effects” (MacPherson, 1995, p. 264). His idea of cause-effect determinism, measured mathematically, depended on a closed, non-transformative, linearly developed universe. Stability was assumed, nature was in all ways “conformable to herself and simple,” and the disciplines were organized in a reductive hierarchy from mathematics and physics through to sociology and psychology (Doll, 1993, p. 21). Similarly, Descartes’ method of right reason applied mathematical methods in order to achieve perfect certainty in human knowledge. He asserted that mathematical reasoning can be rightly applied as a model for progress in human knowledge because it has genuinely achieved the certainty for which
human thinkers yearn. He believed that this method must be the basis of all scientific and philosophical research. The Cartesian method represented a mechanistic world in which most of human behaviour is subjected to simple mechanistic explanation. Descartes’ theory cooperates well with the Newtonian mechanistic model upon which the principle of modernity is constructed. Hall (1994) describes the Cartesian source of influence on modernity:

What is modern about the Cartesian stratagem is not merely the provision of an unsullied vantage point from which reason could inventory the extended world. The modern impulse is found as well in Descartes’ use of the corpuscularian theory rediscovered by his contemporary, Pierre Gassendi. Atomic theory, which characterizes the cosmos in materialist, mechanistic terms, is a principal motor of modernity. (pp. 30-31)

Newtonian and Cartesian perspectives shaped a rationalist and empiricist branch within the modernist paradigm. The notion of having control over nature by discovering its law, and the belief in a grand theory of the advances of progress and logic toward perfection, were developed. According to this cosmology and methodology, fundamental laws governing our existence can be controlled and exploited in order to ensure a brighter future. Based on such tenets of Newtonian-Cartesian cosmology, modern science claims the regularity and universality of natural laws. Newtonian-Cartesian method relied on a mathematical and mechanistic model that helped to pursue pure reason by eliminating the distraction of sensory information.

Modern reason

Many philosophers (e.g. Foucault, 1970; Heidegger, 1962; Horkheimer and Adorno, 2002; Nietzsche, 1999) hold that the modern worldview is fabricated by Descartes’ four
simple rules. These laws, illustrating a method provided by the progress and certainty of mathematical knowledge, are:

1. Accept as true only what is recognizable as clear and distinct by reason;

2. Deconstruct every complex idea into simple constitutive elements, intuitively understandable with reason;

3. Reconstruct complex ideas by beginning with the simplest ones and ascend the more complex.

4. Apply both the methods of induction and deduction to retain the whole argument at once. (Descartes, 1637/1977)

These rules represent a world in which what is rational is real and is truth. Emphasizing that there is no unified modernist theory of knowledge, Toulmin (1990) argues that various modernist theories of knowledge share three Cartesian tenets: 1) the quest for certainty; 2) the clear distinction between subject and object; 3) a belief in progress (moving forward to a united system of knowledge). He holds that modernism combines the idea of cosmos (the order of nature) with the polis (the order of society) to create a harmonic world, the cosmopolis. The cosmopolis is a place of certainty and objectivity, and universal, unified systems of knowledge. Hall (1994) also puts forward that the modern epoch is defined by Descartes’ significant double move. He identifies these two moves as: “the internal move toward the grounding of the self in consciousness of itself, in the securing response of self-reflection, and outward move from the self to the material world armed with the coordinates of analytic geometry” (p. 30). In fact, Descartes is regarded as the father of modern philosophy particularly because of two main issues that he raised: the problem of Knowledge and the mind-body problem. Descartes believed

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8 Toulmin believes that we are in the third episode of the history of modernity not in the post-modern era.
that reason was the fundamental source of knowledge. In the *Meditations* (1987), he applies “methodical doubt” in two steps to determine what he can know: 1) doubting everything that can be doubted, and 2) accepting something as known only when it is recognized with absolute certainty (pp. 12-15). One essential requirement of knowledge was certainty; without certainty nothing would be knowledge. In the *Meditations*, Descartes also discusses the relation of causality to knowledge. According to him, if we know causes, we are able to predict what the effects will be (p. 28). The relation is straightforward and linear: the given knowledge of a cause or a natural law allows control of the effect and the result. Here, Descartes raised the question of the relation of objects of knowledge to the knowledge of them. This is what Hall (1994) proposes as Descartes’ second move.

Indeed, Descartes is the first who formulated the dualism of Mind and Body. In the *Meditations*, he claims that he begins from nothing. He contends that he can negate everything except his own existence: if he did not exist, he would not be thinking. So, he states, “*Cogito ergo sum,*” (I think therefore I am). He writes,

I have convinced myself that there is absolutely nothing in the world, no sky, no earth, no minds, no bodies. Does it now follow that I too do not exist? No: if I convinced myself of something then I certainly existed. But there is deceiver of supreme power and cunning who is deliberately and constantly deceiving me. In that case I too undoubtedly exist, if he is deceiving me; and let him deceive me as much as he can, he will never bring it about that I am nothing so long as I think that I am something. So after considering everything very thoroughly, I must finally conclude that this proposition, *I am, I exist,* is necessarily true whenever it is put forward by me or conceived in my mind. (Descartes, 1987, pp. 16-17)

The problem begins from here, because he does not begin from nothing, but rather he starts from thinking. Reason becomes real priority of his theory (and later, of
modernism). Green (2003) argues that in the *Mediations*, Descartes reduces whole reality into two “substances:” mind and matter. The matter is “the weighable, the extended in space and time, devoid of qualities, feelings, thoughts, interior life” (Green, 2003, p. 272). According to Green (2003), Descartes believes that only God and human beings have *mind*, and that the universe, the Earth, and her inhabitants are all *matters*. Such reduction has led us to believe that the “universe, the Earth, evolution, all function ‘blind.’” And human beings are rapidly being reduced to the same” (p. 272). *Cartesian Dualism* springs from this argument, and provides a base for dual thinking as typical of modernism.

**The duality of the subject/object**

In Descartes’ philosophy, the “subject” is the only certain being from which the process of knowing begins. “Cogito” (“I”) is certain, beyond doubt and its existence is self-evident. It is a “thinking substance” or “soul,” separated from the world and the objects:

> I conceive of myself as a thing that thinks and is not extended, whereas I conceive of the stone as a thing that is extended and does not think, so that the two conceptions differ enormously ... I am nothing but a thinking thing. (Descartes, 1987, pp. 30-31)

In Descartes’ philosophy the relationship between subject and object is problematic. The object is something “out there” in the reality of the world, and the subject tries to know it. Hence, Descartes puts forward two separate worlds in his philosophy: the ideal inner world of the subject, and the outer world of the object. The problem for Descartes arises from this point: how can we connect the certainty of the inner mental world to the uncertainty of the knowledge of the external world? Descartes’ answer is God. This is
why, in the *Mediations* (1987), he tries to prove God’s existence in order to argue that God ensures the correspondence between the internal world and the external world:

> So there remains only the idea of God; and I must consider whether there is anything in the idea which could not have originated in myself. ... All these attributes are such that, the more carefully I concentrate on them, the less possible it seems that they could have originated from me alone. So from what has been said it must be concluded that God necessarily exists. (Descartes, 1987, p. 31)

The Cartesian legacy in epistemology, as Guignon (1983) notes, continues in the modern era. Guignon, in *Heidegger and the Problem of Knowledge*, maintains that Heidegger challenges Descartes’ influence on modern philosophy in two ways: 1) through modern subjectivism and individualism resulting from a Cartesian notion of “cogito;” and 2) through the technological orientation of the modern world, which originated from Descartes’ understanding of the mathematical and physical external world (pp. 160-161).

In the modern era, Descartes’ “cogito,” becomes an *a priori*, autonomous, knowing subject. Although such a subject becomes morally autonomous in Kant (1949), and morally self-conscious in Hegel (1977), all subjects, for these modern philosophers, are self-controlling agents, free from external controls such as fate, contingency or luck. Modern subjects rationally determine their fortune by pure reason. They are able to predict contingencies and chance happenings, and to control and structure chaos or unanticipated occurrences. Chance, from a modernist point of view, has an objective existence that must be either mastered or integrated into a greater self-consciousness by the autonomous agent. Bernard Williams (1993) argues that in ancient philosophy, human beings were largely powerless against fate and chance. “Choices or opportunities [were] not merely limited, … but … they [were] designedly and systematically limited,
by another person who [shaped their] actions to his intentions” (p. 154). However, post-Renaissance persons became modern subjects, free agents.

The duality of good luck (serendipity)/bad fortune

With the understanding the subject as an autonomous rational agent, and the universe as a mathematically ordered construction, the definitions of contingency and chance change in the modern era. The universe, as represented by the Enlightenment, is expressed in mathematical symbols as the only pure and clear way of expression. Nature becomes a product of immutable physical laws which can be discovered by “harnessing the illuminating power of scientific reason” (Ashton and Rafferty, 2002, ¶ 3). In such a context, the earlier notions of fate and fortune have been replaced by modern notions of risk.

Giddens (1990) argues that the unexpected now comes from risk, from “our own activities or decisions” (p. 30) rather than fate or divine intervention. He argues that risk is “a term which only comes into being in the modern period” (p. 30). In this new paradigm, people’s choice determines their fate. The universe is law-abiding, and if we know its laws, we are able to control our destiny. Chance occurrences are random and impersonal and what we see as bad luck may become good luck with effort. In accord with this point, Hammer (1998) writes,

In a culture of entrepreneurial individualism, we see certain stories downplayed, such as those in which misfortune eventually drives a person to destitution. On the other hand, we see the validation of rags-to-riches tales in which the individual invariably meets at some point with bad luck. With the continued taking of risks, though, eventually hard work pays off and one reaps the rewards of effort. (p. 140)
Therefore, bad luck is what we are not fully prepared for, or is the occurrence that we do not know how to manage or control. If we know the rules, we are able to predict and to regulate against its ill effects.

Therefore, the duality of good luck and bad fortune is reinforced by modern thought. Luck, or serendipity, is defined as unanticipated occurrences that favor us, while bad fortune is unpredictable happenings or errors that we need to be prepared for in order to reduce ill effects. The term “serendipity” as an aspect of chance phenomena was invented by Horace Walpole, the British writer in 1754 (New Encyclopaedia Britannica, 2006).

He, in a letter to his friend, Horace Mann (Lewis, 1965), derived the word serendipity from a Persian fairy tale titled *The Three Princes of Serendip*. The fairy tale was the story of three young noblemen traveling through the world to find treasures, but they rarely found the treasures for which they were looking. Instead, they continually ran into other greater treasures, which they were not seeking. They constantly found something unexpected and thus undesired while looking for something else (Bach, 1970). Focusing on such accidental discoveries, Walpole wrote to his friend, Horace Mann on January 28th, 1754:

> As their highnesses travelled, they were always making discoveries, by accidents and sagacity, of things which they were not in quest of: for instance, one of them discovered that a mule blind of the right eye had travelled the same road lately, because the grass was eaten only on the left side, where it was worse than on the right—now so you understand Serendipity? (Lewis, 1965, p. 6)

Recognizing this as one of life’s wonderful tricks, the princes of Serendip (an ancient name for Ceylon) with sagacity and insight could find meaning in their seemingly accidental and unexpected fortunes. Hence, these princes approach life as if everything is exciting, what Walpole called a thrilling approach to life. He wrote,
I must tell you a critical discovery of mine ... this discovery I made by a talisman, which Mr. Chute calls the *sortes Walpoliana*, by which I find everything I want à point nommé wherever I dip for it. This discovery indeed is almost of that kind which I call *serendipity*, a very expressive word. (Lewis, 1965, pp. 5-6)

Although the word serendipity was initially ignored, in the eighteenth century, many variations and deviations from Walpole’s original definition begun eventually to emerge in literature (Green, 2004). These definitions disseminated from the literary milieu to the other fields and disciplines. In 1940, the word appeared in the professional writing in the field of medicine by Walter B. Cannon’s *The Role of Chance in Discovery*. The Harvard physiologist discussed the role of serendipity as a phenomenon in scientific discoveries in a chapter, *Giants from Serendipity*, of *The Way of an Investigator* in 1945 (Green, 2004). In the social sciences, Robert K. Merton, who was interested in the sociology of unanticipated consequences, began to argue that discovery resulted by chance or sagacity from testing other hypotheses. Later, he introduced a theory describing “the serendipity patterns as the common enough experience of observation of datum that is unanticipated, anomalous and strategic” (de Chumacerio, 1999, p. 544).

The term’s proliferation in academic communities, and its being accepted socially, made it the subject of many discussions in different fields. Serendipity is understood generally as the gift of discovering significant things not sought for by chance or sagacity.

Describing the process of some accidental discoveries, Bach (1970) notes that people who discover unexpected things, are “possessed of three qualifications: 1) great expectations, 2) great sublimations, 3) great observations” (p. 11). They begin with “unquestioned faith” in their high and holy expectations. When they do not reach their initial goals, they affirm that “there will be a wayside goal just as good, or better,”

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waiting for them. They also have great observations which help them to find what others
never notice. Diaz de Chumacerio (2003) says that accidental happenings become
serendipities and new possibilities to creators, when such people have prepared their
minds to find them. Creative people need to be talented, skilled, and prepared in their
respective domains to achieve high levels of excellence. Such a conception of chance
turns the traditional understanding of chance as divine intervention to something that is
predictable and controllable by reason and sagacity. Sagacity is considered to be ability
resulted from acquired knowledge over years of learning and experience to form an
opinion by distinguishing and evaluating. So “serendipity” is ultimately transmogrified
by modernism to mean not simply fortune that happens without expectation, but to mean
fortune that can only be recognized by some degree or quality of reason.

**The Chaotic Universe**

In the nineteenth century, new scientific representations of the world in which the
insinuations of the unpredictable and the uncertain were central began to emerge. In
contrast with the modern scientists, scientists like Heisenberg have attempted to
propound a new picture of the universe, a new science, and a new form of perception and
life. They hold that there is no ultimate theory of reality and there is no ultimate equation
from which everything in the world can be deduced. This new vision represents a
universe that is not deterministic, but rather ambiguous and uncertain. It introduces chaos
as the condition of the world and as that which must be explored, rather than avoided as a
source of uncertainty and unpredictability. Such a universe, as Prigogine and Stengers
(1997) suggest in *The End of Certainty: Time, Chaos, and the New Laws of Nature*, is a
giant thermodynamic system far from equilibrium. According to Prigogine and Stengers, the ongoing “complexification” of this universe relies on the intensification of chance fluctuations. Similarly, Chaisson (2001), in *Cosmic Evolution: The Rise of Complexity in Nature*, contends that “randomness, chance, stochasticity” (p. 7) is the origin of emergent phenomena. These scientists have shown that nearly all natural and human systems—the movement of the wind, water and the air, structure of the language, customs and beliefs, etc. (Hayles, 1991)—are non-linear and open (Duit and Komorek, 1997; Peat, 1991) to chaos. “The healthy heart beats randomly and the unhealthy heart beats consistently” (Trygestad, 1997, p. 4). Hence, nature and society cannot be treated in terms of the fixed mechanistic laws and equilibrium systems characterized by modern science and its Newtonian-Cartesian basis (Briggs, 1992). These scientists argue against the modern science that “assumes complexity can be reduced to specific features and then represented in a machine” (Cilliers, 1998, p. 86). According to them, since non-linear and open systems embrace chaos and, therefore, are unpredictable and uncertain, we are able to understand a complex system not through an underlying generative law, as the Cartesian-Newtonian paradigm claims, but in terms of the interactions among elements. We must avoid trying to find master keys and ultimate theories in order to analyze complex systems because the nature of the complex does not let single principles provide adequate descriptions. “We should rather be sensitive to complex and self-organizing interactions and appreciate the play of patterns that perpetually transforms the system itself as well as the environment in which it operates” (Cilliers, 1998, p. 107), and abandon the idea of control parameters.
**Post-modernism and Chance**

Unlike the modernist world, which is a world of design and order without contradictions, the post-modernist world embraces chaos and contradictions. Linear approaches of the mechanical Cartesian-Newtonian paradigm emphasizing anticipation, predictability and outcomes do not have any place in the post-modernist world. Post-modernists attack modernists’ claims of the absolute truth and the mathematical order of the universe. They challenge the modernist idea that science is a paradigmatic human activity which discovers truth, rather than creates it and describes the world as it is. Stanley Grenz in *A Primer on Post-modernism* describes this post-modernist denial of the existence of absolute truth:

> [Post-modernism] affirms that whatever we accept as truth and even the way we envision truth are dependent on the community in which we participate . . . There is no absolute truth: rather truth is relative to the community in which we participate. (1996, p. 8)

Accordingly, truth, for Rorty (1989), is an inter-subjective agreement among people of a community. He argues that science is a human activity like religion, philosophy, politics, or art. It is not about “hard fact” in contrast with “subjective” or “metaphor,” but about inventing “descriptions of the world which are useful for purpose of predicting and controlling what happens” (p. 4). Science, philosophy, art, religion, etc. all try to invent a description of the world. What makes them distinct from each other are simply their different purposes. Hence, none of these descriptions can be the only accurate representation of the world. Rorty claims that we are living in our subjective conditions and there is no “skyhook” which takes us out of such conditions. He distinguishes between the claim that the world is out there and the claim that truth is out there, and asserts that “the world is out there, but descriptions of the world are not” (p. 5). He argues
that truth is a property of linguistic entities, of sentences, so it is a human creation and cannot exist independently of the human mind. For Rorty, only sentences can be true. Human beings make language in which to express sentences to make truths. In fact, we make different languages to habitually describe the world or ourselves. Rorty believes that reality is interpreted by people according to their own subjective conditions. Such a subjective condition includes social influences on the individuals and their beliefs.

Describing Donald Davidson’s philosophy of language, Rorty argues that language is a medium neither of representation nor of expression. He says, “[Davidson like Wittgenstien treats] alternative vocabularies as more like alternative tools than like bits of a jigsaw puzzle” (p. 11). That is, vocabularies cannot reduce to other vocabularies and cannot unite “with all other vocabularies in one grand unified super vocabulary” (p. 11). Treating language as such leads us to search for efficiency of tools rather seeking the contradictory nature of our beliefs. Therefore, Rorty contends that revolutionary achievements in the arts, in the sciences, and in moral and political thought occur when somebody realizes that two or more of our vocabularies are interfering with each other, and proceeds to invent a new vocabulary to replace both. (p. 12)

Creation of a new, third language, through a process of trial and error is not finding how old vocabularies fit together, he says; such an effort cannot be achieved by beginning with premises formulated in the old languages. Creation of vocabulary is the invention of new tools to take the place of old tools. Illuminating the disadvantage of a Wittgensteinian analogy between vocabularies and tools, Rorty explains that a creator, unlike a craftsman who knows what to do before picking or inventing tools, does not know what exactly “it is that he wants to do before developing the language in which he succeeds in doing it” (p. 13). Instead, it is the new vocabulary that makes the description
of the purpose of the creator’s action possible. The new vocabulary helps the creator to do “something which could not have been envisaged prior to the development of a particular set of descriptions, those which it itself helps to provide” (p. 13). Being true or false is traditionally the matter of assuming that there are relations such as “fitting the world” or “being faithful to the true nature of the self.” Treating language as true or false compares language to non-language. Language as a medium means assuming the task of language is either expressing non-linguistic things called “meaning” or representing non-linguistic things called “facts.” A sentence without considering its fixed place in a language game is neither true nor false. For Rorty, discovery is not finding out about the nature of a pre-existent entity, but “is changing the way we talk, and thereby changing what we want to do and what we think we are” (p. 20). He believes that there is no criterion of choice between alternative vocabularies. The only way for discovery available to us is in the comparison of languages with each other, not with something called “fact” which is beyond language. Hence, vocabularies are valuable that are better representations of the world. He writes,

It is essential to my view that we have no prelinguistic consciousness to which language needs to be adequate, no deep sense of how things are which it is the duty of philosophers to spell out in language. What is described as such a consciousness is simply a disposition to use the language of our ancestors, to worship the corpses of their metaphors. (p. 21)

Inspired by historians like Blumenberg, Rorty sums up history beginning with the human need to worship something beyond the visible world, God, which turns in the seventeenth century to a worship of scientific truth. The end of the eighteenth century was a time for substituting a love of scientific truth for a love of ourselves, for worshiping the human spiritual or poetic nature. Now is the time, Rorty says, when “we no longer worship
anything.” It is a time in which we treat everything “as a product of time and chance” (p. 22). Rorty views the history of humanity as the history of metaphor. He argues that “old metaphors are constantly dying off into literal-ness, and then serving as a platform and foil for new metaphors” (p. 16). He contends that the science and culture of twentieth-century Europe are the result of a great number of pure contingencies. In this sense, Rorty denies metaphysical understanding of truth in which something is true because of its causal relation with objects or facts.

Post-modernism’s denial of absolutes, its emphasis on the unusual, its unpredictability and uncertainty, its celebration of chaos and contingencies has led some scholars to make parallels between post-modernism and fractal and chaos science (Mackey, 2004). Authors like Katherine Hayles (1990) in *Chaos Bound*, Ceclie Brennan (1995) in *Beyond Theory and Practice: A Post-modern Perspective*, Harland Bloland (1995) in *Post-modernism and Higher Education*, Mario Markus (2000) in *A Scientist’s Adventures In Post-modernism*, argue the analogies between chaos theory and post-modernism. Brennan (1995) argues that post-modern philosophers challenge the modernist view of knowledge as acquisition of information about things. Knowledge for post-modernists is not purely objective knowledge. They call into question many assumptions of modernism, including the belief in linearity, regularity, and predictability. “Interestingly,” Brennan asserts, “scientists studying the natural world arrived at a point of view regarding knowledge similar to that of the post-modern philosophers” (¶ 11). He holds that in the 1970s, some scientists began to study the chaotic irregularity of systems and to study the universe not as a mathematically structured system, but as a chaotic one. He writes,
It is thus that scientists and philosophers arrived at a similar point in their pursuit of understanding. They have come to realize that although the classical methods of obtaining knowledge possess specific utility, they also structure the inquiry so as to ignore everything that does not fit the model. In both cases a new attitude toward understanding the phenomena under review has evolved. Eschewing the reductionist, linear, and dualistic models of the past, post-modern philosophers and chaos scientists seek to address the complexity of actual processes that exceeds our theoretical grasp. (¶ 16)

Implying the convergence of post-modernism and chaos theory, Markus (2000) identifies three post-modern aspect of chaos theory: 1) vertical pluralism, 2) horizontal pluralism and 3) openness to surprise contrary to reason. Likewise, Bloland (1995) notes that both post-modernism and chaos theory emphasize complexity and notions of disorder, indeterminacy, undecidability, and fragmentation. However, chaos theory searches for structure and order hidden in chaos; chaos theory’s hope for controlling complexity is not what many post-modernist approaches follow in dealing with chaos and complexity. He asserts that

the most important convergence, or relationship, between chaos theory and post-modernism lies in the area where one branch of chaos theory emphasizes the possibility of the creation of order from disorder. This concept when transferred to postmodernist conceptions of society, or of narratives and texts, provides strong reason for using deconstruction to attack seemingly settled metanarratives, to generate discontinuities, and to point to the void that lies beneath language. Chaos theory seems to promise that out of the nothingness that result from deconstructing the language, will arise a new, albeit tenuous, and constantly shifting order that will provide space for new voices and new perspectives to be heard and granted legitimacy. (p. 548)

Does chaos theory actually challenge a breakdown of order? Since its establishment, chaos theory as a metaphor has been increasingly applied to theorize uncertainty and unpredictability emerging in myriad systems, including the Western educational system. Chaos theory is enlisted as a device for teachers whereby they might develop an appreciation for change qua change in the classroom and even to value uncertainty in
strategic decision making. In the following, I briefly review three major elements of chaos theory exploited by education theorists to offer an alternative notion of chaos and order.

**Chaos Theory**

Chaos theory, with its explanatory power to build an understanding of the behaviour of diverse and complex systems, appears intuitively more motivating for some post-modernists (Brennan, 1995; Hayles, 1990, 1991; Markus, 2000). Chaos theory well encapsulates the dynamic complexity of a chaotic universe. It also challenges the deterministic predictability on which the modernist linear paradigm is based, and suggests that complete control over change is impossible, because a small change or perturbation in the initial conditions of a system can have large, unexpected effects. “Change effects change” is one of the primary tenets of these theories dealing with complexity, non-linear dynamics, and chaos (Zera, 2002).

*Chaos theory as a metaphor*

parts; change in one part entails change in another, but ongoing change cannot be predicted. The non-linear behaviour of such systems is complex (Schulberg and Gottlieb, 2002). The complexity of these dynamic systems arises both from the intricacy of internal interactions in systems as well as from the interactions of systems with their external environments. They cannot be described by algorithms; they can only be modeled in the same way they work (Cilliers, 1998). Dynamic systems involve temporal processes. This means they change with time. The behaviour of non-linear dynamic systems can be either regular or chaotic. In fact, as Trygestad (1997) argues, chaos theory refers to a dynamic equilibrium in which a system seeks stability through constant change. Chaos theory shows that patterns exist and are identifiable in changes, but they are “random in both their composition and connections” (p. 4). For example, pendulum motion, in an ideal world without friction or air resistance, appears regular with ordered and constant fluctuation. The pendulum moves between two extremes and, in the middle, it reaches its fastest speed. Conversely, in the real conditions of air resistance, the pendulum comes to rest after a period of time. It can be kept in motion in a clock by receiving a periodic kick of energy which causes its motion to show a general circular pattern. This pattern is a non-repeating periodicity with randomness. Chaos theory is a holistic process for analyzing motion and a myriad of other complex systems and presents a description and explanation for their complex behaviour. Based on a general pattern of changes, chaos theory also provides the possibility of making predictions about the behaviour of a system (Sprott, 1993).
The application of chaos theory is beyond mathematics and physics. It has been used in psychology, physiology, neurology, literature, social sciences, and the humanities (Abraham and Gilgen, 1995; Allman, 1993; Hayles, 1991). It also has been applied “to a variety of human processes, including cognition, motor behaviour, learning, development, attitude formation, affect, social processes, psychopathology, and perception” (Schuldberg, 1999, p. 260). However, it seems that the chaos theory concepts in the humanities and social sciences are mostly introduced in a metaphorical form that differs from those concepts found in the pure sciences. The complex way that a creative act works has also been elucidated by metaphorical reference to chaos theory concepts and terminology. Schuldberg (1999) believes that the creativity question is one of the problems which “are notoriously difficult and apparently insoluble” (Schuldberg, 1999, p. 262). Chaos theory can help tackle such difficult theoretical and practical problems.

In the following, I discuss three major elements of chaos theory—initial effects, bifurcations, and fractals—that seem to provide a metaphorical basis to understand and to discuss the creative process as a nonlinear dynamic system. These interrelated elements can be applied to human systems as well as natural systems.

*The butterfly effect*

Since observation and measurement of the position and motion of a system, either a physical or a social system, cannot be perfect and are always accompanied with a little uncertainty and error, specifying exactly where a system is and consequently predicting its later behaviour is difficult. Moreover, prediction is increasingly inaccurate with time,
because very small differences affect results (Schuldberg, 1999). Sensitive dependence on initial conditions, one of the main tenets of chaos theory, explains how by feeding back into the system, small initial differences can produce enormous non-linear effects that are not predictable at the outset. This is called Butterfly Effect: if a butterfly flaps its wings in Beijing, it may cause a hurricane in New York (Abraham and Gilgen, 1995; Hayles, 1991; Peak and Frame, 1994; Prigogine and Stengers, 1997). The butterfly effect clarifies how the phenomenon of a tiny action, amplified throughout a system by feeding back, can have unexpected and disproportionate effects.

**Bifurcation**

Nonlinear dynamic systems process constant change and interaction with their environment. A qualitative sudden change in the behaviour of dynamical systems is called a catastrophe (Schuldberg, 1999). A catastrophic change might either condense or amplify a dynamic. It can also lead a system to change into a qualitatively different one, something termed bifurcation. A complex non-linear system contains a variety of attractors which cause the system to resist change (Peat, 1991). In fact, the attractors are basic to the self-organizational structure of dynamic systems. An attractor is found in a system when the different parts of the system work together collectively in order to produce stability. There are different types and forms of attractor—attractors with fixed points, attractors following a limited cyclic path, and multidimensional attractors. An attractor with a fixed point represents a single unique place where the dynamic system tends to go. The motion of a pendulum is described by a periodic or limit-cycle attractor. However, chaotic systems have multidimensional attractors or strange attractors. Systems
with stranger attractors never go “in precisely the same direction or at the same speed through the same place” (Schuldberg, 1999, p. 263). Hence, non-repeating periodicities and irregular patterns of movement are referred to as strange attractor states. A strange attractor “is a state or pattern of activity toward which a system tends to slide of its own accord” (Combs, 1995, p. 28).

As Peat (1991) elaborates, a non-linear system constantly changes from one attractor state to another over time. This transition of chaotic flux may completely reorganize the whole system in an unpredictable manner. When the structure of a non-linear system is threatened at a far-from-equilibrium point by perturbations, disturbances or stress, an attractor draws the trajectories of the stress and bifurcation toward itself. The chaos of the system is unpredictable. Bifurcation can lead the system to a new and more complex order through feedback circles and self-organization, or to disintegration. For example, if climate change were to stress the temperatures enough, the gulf stream would change its direction or even disappear, causing major disturbances throughout the Atlantic. Bifurcation points enable a system to become open to an exponentiation of new possibilities without predicting which of the new possibilities will be realized. The activity around an attractor takes place in a space called phase space. Phase space consists of the range of possible dynamical states of a system.

Fractals

Using computer-generated images of a coastline, Benoit Mandelbrot, the creator of the theory of fractals, modeled the mathematical principle of self-similarity. He showed in
the examination of a coast, long twisting inlets called fiords. Closer examination of inlets revealed that they have their own long twisting inlets. Closer and closer examinations revealed more and more fiords. Therefore, he proposed “the resulting theory of infinity of patternization based on scale in which macro and micro levels replicate one another” (Trygestad, 1997, p. 4). Such self-similar fractal patterns found in nature can be illustrated by visual diagrams in computers. In random patterns in microscopic examinations, there might be seen unity and cohesion on the macroscopic level. In any level of nature, we are faced with endless and varied detail. “One can zoom into a particular tiny piece of detail and explore its inner structure at higher and higher magnifications” (Peat, 1991, p. 170). Therefore, there is no end to the Mandelbort set. Fractal theory shows that small geometric shapes can be combined to make larger, more complex objects. This complex object, in fact, is generated by a simple act of iteration. Fractals are “at one and the same time both highly complex and yet ordered in a very simple way” (Peat, 1991, p. 171), because they are generated by a simple act of repetition or iteration. Fractal theory helps us to enter the world of chaotic motion, turbulence and infinitely complex movements through observation of the patterns of iteration in different scales.

Chaos theory as a metaphor can, it has been suggested, help teachers to understand the classroom as a non-linear, chaotic, and open system (Gleick, 1987), as well as to negotiate uncertainty, instability, and unpredictable outcomes in both teaching and learning. Over decades, educators have sought to reduce irregularity and its resultant uncertainty, and to increase predictability through categorization and standardization.
Curriculum theories have been established with the intent to diminish ambiguity and to amplify efficiency. But bifurcation and attractor states, which derive from the chaos theory, might serve to help teachers re-envision classroom practice, as well as to explain the complexity and nonlinearity of the art making process.
The Dada Movement

In the following, I do not intend to present a history of Dada, but rather to render the climate in which “chance” and “randomness” are taken into account by Dadaists.

Dadaism is the art historical movement which most sentiently presages post-modernism’s interest in play, chance, and the re-framing of art as a discursive practice (Sheppard, 2000). Dadaism is also, for these reasons, an interesting point from which we might begin to reconsider how we teach; it may be that play, chance, and deferral of meaning are concepts that we can bring into the classroom rather than the increasingly obtuse and over-commodified notion of “creativity.”

In 1916, “Cabaret Voltaire” founded by Hugo Ball and Emmy Henning became a centre for artists and intellectuals like Hans Richter and Richard Huelsenbeck from Germany, Tristan Tzara and Marcel Janco from Romania, and Hans Arp from Alsace who had experienced the devastating effects of war and emigrated to Zurich in neutral Switzerland (Pichon, Riha, and Foster, 1996). They organized social evenings in the Cabaret which grew increasingly radical. Regarding the purpose of the activities in the Cabaret, Hugo Ball, in a press announcement on 2nd February 1916, declared,

Cabaret Voltaire. Under this name a group of young artists and writers has been formed whose aim is to create a centre for artistic entertainment. The idea of the cabaret will be that guest artists will come and give musical performances and reading at the daily meetings. The young artists of Zurich, whatever their orientation, are invited to come along with suggestions and contributions of all kinds. (1974, p. 50)

The term Dada was a nonsense term that was supposedly chosen randomly from a dictionary. Reciting this, Ball, in the first manifesto on July 14, 1916, wrote,
Dada is a new tendency in art. One can tell this from the fact that until now nobody knew anything about it, and tomorrow everyone in Zurich will be talking about it. Dada comes from the dictionary. It is terribly simple. In French it means “hobby horse.” In German it means “good-bye,” “Get off my back,” “Be seeing you sometime.” In Romanian: “Yes, indeed, you are right, that's it. But of course, yes, definitely, right.” And so forth.

An International word. Just a word, and the word a movement. (1974, p. 220)

The Dada movement, formed at the Cabaret, was a rebellion against the hegemony of the bourgeoisie; a revolt against civilization and the social, political, and cultural institutions that had caused the war, legitimized it and allowed it to continue (Huelsenbeck, 1920/1967). Marcel Janco (1971) recalls Dadaists’ sense of disgust and deracination:

We had lost confidence in our “culture.” Everything had to be demolished. We would begin again after the tabula rasa. At the Cabaret Voltaire we began by shocking the bourgeois, demolishing his idea of art, attacking common sense, public opinion, education, institutions, museums, good taste, in short, the whole prevailing order. (p. 36)

Dadaists’ objection to reason, which “had begun with the Renaissance, flowered during the Enlightenment, and culminated in modernity in its contemporary configuration” (Sheppard, 2000, p. 174) was the basis of a critical agenda. Dadaism radically attacked the dualistic predisposition of modern metaphysics; the division of thought and the corporal world; the separation of mind and body; “reason is a part of feeling, and feeling is a part of reason” (Arp, cited in Richter, 1964/1978, p. 60).

The Dadaists, as Hans Richter points out, attempted to re-establish their own humanity. For them, art was a cure for the brutality of the time and it was “an adventure if it liberated humanity” (Richter, 1964/1978, p. 49). Dadaists respond to the “insanity” of the times with the “senselessness” of art. Arp, in Dadaland, defined this position:

In Zurich, in 1915, disgusted by the butchery of World War I, we devoted ourselves to the Fine Arts. Despite the remote booming of artillery we sang,
painted, pasted, and wrote poetry with all our might and main. We were seeking an elementary art to cure man of the frenzy of the times and a new order to restore the balance between heaven and hell. This art rapidly became a subject of general disapproval. It was not surprising that the “bandits” were unable to understand us. In their puerile megalomania and power-madness, they demanded that art itself must serve to brutalize mankind. (1972, p. 232)

The artists and intellectuals who gathered in Cabaret Voltaire wished for a salvation which could only be attained by rejecting what they saw as the rationality of the war and by embracing anarchy and the irrational. Dada’s 1918 *Final Dissolution*, as Richter explains, was the representation of Dada’s revolution:

> everything must be pulled apart, not a screw left in its customary place, the screw-holes wrenched out of shape, the screw, like man himself, set on its way towards new functions which could only be known after the total negation of everything that had existed before. Until then: riot, destruction, defiance, confusion. The role of chance, not as an extension of the scope art, but as a principle of dissolution and anarchy. In art, anti-art. (1964/1978, p. 48)

Everything must be pulled apart; everything that had existed before must be negated in order to demarcate a way towards new functions and meanings. In his manifestos, Tzara (1918/1967) asserted,

> I destroy the drawers of the brain and of social organization: spread demoralization wherever I go and cast my hand from heaven to hell, my eyes from hell to heaven, restore the fecund wheel of a universal circus to objective forces and the imagination of every individual. (pp. 78-79)

Hence, the meaning of what was called art had to change. Art became a new form of life with all its random incidences and joys:

> When art is brought into line with everyday life and individual experience, it is exposed to the same risks, the same unforeseeable laws of chance, the same interplay of living forces. Art is no longer a “serious and weighty” emotional stimulus, nor a sentimental tragedy, but the fruit of experience and joy in life.” (Richter, 1964/1978, p. 49)
Indeed, Dadaists were against everything. Dada was a movement without a program; it was against all programs. Such a rejection and negation drove Dadaists to acknowledge “rebellion for rebellion’s sake; to an anarchistic negation of all values, as a self—exploding bubble” (Richter, 1964/1978, p. 35). Dadaists wanted absolute freedom; freedom from rules, reason, and their ideal of critical praise entailed “the absence of any kind of opportunism, which in any case could have served no purpose, brought [them] all closer to the source of all art, the voice within [themselves]” (Richter, 1964/1978, p. 50).

The anarchistic negation and the demand for absolute freedom enabled the Dadaists to “unfold in all directions, free of aesthetic or social constraints” (Richter, 1964/1978, p. 34). Tristan Tzara in his Dada Manifesto of 1918 declared,

I write a manifesto and I want nothing, yet I say certain things, and in principle I am against manifestos, as I say certain things, and in principle I am against manifestoes, as I am also against principles (half-pints to measure the moral value of every phrase too too convenient; approximation was invented by the impressionists). I write this manifesto to show that people can perform contrary actions together while taking one fresh gulp of air; I am against action; for continuous contradiction, for affirmation too, I am neither for nor against and I do not explain because I hate common sense. (1918/1967, p. 76)

Dadaism was a conscious break with rationality, intended to proliferate a new form of art. Dadaists looked for freedom from preconceived ideas about processes and techniques which led them “beyond the frontiers of individual artistic categories” (Richter, 1964/1978, p. 57). In other words, Dada seemed to be anarchic, but for the proponents of Dadaism it was not at all so. Richter writes, “On the contrary it was something meaningful, necessary and life-giving” (1964/1978, p. 58). Dada was a movement that declared itself against Art. It rejected the prevailing artistic aesthetic standards. Richter believed that “the absence of any ulterior motive enabled [them] to listen to the voice of

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9 Opposition, rejection and protest against whatever was accepted were central to Dada movement. Richter recalls that after disappearance of the tension between necessary opposites, Dada disintegrated.
the ‘Unknown’- and to draw knowledge from the realm of the unknown” (p. 50). The negation and rejection of any kind of rules in art resulted in fragmentation or destruction of all artistic forms. Ball’s diary entry of 5 March 1917 indicates his explicit attention to the annihilation of prevailing artistic forms:

The human figure is progressively disappearing from pictorial art, and no object is present except in fragmentary form. This is one more proof that the human countenance has become ugly and outworn, and that the things which surround us have become objects of revulsion. The next step is for poetry to discard language as painting has discovered the object, and for similar reasons. Nothing like this has existed before. (cited in Richter, 1964/1978, p. 41)

In sum, Dada was about breaking the structure, the rules, and the boundaries. Tristan Tzara in his Dada Manifesto of 23 March 1918 comprehensively describes the Dadaist movement:

DADA DOES NOT MEAN ANYTHING. … Cubism was born out of a simple way of looking at objects: Cezanne painted a cup 20 centimetres below his eyes, the cubists look at it from above, others complicate appearance by perpendicular section and arranging it consciously on the side. … The futurist sees the same cup in movement, a succession of objects one beside the other, and maliciously adds a few force lines. This does not prevent the canvas from being a good or bad painting suitable for the investment of intellectual capital. The new painter creates a world, the elements of which are also its implements, a sober, definite work without argument. The new artist protests: he no longer paints (symbolic and illusionist reproduction) but creates—directly in stone, wood, iron, tin, boulders—locomotive organism capable of being turned in all directions by the limpid wind of the momentary sensation. … I detest greasy objectivity and harmony, the science that finds everything in order. Carry on, my children, humanity … Science says that we are the servants of nature: everything is in order, make love and bash your brains in. … Let each man proclaim: there is a great negative work of destruction to be accomplished. We must sweep and clean. Affirm the cleanliness of the individual after the state of madness, aggressive complete madness of a world abandoned to the hands of bandits, who rend one another and destroyed the centuries. (1918/1967, pp. 77-81)

The Dadaists’ tendency toward celebration of contradiction and advocacy of nonsense and anti-everything was accorded with the name of their movement, Dada. “Dada means nothing. … Thought is produced in the mouth” (Richter, 1964/1978, p. 35). Whether or
not the word Dada is a randomly chosen word, the element of chance was definitely important in Dadaism. Dada artists freed themselves from old aesthetic habits and the rule of causality by welcoming chance in the creative process. Dada collages were compositions of objects usually found by chance, as Dada poems were nonsense combinations of random words.

The tension between art and anti-art, volition and anti-volition, etc., as central to Dada, took various forms of expression with differing artists in different countries. It was a movement full of contradictions and complexities to the extent that some historians describe it as a “transitional stage” in history of arts.

**Dada and the Arbitrary**

Dada, unlike the other artistic styles, had no unified formal features and included a variety of artists and intellectuals with differing ideas. Despite of all these various tendencies, the experience of chance was central in Dada and marked Dadaism off from the other artistic movements. In describing the spirit of playfulness, Watts (1980) explains that play for Dadaists is the realm in which chance thrives:

> The sprit of playfulness with which Dada knocked the security of predictability out from under its bourgeois spectators also provided a flexible, unrestrictive framework in which experiments with chance could flourish. (p. 4)

Arp’s experience in “Gesetz des Zufalls” is regarded as the beginning of the formative use of accident. Richter in his book *Dada: Art and Anti-art* (1964/1978) tells the story of how Arp first came to use chance techniques and writes,

> Dissatisfied with a drawing, he had been working on for some time, Arp finally tore it up, and let the pieces flutter to the floor of his studio on the Zeltweg. Some
time later he happened to notice these same scraps of paper as they lay on the
floor, and was struck by the pattern they formed. It had all the expressive power
that he had tried in vain to achieve. How meaningful! How telling! (p. 51)

Chance became Dada’s trademark, and it was recognized as a new stimulus to artistic
creation. For Dada, chance was the favourite weapon of the twentieth century against ‘the
seduction to always the same kind of sentences”’ (Waldrop, 1971, p. 64). Watts (1980),
in Chance: A Perspective on Dada, contends that Dadaists used chance as a weapon
against logic. Chance for Dadaists was usually equal to “simultaneity.” They worked with
no logically determined accidental effects.

Dadaists turned to chance as a way to protest dominating order and the reason that had
led to war. In fact, for Dadaists, using formative accidents was not only a protest against
modern reason but a critique of its aesthetics. The adoption of chance, writes Richter,
“restore[d] to the work of art its primeval magic power” (1964/1978, p. 59). Dada artists
believed that aesthetic habits should be broken. For them, Dada was a protest against the
traditional notion of artistic mastery and technical excellence. The Modernist notion of
decision making, controlling the process of creation by the use of aesthetic orders, and
harmony was replaced by randomness, by the exploitation of chance events, and by
celebrating chaos and anarchy. Dada visual artists believed that the law of chance
embraced all other laws (Richter, 1964/1978). For them, chance was “the depths from
which all life arises, can only be comprehended by complete surrender to the
Dadaists to a genuine mental and emotional experience that gave them wings to fly. It
provided “a new vantage point for imagination” (Watts, 1980, p. 1). “Absolute

The element of chance for Dadaists was the “unconscious mind” (Richter, 1964/1978, p. 57). Dada wished to elude modernist notions of conscious control. Chance for Dadaists was the voice of the unconscious, a way to shun the rigidity of straight-line thinking. Richter asserts that the adoption of chance by Dada artists had also a secret purpose: to restore to art a primeval magic and its power and to invoke the immediacy that “it had lost through contact with the classicism of people like Lessing, Winckelmann and Goethe” (1964/1978, p. 59). For Dadaists, coincidences of sound or form were the incidents that revealed the connection of apparently unconnected events. Realizing the importance of the chance coincidences in their lives, Dada artists noticed that the role of chance became greater as they became more conscious of it. Influenced by Carl Gustav Jung, Richter states that for recognizing the chance, man would be conscious of it, to become aware of “this continuous act of creation, and to achieve, through mediation, intuition and concentration, complete identity with the orderedness which has no cause” (1964/1978, p. 57).

Although Dadaists established a movement characterized by nihilism, deliberate irrationality, disillusionment, chance, and randomness (Hancock, 1985), their first move to employ chance did not occur in a vacuum (Watts, 1980). At the time of the Dadaists, chance was the preoccupation of the time, and scholars in various disciplines had started to bring chance into account. Challenging the principles of deterministic constructs of the
physical universe, the theory of quantum physics saw chance as a non-mechanistic, a-causal method for interpreting the universe. Freud’s notion of the “unconscious mind” and Jung’s idea of the “dreamlike” led to the development of a concept of chance as a mental phenomenon. It was in this climate that Dadaists like Paul Kammerer attempted to develop a theory around Jung’s idea of “dreamlike” associations, “to discover the laws which govern acausal relationships” (Richter, 1964/1978, p. 57). For Dadaists, Richter cites, “chance was the ‘unconscious mind’ that Freud had discovered in 1900” (p. 57). In his diary, he writes,

We were concerned with chance as a mental phenomenon. It was not until later that I discovered that psychologists, philosophers and scientists were facing the same intractable problem at the same time. (p. 56)

Furthermore, in the art world prior to Dada, Cubists and Futurists had already initiated certain experimental techniques which were developed by Dadaists later. They had attempted to limit the artists’ role in disposing the elements in their collages. The use of collage and juxtaposition of elements “based on principles of simultaneity rather than logical continuity” (Watts, 1980, p. 1), and the acceptance of unaesthetic subject matter was the heritage left by the Futurists and Cubists for the Dada movement. But, the Dadaists’ receptive approach towards chance in the creative process was their unique contribution to the art world. Cubist and Futurists works with rectilinear order representing a structured, constructed world were too secure for Dada artists. Although, chance had been recognized in Western art before Dada, Dada explored the application of chance in a way that differed from other applications. Chance had previously been considered subject matter, but Dadaists used it as a compositional principle (Watts, 1980).
Certainly, there was a diversity of possible applications of the principle of random arrangement among Dada artists. Some of them, during their exercises with chance, faced a conflict. On one hand, they attempted to liberate themselves from the causality which led them to adopt chance in their works, and to dedicate themselves to anti-art. On the other hand, they were aware that chance “could never be liberated from the presence of conscious artists” (Richter, 1964/1978, p. 59). Hence, Dadaists followed two paths in their application of chance:

1) using chance as a correspondence between the conscious and the unconscious and achieving balance,

2) applying chance unrestrictively and following the a-logical order which would emerge.

The distinction between these two paths was an important one which divides artists, to some degree, between a somewhat mystical approach and a more ontological one:

Throughout the Dadaist experiments with chance one encounters two tendencies: first, the attempt to assure indeterminacy regardless of the level of the new, a-logical order that emerges, and second, the interpretation of chance as an access to unknown, universal correspondences, to a universal order beyond any construct posited by Western casual and logical thought. On one side, one might find Picabia, Duchamp and Tzara, and on the other, the mystically inclined Arp, Ball, Richter, and to some degree, Ernst. The latter-day Dadaist Kurt Schwitters, who kept chance at the level of the selection of materials and insisted upon the artist’s control in the combining, or forming, of the individual elements, cannot be easily placed on either side of this diving line. (Watts, 1980, p. 4)

For some artists such as Arp, Richter, and the others in Zurich, the conflict “did not take the form of a contradiction. One aspect did not cancel out the other, they were

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10 Richter writes, “we were all fated to live with the paradoxical necessity of entrusting ourselves to chance while at the same time remembering that we were conscious beings working towards conscious goals. This contradiction between rational and irrational opened a bottomless pit over which we had to walk” (p. 61).
complementary. It was in the interplay of opposites, whether ideas or people, that the essence of Dada consisted” (Richter, 1964/1978, p. 59). They tried to find a new unity combining chance and design. They sought method and discipline to control their spontaneity to attain a balance between conscious and unconscious or, as Arp called, a “balance between heaven and hell” (Arp, 1972, p. 232). Arp, one of the most consistent advocates of the use of chance, exploited chance elements while he “made conscious use of his eye and brain to determine the final shape” (Richter, 1964/1978, p. 60). Yet, for Tzara, the conscious self did not have any part in the process. For Arp, the “balance” between conscious and unconscious was fundamental, while Tzara adhered to the idea of “Unknown” and “left the task of selection to Nature” (Richter, 1964/1978, p. 60). Tzara exercised chance and chaos without any control:

Order = disorder; ego = not-ego; affirmation = negation: the supreme radiations of an absolute art. Absolute in the purity of a cosmic, ordered chaos, eternal in the globule of a second without duration, without breath without light without control. (Tzara, 1918/1967, p. 78)

Dada visual artists painted with all kinds of material, scissors, adhesives, plaster, sacking and made collages and montages. Janco integrated “unregarded objects Nature happened to place in his path” (Richter, 1964/1978, p. 55) in his abstract sculptures. Schwitters used materials like wire, thread, feathers, potsherds in his works. Andre Masson made

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11 According to Richter, art and anti-art completed each other. He believed that Dada artists’ opposing attitudes belonged together. For him, “The difficulty was semantic rather than real.” He writes, “The ‘fault’ lies with language, and as language is the tool of thought, the fault lies with our way of thinking” (1964/1978, p. 60).

12 In describing what he did in *Visionary Portraits*, and his problem with chance, Richter writes, “the completely spontaneous, almost automatic process by which I painted my *Visionary Portraits* (1917, Pl.VII) no longer satisfied me. I turned my attention to the structural problems of my earlier Cubist period, in order to articulate the surface of my canvases for the sake of simplicity I chose ‘Heads’ made up of black and white surfaces balanced against each other” (1964/1978, p. 61).
sand painting by concentrating and dancing around the prepared canvas and letting the sand dribble from their swinging hands.

In literature, the story was quite different from the visual arts (Watts, 1980). For visual artists, chance was the actual central experience, while thinkers like Döhl were more inclined to place equal importance on laugher and play in literature.¹³ He believed that the principle of chance in Dada derived from the visual arts rather than from literature. Richter deemed that since “words bear a burden of meaning designed for practical use,” they do “not readily submit to a process of random arrangement” (Richter, 1964/1978, p. 54). However, Tzara attempted to bring chance into his experiences with literature:

He cut newspaper articles up into tiny pieces none of them longer than a word, put the words in a bag, shook them well, and allowed them to flutter on to a table. The arrangement (or lack of it) in which they fell constituted a “poem,” a Tzara poem, and was intended to reveal something of the mind and personality of the author. (Richter, 1964/1978, p. 54)

As noted, two tendencies are recognizable among the Dadaists who dealt in chance. Some, such as Arp, Ball, and Richter, attempted to attain a balance between the conscious and the unconscious, between order and chance. The others, such as Tzara, Picabia, and Duchamp, forced chance to assure indeterminacy and a-logical order (Watts, 1980). Among the first group, Arp was one of the most prolific and exhibited Dada artists. He is

¹³ It was very important for Dadaists to expose the “pose of morality” of the bourgeoisie and to assert that “idealism” is ridiculous. They laughed at everything and everyone, as well as making fun of themselves. Arp reports that “Although dinner for most of us was a symbolic act, an incredible amount of malice and stupidity was reduced in an instant to dust by our tremendous laughter.” Dada laughter was considered an essential activity of the group in Zurich. In this respect, Richter writes, “We were known, to layman and experts alike, more by our roars of laugher than by the things we were really doing. Raised for above the bourgeois world by the power of our inner and outer vision … we laughed and laughed. We destroyed, we insulted, we despised — and we laughed. We laughed at everything. We laughed at ourselves as we laughed at the Emperor, King and Country, fat bellies, and baby-pacifiers. We took our laughter seriously; laughter was the only guarantee of the seriousness with which, on our voyage of self-discovery, we practiced anti-art” (Richter, 1964/1978, p. 64-65).
known as the first Dadaist to exploit chance in his work. Although Arp, as a visual artist, was seriously interested in chance in some periods of his artistic career, the main body of his work did not address chance configurations. Hancock (1985) sees this deviation in Arp’s work as the disparity between development and chaos: “The swelling organic curves of his reliefs and sculptures convey the burgeoning forces of life, while the chance collages seem to admit destruction and chaos into the realm of art” (p. 48). Though a Dadaist, Arp’s work differed greatly from the Dadaists such as Duchamp in New York. Dada for Duchamp was more about chance and found objects. Watts (1980) believes that Arp was never “as systematic as Duchamp in devising a system for the inclusion of aleatory influences in the work of creation” (p. 51). Duchamp was fascinated with everyday, mass-produced objects and was particularly interested in their implications for the artistic activities.

In the following, I review the experiences of two outstanding Dada artists, Hans Arp and Marcel Duchamp, with chance. Each artist represents one of the Dada tendencies (discussed above) toward the application of chance. Here, I do not intend to present a comprehensive account of Arp’s and Duchamp’s artistic life. Rather, I outline their experiments with chance operations in their visual works only in order to render the social/political/artistic significance of the notion of chance for them.
Hans (Jean) Arp

Hans (Jean) Arp (1887-1966), a visual artist and a poet, was one of the founding members of the first Dada group in Zurich in 1916. He had dual nationalities, French and German, and dual names, Hans and Jean. He studied in both France and Germany, and traveled and exhibited all over Europe. Before World War I, inspired by Kandinsky, and a belief in the spiritual potential of art, Arp explored the expressive potential of abstraction. His abstractions were mostly based on nature and organic shapes. During World War I, Arp moved to Zurich where he became one of the major figures of Dada. At the beginning, he was more concerned about order, simplicity and anonymity (Richter, 1964/1978) than the operation of chance configurations. Ball in his diary entry of 13 April 1916 describes Arp and writes,

Arp speaks out against the bombast of the gods of painting (the expressionists). He says Marc’s bulls are too fat; Baumann’s and Meidner’s cosmogonies and mad fixed stars remind him of the stars of Bölsche and Carus. He would like to see things more ordered and less capricious, less brimming with colour and poetry. He recommends plane geometry rather than painted versions of the Creation and the Apocalypse. When he advocates the primitive, he means the first abstract sketch that is aware of complexities but avoids them. Sentiment must go, and so much analysis when it occurs only on the canvas itself. A love of the circle and the cube, of sharply intersected lines. He is in favour of the inclusion of mechanical exactness. I think he likes Kant and Prussia because (in the exercise yard and logic) they are in favour of the geometrical division of spaces. In any case, he likes the Middle Ages mostly for their heraldry, which is fantastic and yet precise and exists in its entirety, right to the last really prominent contour. If I understand him correctly, he is not concerned so much with richness as with simplification. Art must not scorn the things that it can take from Americanism and assimilate into its principle; otherwise it will be left behind in sentimental romanticism. Creation for him means separating himself from the vague and the nebulous. He wants to purify imagination and to concentrate on opening up not so much its store of images but what those images are made of. He assumes here that the images of the imagination are already composites. The artist who works from his freewheeling imagination is deluding himself about originality. He is using a
material that is already formed and so is undertaking only to elaborate on it.\textsuperscript{14} (1974, p. 53)

Prior to coming to Zurich, influenced by Cubism and Expressionism, Arp had experienced the possibilities of non-figurative forms in his collages (Robertson, 2006). His \textit{Papier collé} (1915) shows his propensity in the combination of Cubist aesthetics, in the choice of materials, and was Expressionist in composition. However, he soon shifted his medium to polychrome relief. In Zurich, he continued to use commercial papers in his collages, as did Picasso and Braque, but unlike them, he used fewer materials, relieving a major decision of visual elements such as color, tone, etc. In his work, \textit{Abstract Configuration}, (1915), he arranged geometric shapes on a wood panel in a quite free composition. The same design was followed in \textit{The Burial of the Birds and Butterflies} (1916-17): three levels of wood with exposed screws were composed and the irregular forms were painted in a restrained color range (black, dark red, and white-speckled black) without any attachment to a rectangular support. He continued this approach in his \textit{Dada Relief} (Hancock and Poley, 1987). He also made collages of pieces of paper such as \textit{Geometric Collage} (1916) using his cut-out forms (more or less regular squares and rectangles) of gray, blue, and brown wrapping paper (Hancock, 1985). He later destroyed the majority of his collages constructed with Cubist angularity. In 1917, he created his \textit{Reliefs} which were situated between the “object” and the sculpture proper of his late works. Building on his investigations, and eager to find ways to detach himself from modernist rationalism and traditional aesthetic decision-making, he started to examine the possibilities of operations of chance configurations (Döhl, 1996). His famous collages,

\footnote{Ball’s description of Arp clearly renders that he still is influenced by Cubism and Expressionism and works in modernist tradition. Later on with his experimentation in chance, he distances from this tradition and stands, like the other Dadaists, where, as Sheppard asserts, in between modernism and post-modernism.}
According to the Laws of Chance, (Figure 7) coincided with the emergence of Dada in 1916. In 1930, he turned to chance again by creating his *Papiers déchirés* (torn-paper). They were collages without a geometric structure, and were composed mostly of his earlier drawing and prints, torn, rearranged and pasted on a support (Hancock, 1985). They represented a very intensive expression of the disorder that his Dada chance collages exhibited several years earlier.

Arp is known as the first Dadaist who included chance in the process of artistic creation. His *Das Gesetz des Zufalls* (1916) is claimed to be the beginning of operations with chance configurations in the Dada period. Arp’s experimentation in creating chance collages has been described in two distinct ways: 1) Richter’s famous story of how Arp made these collages: once Arp became frustrated with a collage he was working on, he
tore the work up and threw it on the ground (Richter, 1964/1978); and Hugnet’s explanation, which Hancock (1985) recognizes as more plausible than Richter’s. Hugnet (1932/1967) in his *Dada Spirit in Painting* writes,

> [Arp] also experimented with chance, putting on a piece of cardboard pieces of paper that he had cut out at random and then coloured: he placed the scraps coloured side down and then shook the cardboard; finally he would paste them to the cardboard just as they had fallen (p. 134).

In Hugnet’s narrative, it seems that Arp began with chance by tearing up paper and randomly scattering the pieces on the support and then intentionally refined the chance arrangements of the fallen pieces before pasting them, while, according to Richter’s story, the whole process was based on chance, and no features of the work were deliberately determined. However, as Hancock (1985) notes, “There is no record of Arp confirming either account of his method” (p. 54).

In Zurich in 1915, Arp instigated his “papiers collés” with accidental “objects,” rudimentary, irrational, useless, broken, found at random (Hancock, 1985). He attempted to abandon a fully artistic control in his collages. He aimed to develop a method resulting in a natural and organic art. Hence, he began to make collages of torn papers. In *Elementary Construction according to the Laws of Chance* (1916) he worked with tearing scraps of paper, dropping them on a larger sheet of paper to form a new pattern and pasting the randomly fallen pieces. His *Collage Arranged According to the Laws of Chance*, completed in 1916, displayed a random pattern of squares, evoking evasion of the rational world. This collage, as well as *Squares Arranged according to Laws of chance* represents accidental arrangement of cleanly cut paper elements. “Other chance collages have shapes with irregular torn outlines” (Hancock, 1985, p. 51). Later, Arp
created collages out of his previous works—drawings, engravings, serigraphs, gouaches. He tore them up and kaleidoscopically scattered them before gluing them on a larger sheet. Arp exploited the same technique in his poems, with words and phrases cut from newspapers. He described this process of his poetic formation and wrote,

Words, slogans, sentences, which were selected from daily newspapers and especially from advertisements in them, formed the basis of my poems in 1917. I often selected words and sentences from newspapers with my eyes closed by marking them with a pencil. I called these poems “arpades.” … I interwove the words and sentences selected from the newspapers with freely improvised words and sentences of my own. (cited in Döhl, 1996, p. 117)

In this period, Arp’s collages, as he claimed, were made completely according “the law of chance.” These collages did not entail a formula and they were not intended to represent objects. They were based simply on chance.

The chance method offered Arp a freer and more suggestive random arrangement, and served to free him from traditional artistic decision-making. The rectilinearity of his forms, which guaranteed a regular design, was diminished by the imbalance produced by chance. Direct intervention of chance, as Arp desired, reduced astoundingly the role of the artist and the determination of a human plan. The incorporation of chance operations allowed removal of the artist’s control upon the creative act. Chance, in his collages, was not only to admit accidentality into his works but also to further acknowledge their essential order. For Arp, chance was a means of access to the unconscious and to the basic ordering processes of the natural world. As he wrote, “these works, like nature, were ordered ‘according to the law of chance’” (Arp, 1948, p. 40). He aimed to create works without human intervention, that would be closer to nature, to the extent that he
even substituted a paper cutter for scissors to make his work independent from “the life of the hand.”

In fact, Arp had two agendas in exploring the operations of chance in his poetry and visual art:

1) an opposition to the arrogant rationality epitomized in European civilization;

2) a critique of the traditional concept of artistic mastery and technical excellence.

Using chance, the random and the accidental, was a way to resist modern reason with its notion of conscious control; reason had failed to prevent the brutality of war. As Arp stated, “Dada aimed to destroy the reasonable deceptions of man and recover the natural and unreasonable order” (Arp, 1948, p. 48). Arp attempted to confront the “insanity” of the times with the “senselessness” of art. He wrote, “Dada is for the senseless, which does not mean nonsense. Dada is senseless like nature” (Arp, 1948, p. 48). He, along with the other Dadaists, attempted to revolt against modernist reason with an art that promoted imagination. Giedion-Welcker (1957) notes that Arp belonged to the harried and menaced generation that anticipated the defeat of the idea of rule by force, and at an early date recognized the demonic effects of the power neurosis and the divorce between technical ingenuity and wisdom. Arp felt spiritually akin to those “outsiders,” who were … in rebellion against the prevailing moral standards and the “official” taste; at the same time they derided and parodied their own complicated and pointless everyday life … They radically repudiated “universal progress”; according to them, culture was to be found among the so-called barbarian primitives, and there was real barbarism in our over-organized, bureaucratic and mechanized civilization. They summoned the elementary force of “thought sprung from fantasy” in opposition to a view of the world originating in so-called common sense and satirized the latter in poetic and pictorial manifestations. (p. VII)
Arp and the other Dadaists attempted to replace the reasonable and logical illusion of a man-made, well-ordered mechanized civilization with a natural and unreasonable order. In his *Notes from a Dada Diary*, he writes,

> Art is a fruit growing out of man like the fruit out of a plant like the child out of the mother. While the fruit of the plant grows independent forms and never resembles a balloon or a president in a cutaway suit the artistic fruit of man shows for the most part a ridiculous resemblance to the appearance of other things. Reason tells man to stand above nature and to be measure of all things. Thus man thinks he is able to live and to create against the law of nature and create abortions. Through reason man became a tragic and ugly figure. (1932/1967, p. 222)

Arp believed that modernity, represented by logic and reason, undertakes an unreal and inhuman quality. He, alongside the other Dadaists, attempted to connect to humanity and nature. Chance, as an important aspect of the forces of nature, could assist Arp to replace human reason and logic. He also used organic forms that contrasted the social values of the time, with its celebration of rational humanity as standing over and above nature.

Furthermore, Dada, for Arp, was a way to stand against conventional art. It was a protest against traditional aesthetic values and artistic decision-making. He believed that with Dada “the golden rule and other valuable rules have vanished without leaving a trace” (1932/1967, p. 224). Arp argued that “man will not let himself be standardized” (1932/1967, p. 224). Criticizing the tradition of aesthetic standards, in the introduction to the exhibition of his *papiers collés* held in the Galerie Tanner in 1915, he wrote,

> The illusionist sculptures of the Greeks, the illusionist painting of the Renaissance drove man to over-estimate of his own nature, led to division and discord. Instead of being of use to us, like our own hands, the hands for our brothers became our enemies. Anonymity gave way to celebrity and the object d’art. Wisdom died. Representation is falsification, theatre, acrobatics. Nobody disputes that there are more or less gifted acrobats. Art, however, is reality, and everyday reality must become a clear sound above the specific. (cited in Robertson, 2006, p. 33)
The laws of chance were availed by Arp in his investigation for a “new aesthetic order” and an “elemental” art (Döhl, 1996, p. 113-114). With chance, the artistic process ventured away from the aesthetic and visual aspect. In her discussion of Arp’s chance collages, Hancock (1985) elucidates how chance lets Arp liberate himself from accepted visual standards in the construction of an artwork:

Far from having the effect of physical constructions, the chance compositions disregard weight and gravity. In each case, the elements tilt one way or the other, and their corners refuse to line up; they look as if they floated apart from a firm alignment. Those with torn elements give an especially strong feeling of irregularity and accident. Tearing up paper collages also gave Arp a means of rejecting his fine arts training and the emotional expressiveness permitted by virtuoso paint handling. Each collage implies, but does not quite adhere to, a horizontal and vertical grid. The deviation from a presumed grid subtly suggests a disintegration of order, and the impression of weightless drifting in space provokes thoughts of an infinite number of other possible formations. (p. 51)

Moreover, the application of chance diminished the artist’s conscious control over the work he was creating. By submitting everything to chance, the artistic creation was “experienced only in a total surrender to the unconscious” (Arp, cited in Lipsey, 1988, p. 121). Bois (1983) identifies this period of Arp’s experiment with chance configuration as the time of seeking impersonality in his art. He states,

By leaving to chance the arrangement of monochromatic geometric surfaces on a neutral ground, Arp attempted to “banish compositional choice.” He even used a paper cutter, “since scissors too readily betray the presence of the hand.” (Bois, pp. 41,43)

For Arp, accidentally chosen materials offered the possibility of freedom from traditional aesthetic values. He used printed papers and printed fabrics which chance placed before him. He admired Kurt Schwitter’s “found art,” which combined pieces of wood, paper, metal and other garbage to form low-relief paintings. However, the application of chance for Arp was not restricted to material selection. He went further and replaced the
traditional notion of structure, order and arranging forms with “the law of chance.” In this regard, he writes,

In 1915, Sophie Taeuber and I painted, embroidered, and did collages; all these works were drawn from the simplest forms and were probably the first examples of “concrete art.” These works are Realities, pure and independent, with no meaning or cerebral intention. We rejected all mimesis and description, giving free rein to the Elementary and Spontaneous. Since the arrangement of planes and their proportions and colors seemed to hinge solely to chance, I declared that these works were arranged “according to the law of chance,” as in the order of nature, chance being for me simply a part of an inexplicable reason, of an inaccessible order.—Around the same time Russian and Dutch painters were producing works rather close to ours in appearance but with totally different aims. They were really a tribute to modern life, a glorification of the machine and technology. Although treated abstractly, they always contained some residue of naturalism and deception. (Arp, 1972, p. 232-233)

Being aware of the intervention of random events in life and, similarly, in the creative process, Arp welcomed chance and his work was open to the intervention of random events. He celebrated the printing mistakes and additions and “changes imposed upon his work from the outside” (Watts, 1980, p. 52). Printing mistakes for Arp could be “another starting point for the constant process of variation that he carried out on all his work” (Watts, 1980, p. 52).

At the beginning when he sought after the absoluteness of chance, as Bois points out, Arp’s “chance [was] not very different from the mystics’ divine grace” (Bois, p. 43). Arp, himself writes,

Chance in the art of today is not there by accident but rather is a gift of muses. This gift of the spirit will fall only to the dreamers. … without chance art will turn into nature in the blink of an eye, as it does in the painting, the beautiful paintings, by many a Tachiste artist, works that have come into existence without the gift of the muses and that end in Nirvana. (Arp, 1960/1987, p. 12)
The only condition for access to these muses is to be open to chance occurrences, to wait for them, to hunt them:

The dreamer with open eyes will, for example, be unexpectedly led by chance to Henry Rousseau’s painting, *Appollinaire and His Muse*. In this painting nothing is accidental. Here the realm of the spirit becomes tangible; it becomes the chance that befalls us. (Arp, 1960/1987, p. 12)

For Arp, art is the representation of reality but it is not representing either the subjective or the objective reality, but a mystical reality. Hence, chance configurations are the means that help artists to approach such a reality:

Our works are structures of lines, surfaces, forms, colours. They attempt to approach reality. They hate artifice, vanity, imitation, tight-rope walking. To be sure, there are tight-rope walkers of varying talent. But art should lead to the spiritual, the real. This reality is neither objective reality, nor the subjective reality of thought, that is ideality, but a mystical reality, toward which we stand in the relation of the eye in the following Neoplatonic image: “It removes itself from light in order to see the darkness, but it does not see; for it cannot see the darkness when there is light, but without light it does not see; by not seeing, it sees the darkness in the way that is natural to it. (Arp, 1948, p. 36)

Although Arp attempted to access the absolutely pure accidental in his compositions, he was not able to deny that conscious arrangement played an important role. Underlining the role of the artist and his compositional choice, Bios writes,

In his constellations of black on white … chance intervened only at the moment the paper (which does not always obey the hand’s injunction) was torn—whatever the artist may have said to the contrary. Once his stock of fragments had been constituted, Arp could arrange them at will on a neutral support prepared with glue. There are visible alternations in these works, indicating that the positions of certain fragments were changed; compositional choice has hardly been abandoned. (1983, p. 43)

Hence, Arp used chance in his work as a way of evading traditional composition and as a method of beginning an artistic work, but not in an avoidance of composition itself. Mistakes and errors offered Arp new points of departure which he then controlled to develop the composition. For Arp, chance “was a stimulus of future variations, not … a
‘canned,’ inalterable result” (Watts, 1980, p. 52). Bois (1983) addresses Arp’s play between chance and control and writes,

Arp dreamed of an anonymous art and spoke of such things as automatism and the unconscious; his project was to wed an absolute absence of chance in the execution of chance in their composition—an ideological contradiction from which he escaped by associating the use of chance with vitalism (p. 43).

Hancock (1985), in her Arp’s Chance Collages, notes that the limits on his use of chance are apparent on examination of the works, as Alastair Grieve and William Rubin have pointed out. In both the Collages Arranged According to the Laws of Chance and the Torn Papers, the homogeneity of collage elements, the care with which they are pasted, the absence of overlapping, and the harmonious balance of the compositions attest to Arp’s deliberate aesthetic choices. Unlike other artists who tried to direct and control chance happenings during the artistic process, Arp attempted to tip a balance between accident and deliberation. Hancock adds that Arp’s work “jar[s] our ‘reasonable expectations’ and speak[s] eloquently about a dialectic between accident and intention” (p. 48).
Marcel Duchamp

Dadaism was born in Zurich and soon became the name of groups of artists and poets in New York, Berlin, Hannover, Cologne and Paris. In New York, the Dada movement embraced a group of artists who circled round the Stieglitz gallery, and who shared many ideas similar to those of the Zurich Dadaists (Richter, 1964/1978). The New York Dada movement, like Zurich Dada, was full of mockery and humour, but the New York branch was free of the European explicit political and social criticism and anger (Lippard, 1971). Artists such as Francis Picabia, Marcel Duchamp, Edgar Varese, Albert Gleizes, Man Ray, etc. adopted Dada’s anti-art attitude and became a part of one of the most significant movements of the historical avant-garde. Among New York Dadaists, Duchamp became the star soon after his arrival to New York in 1915 (Richter, 1964/1978). New York Dadaists, particularly Duchamp with his admiration for machines and mass production, protested traditional aesthetic and promoted a kind of impersonal art which was against the prevailing notion of art.

Duchamp was born in France into a family that embraced the arts: Gaston, the oldest, studied law, but chose painting and became a painter; the second, Raymond, trained in medicine, and became a sculptor; and Suzanne, their sister, was a painter. Marcel chose to pursue a career in painting when he was seventeen. Between 1904 and 1913, he was painting in Paris. His work in this period is strongly influenced by Cubism and Futurism (Watts, 1980). In 1913, he went to New York for the first time.
The work and ideas of Marcel Duchamp, as one of the most influential post-war artists in the Western art world, have aroused many controversies over the years. There is a wide range of opinion about his way of challenging and redefining the notion of traditionally privileged art in twentieth century. Duchamp, with his creative activities, his “reconstructions and representations of objects and bodies” (Ades, Cox, and Hopkins, 1999, p. 6), and his questions of timeless essential art has been treated diversely by artists and critics. Thousands of books and articles attempt to interpret, or to criticize his work. And, of course many remain to be written about his legacies. Here, I do not concern myself with these interpretations or critiques. Neither do I intend to present a review of his artistic life and experiments. I focus only on those experiments in which he systematically applied various strategies of reproduction to examine the plastic potential of chance. Duchamp’s procedure of pseudo-scientific formulation, and his efforts at recording and then reproducing the contingencies occurring during the process of the creation inform my subsequent discussion on the nature of the creative act and the role of chance happening in the process of art making.

**Duchamp and Chance**

Duchamp’s experiments with chance go back to early 1913. His “unflinching admittance of chance and all its implications of the possibility of a total lack of order in the universe was systematic and explicit” (Watts, 1980, p. 49). Chance for Duchamp, as with Arp and the other Dadaists, was a weapon against aesthetic habits formed by two modes of ordering: logic, and traditional aesthetic taste. The application of chance in the process of creation enabled him to “eliminate all established perceptual patterns for absorbing
experience and neutralizing it in one’s habitual mode of interpreting the world” (Watts, 1980, p. 42). After trying his hand at Impressionism, Cubism, and Futurism, Duchamp began to reject modernist painting and all prevailing aesthetic rules. He started his mechanical drawing to erase the “hand,” “the old-fashion form of drawing,” as well as judgment based on taste. In an interview with Roberts (1968), he explains,

My hand became my enemy in 1912. I wanted to get away from the palette. This chapter of my life was over and immediately I thought of inventing a new way to go about painting. That came with The Large Glass. (p. 46)

In fact, in mechanical drawing, he revolted against the traditional artistic standards and tastes, and with the application of chance, he could limit the intervention of taste. He believed that “a mechanical drawing has no taste in it;” a straight line drawn with a ruler instead of the hand doesn’t reflect anything except “the impersonality of the ruler” (cited in Tomkins, 1976, p. 29). In 1911, when Duchamp decided to paint a coffee grinder, the machine as a “key symbol of modern age, became the object of Duchamp’s ironic imagination” (Tomkins, 1976, p. 29). Duchamp clarifies this movement:

But instead of making a figurative coffee grinder I used the mechanism as description of what happens. … You see the handle turning, the coffee after it is ground—all the possibilities of that machine. (cited in Tomkins, 1976, p. 28)

Enlisting chance helped Duchamp to change the conventional definition of art. In The Creative Act, a short autograph note for a Mina Loy exhibition, he (1957/1973) writes,

What I have in mind is that art may be bad, good or indifferent, but, whatever adjective is used, we must call it art, and bad art is still art in the same way as a bad emotion is still an emotion. (p. 139)

Duchamp defines the result of artistic struggles in the process of creation as a personal “art coefficient”:

In the creative act, the artist goes from intention to realization through a chain of totally subjective reactions. His struggle toward the realization is a series of
efforts, pains, satisfactions, refusals, decisions, which also cannot and must not be fully self-conscious, at least on the aesthetic plane.

The result of this struggle is a difference between the intention and its realization, a difference which the artist is not aware of.

Consequently, in the chain of reactions accompanying the creative act, a link is missing. This gap which represents the inability of the artist to express fully his intention; this difference between what he intended to realize and did realize, is the personal “art coefficient” contained in the work.

In other words, the personal “art coefficient” is like an arithmetic relation between the unexpressed but intended and the unintentionally expressed. (Duchamp, 1957/1973, p. 139)

Therefore, the “art coefficient,” as Duchamp describes it, is neutral, unjudged, and comprehensive; that is, it embraces “not only great art, but …bad, good or indifferent” (1957/1973, p. 139). According to him, the “art coefficient” is the artist’s personal expression of art, and it is, in production, in its raw state. It is the spectator who refines this raw state and makes “pure sugar” from “molasses”:

The creative act takes another aspect when the spectator experiences the phenomenon of transmutation: through the change from inert matter into a work of art, an actual transubstantiation has taken place, and the role of the spectator is to determine the weight of the work on the esthetic scale. (Duchamp, 1957/1973, p. 139)

Throughout his artistic life, Duchamp was always concerned with “chance,” “change,” “unconscious choice” and “invention.” For him, chance was associated with the subconscious personality, so he believed that chance is unique for everybody and each person is fated to encounter his own chance: “Your chance is not the same as my chance, … just as your throw of the dice will rarely be the same as mine” (cited in Tomkins, 1976, p. 33). This idea of chance is presented in Musical Erratum. In 1913, Duchamp sets a musical composition by the use of chance. He and his sisters choose the notes of musical scales randomly from a hat, and then set them as a composition:
The piece of music was made with my 2 sisters: Each one of us drew as many notes out of a hat as there were syllables in the dictionary definition of the word “imprimer”, picked by chance. (cited in Bonk, 1989, p. 10)

For Duchamp, the way that they chose the notes was an expression of their own personal chance, not merely a random creation.

Duchamp attempts to show that the creative act is a subjective mechanism in which an artist constantly moves back and forth between a fully consciously controlled position and an unrealized unconscious accidental status. Of course, such a process could not be linear. Duchamp, like other Dadaists, believed that the acceptance of a Newtonian, linear explanation of causality, where “cause equals effect,” in the process of creating art thwarts the “unintentional” aspect of a creative act and, with other Dadaists, felt art must resort to chance as a means by which creativity could be enhanced. He adopts chance in order to break logic and its order as perceptual habits and to show that the nature of these patterns is arbitrary. Influenced by Poincaré, Duchamp, in his pseudo-scientific procedures, clearly negates causality, as well as rigid notions of meaning, by revealing the ambiguity of all experience, which in turn causes the contradiction in the systems containing it. In this regard, Henderson (1998) writes,

In a declaration of free will and individualism versus determinism, Duchamp created his own principle of “ironic causality,” by which he would choose among the possible solutions produced by his experiments with chance. (p. 65)

Poincaré, the French mathematician and philosopher of science, suggested that Nature and natural laws were stable but subject to chance (Shearer, 1998). His chaotic deterministic system (translated into chaos theory in the 1960s) encouraged Duchamp to combine mechanism and chance to create his works. In fact, for Duchamp, Poincaré’s
view of probabilistic systems “where simple cause and complex effect are unlinked but still related, albeit non-linearly” (Shearer, 1998, p. 6) was a means to challenge traditional notions of logical reality.

Precise accident/accidental precision

Sanouillet (1958/1973), in the introduction to the *Writings of Marcel Duchamp*, notes that Duchamp, in his entire life as well as his art and his writing, “has never accepted any preordained principle or any intangible explanations” (p. 5). Instead, Duchamp attempts to define his own system of ordering. In his artistic activity, Duchamp pursues, simultaneously, two lines: “precision painting” and the “application of chance.” His first version of *Broyeuse de Chocolat* (1913) portrays a machine, and, in conjunction with the second *Broyeuse de Chocolat* (1914), we see Duchamp’s interest in “precision painting.” He later combines precision with chance. Duchamp’s first aspiration by the end of 1912 is “precision painting.” This is a means by which Duchamp seeks to escape “judgments based on taste” (Watts, 1980). At this stage, he attempts to work with the accuracy of a technician. This is the point at which he is very attracted to the machine. Of course, this attraction continues throughout his entire artistic career. In 1913-1914, he links precession painting and chance. Bonk (1989) writes,

In 1913-1914, Duchamp went on to define the missing link, the common denominator, which related “canned chance” to “precession painting,” by making a choice of an anonymous, industrially produced object. This action—later developed in America into the concept of “ready-made”—provided him with a totally new means of giving pictorial expression to his intentions, and simultaneously refuted the conventional idea that artist’s individual “hand” is an indispensable constituent of the definition of a work of art. (p. 10)
Duchamp celebrates working with paradoxical principles, spinning in infinite heterogeneous potentials offered by chance and challenging the resulted manifold overlaps and multi-sided profusion. He fastens randomness and accuracy in his experiments in pairing chance and machine, as both mechanical means of production and “as ironically treated subject matter” (Watts, 1980, p. 34). Hence, the machine and chance, the paradox and contradiction between accuracy and randomness, becomes his main engagement in his work. In an interview he talks about this engagement:

I don’t think that the public is prepared to accept it ... my canned chance. This depending on coincidence is too difficult for them. They think everything has to be done on purpose by complete deliberation and so forth. In time they will come to accept chance as a possibility to produce things. In fact, the whole world is based on chance, or at least is a definition of what happens in the world we live in and know more than any causality.

... My approach to the machine was completely ironic. I made only the hood. It was a symbolic way of explaining. What was really beneath the hood, how it really worked, did not interest me. I had my own system quite tight as a system, but not organized logically. My landscapes begin where da Vinci’s end. The difficulty is to get away from logic. (Duchamp, 1968, p. 63)

Duchamp’s experience with chance was more systematic than those of other Dada artists. Watts (1980) describes Duchamp’s systematic approach to chance and his interest in the relationship between accuracy and chance:

In pairing chance and precision it is almost as if Duchamp had foreseen the development of quantum physics, in which precision becomes possible only in a context of indeterminacy. Indeed, all his experiments with chance were carried out with a scientific solemnity that was not altogether ironic. Each experiment was systematically repeated three times. Duchamp’s attack against any system was an attempt to turn the system against itself. Reason he confronted with reason and scientific determinism he undermined through application of strictly observed scientific procedure. (p. 35)

Duchamp usually made careful selections and definitions of the conditions under which chance was allowed to intervene. He systematically set up the test situation and then he
repeated the test two or three times (he does in 3 Standards Stoppages). In fact, the arrangement defined and set by Duchamp is technically deterministic. He limits the elements and subsequently limits the range of possible outcomes. But the actual implementation is based on the random. Duchamp does not direct the result to a particular end. Duchamp suggests a paradox in his work, the contradiction between intelligence and chance, order and possibility, which may be one of the reasons he chose to work with “delay.” On a note in the Green Box, Duchamp writes, “Use ‘delay’ instead of picture or painting: ‘picture on glass’ thus becomes ‘delay in glass’—but ‘delay in glass’ does not mean ‘picture on glass’” (1912/1973, p. 26). For example, in the Large Glass, the machinery of the bride and her bachelors has the potential for movement, but nothing visible happens. Duchamp calls this “delay in glass” which suits the atmosphere of waiting and stillness.

Opening up his highly developed order to the intervention of chance as an unpredictable component allowed Duchamp to access infinite new creative possibilities. The operation of chance, exactly like multiple combinability and like the negation suggested in a throw of dice, offered him a state of indeterminacy with myriad choices in the construction of art works. He believed that random action happens only through personal, chance invention, regardless of circumstance. The elements are limited and randomly chosen. The relationship of these elements is unknown. This is a construction of the “possible.” Duchamp believed that in an orderly and set situation, the application of order reduces all outcomes to a particular one. In such an aesthetically set situation, the result is deterministic. In chance operations, the result is out of human control. It is a “possible”
among infinite possibilities. Here is where human intervention seems to be unnecessary.

This is the point in which all possible results are described through a variation of the possibilities, personal possibilities. In one of his notes (1912-1923) on *The Bride Stripped Bare by Her Bachelors, Even (The Large Glass)*, he defines the possible as a physical corroding and writes,

Possible
The figuration of a possible.
(not as the opposite of impossible
nor as related to probable
nor as subordinated to likely)

the possible is only
a physical “caustic” [vitril type]
burning up all aesthetics or callistics (1973, p. 73)

Duchamp’s interest in choice without preference, or the liberty of indifference, led him to undertake a number of experiments with chance configurations, from his *Musical Erratum* compositions, the *3 Standard Stoppages*, and the simple reference to the “Barrel Game” in a note in the *Box of 1914*, to experiments involving complex procedures and diagrams set forth in the 1980 *Notes*. This experimental activity would seem to have been a route by which Duchamp explored the cultivation of indifference and chance occurrences that he later spoke of as “central to the visually indifferent choice of the Ready-mades” (Henderson, 1998, p. 65). The subsequent discussion is a brief review of some of these experimental activities and their chance outcomes.

*The Three Standard Stoppages*

According to Watts (1980), the best known of Duchamp’s experiments with chance is a series entitled *Three Standard Stoppages* (Figure 8). In the *Three Standard Stoppages*,
Duchamp coupled precision with chance in response to his preoccupation with the nature of scientific truth. He dropped a one meter thread from a height of one meter on to a canvas, fixed it and glued it and placed a sheet of glass on it for protection. He repeated this process twice. Then he cut three pieces of wood as rulers to conform to the curves of
the dropped threads. At the end, he put all threads and rulers in a box, called it *Three Standard Stoppages*, “canned chance.” On the back of each canvas strip (it can be seen through the glass) he printed “Un metre de fil droit, horizontal, tombe d'un metre de haut. (3 Stoppages etalon; appartenant a Marcel Duchamp. / 1913-14),” translated to “A straight horizontal thread one meter in length falls from a / height of one meter. (3 Standard Stoppages; belonging to Marcel Duchamp. / 1913-14)” (Seekamp, 2004). With this printed title, Duchamp includes the making process as a part of artwork. Duchamp describes and documents his experiences as precisely as does a scientist. In his notes, he writes,

The Idea of the Fabrication  
- If a straight horizontal thread one meter long falls from a height of one meter onto a horizontal plane distorting itself as it pleases and creates a new shape of the measure of length.

- 3 patterns obtained in more or less the similar conditions: considered in their relation to one another they are an approximate reconstitution of the measure of length.

The 3 standard stoppages are the meter diminished. (cited in Bonk, 1989, p. 218)

Later on, describing the Three Standard Stoppages, he states,

It’s a Ready-made if you wish, but a moving one. By this I mean three meters of thread falling down and changing the shape of the unit of length. The Three Standard Stoppages, I prefer to call them. I was satisfied with the idea of not having been responsible for the form taken by chance. At the same time I was able to use it for other things … in my Large Glass, for example. (Duchamp,1968, pp. 62-63)

In fact, Duchamp, with his *Three Standard Stoppages*, attempts to make “his own units of measurement based on the law of chance” (Tomkins, 1976, p. 33). He even used the curved lines of Stoppages as rulers for guide lines in the *Large Glass*. In dropping, recording and repeating his experiments with threads, Duchamp aimed to imitate scientific method in statistical sampling to ridicule rationalism and traditional scientific
thinking (Bogle, 1981), as well as the traditional notion of artistic expression. When Duchamp asked by Kuh, one of his interviewers, to name his the most important work, he stated,

I’d say the Three Stoppages of 1913 is my most important work. That was really when I tapped the mainstream of my future. In itself it was not an important work of art, but for me it opened the way—the way to escape from those traditional methods of expression long associated with art ... For me the Three Stoppages was a first gesture liberating me from the past. (1962, p. 81)

The *Three Standard Stoppages* represents that which we assume to be absolute (a standard unit of measurement) as simply arbitrary. Fallen one-meter threads offer an infinite number of possible curved lines with the equal length of a “meter” transformed by chance. In this regard, Duchamp asserts,

This experiment was made in 1913 to imprison and preserve forms obtained through chance, through my chance, at the same time, the unit of length: one meter was changed from a straight line to a curved line without actually losing its identity (as) the meter, and yet casting a pataphysical doubt on the concept of a straight line as being the shortest route from one point to another. (cited in D’Harnoncourt and McShine, 1973, pp. 273-274)

Duchamp’s new measuring method, like Poincaré’s, is “a qualitative system taking the approximate relation among events as the measure, instead of the quantitative method of the meter” (Shearer, 1998, p. 3). The *Three Standard Stoppages* refer to a “meter” as approximations of the meter. That is, any measurement is an estimate rather than a standard. Duchamp shows that a unit of measurement is not standard but rather provisional, conditional and contingent. In an interview, when Roberts (1968) asks Duchamp, “This chance method of measurement, as with the Stoppages, puts a severe strain on the laws of physics, doesn’t it?,” Duchamp answers, “If I do propose to strain a
little bit the laws of physics, chemistry and so forth, it is because I would like you to think them unstable to a degree” (Duchamp, 1968, p. 63).

Some writers such as Shearer (1998) and Henderson (1998) relate Duchamp’s experimentation with the fallen strands to Poincaré’s theory and attack against Euclidean geometry. Duchamp, in his playful physics and pseudoscientific experiments, frequently refers to Poincaré’s ideas about chance, probability science, random molecular movements, non Euclidean geometry, etc. In the *Three Standard Stoppages*, Duchamp turns to Poincaré’s argument of the deviation and connection between the curved space of non-Euclidean geometry and the principle of straight lines in Euclidean geometry.

According to Poincaré (1905/1952), Euclidean and non-Euclidean geometry are two interconnected worlds in the mind. One can move from one system to the other if one knows the rules of both systems and applies a right geometric method. Shearer (1998) parallels Duchamp’s fallen threads with Poincaré’s idea:

> The line of the meter (Euclidean) smoothly meets, in continuity, the curves of another new geometry (non-Euclidean). The new geometry teaches us, as Duchamp stated, that we should doubt any single system, for even though the smooth curves of the threads meet the lines in continuity, the differences are important. (p. 3)

The fallen one-meter strand is not a line anymore, it is a curved space. It demonstrates Duchamp’s doubt about the absoluteness of the old definition of the meter, doubt about the standards and scientific laws.

In 1953, when Katherine Dreier Bequest decided to show the *Three Standard Stoppages* at the Museum of Modern Art in New York, Duchamp added two more elements to the
original *Three Standard Stoppages*: two wooden meter sticks marked “1 METRE” and a label by Alfred H. Barr, Jr. saying “In this exhibition [1953] three stretched threads and two meter sticks, one vertical and one horizontal, have been added at the suggestion of the artist to clarify his procedure” (Seekamp, 2004). Later, Duchamp replicated the *Three Standard Stoppages* by adding more elements (Figure 9).

*Ready-mades*

Duchamp’s ready-mades were ordinary objects of everyday use which he selected, titled (usually unconnected with their functional use), signed and presented as art works.

*Bicycle Wheel* (1913) and *Fountain* (1917) are the examples of this approach (Figure 10).

In *Apropos of “Readymades,”* he tells how the idea of “ready-made” was formed:

In New York in 1915, I bought at a hardware store a snow shovel on which I wrote “In Advance of the Broken Arm.” … It was around that time that the word
“Readymade” came to mind to designate this form of manifestation. … A point which I want very much to establish is that the choice of these “Readymades” was never dictated by esthetic delectation. This choice was based on a reaction of visual indifference with at the same time a total absence of good or bad taste … in fact a complete anesthesia. (1961/1973, p. 141)

In an interview with Cabanne, he also clearly explains how his ready-mades are chosen:

Cabanne: What determined your choice of ready-mades?
Duchamp: That depended on the object. In general I had to be aware of its “look.” It’s very difficult to choose an object, because at the end of fifteen days, you begin to like it or hate it. You have to approach something with an indifference, as if you had no aesthetic emotion. The choice of ready-mades is always based on visual indifference and, at the same time, on the total absence of good and bad taste. (1971, p. 48)

The idea of ready-mades comes from Duchamp’s interest in humour and chance, two main characteristics of Dada. In fact, with ready-mades, he substituted manufactured objects for artworks made by artist’s hands, and also replaced the conscious process controlled by the artist with a random process. Duchamp’s approach to the mass
produced object was “a final negation of the formerly unique, but now defunct, Renaissance work of art” (Watts, 1980, p. 43). He wanted to ridicule conventional definitions of art and the artist, and ready-mades were a means to do so:

A ready-made is a work of art without an artist to make it, if I may simplify the definition. … [It is the] de-deifying of the artist. Of lowering his status in society. … It is very important for me to introduce humour, to doubt the seriousness of the work as in a cosmic whole of the world. Our little corner of the earth is so small, especially today as we get to know more about it. And we have always been anthropocentric, a little idea to be mocked. And I did include myself in the joke. I wanted to get rid of the herd instinct in artists; to individualize, to singularize, is what every artist should do instead of going towards mass production as we do today. (1968, p. 47)

Duchamp’s ready-mades are the result of a conscious effort to break traditional artistic rules and to create a kind of art that absorbs the mind rather than the eye. Duchamp defended *Fountain* (1917) which had been rejected by the Society of Independent Artists, in an unsigned article in *The Blind Man*, a one-shot magazine published by his friend Beatrice Wood. In response to the claim that *Fountain* was mere plagiarism, was “a plain piece of plumbing,” he argued,

> Whether Mr. Mutt\(^{15}\) with his own hands made the fountain or not has no importance. He CHOSE it. He took an ordinary article of life, placed it so that its useful significance disappeared under the new title and point of view — created a new thought for that object.” (1917/2000, cited in Gayford and Wright, p. 183)

Indeed, Duchamp’s ready-mades have not been created to present artistic skills but rather to offer new meanings. As a result of the artist’s choice and selection of an everyday object, ready-mades are de-contextualized objects that take on new meanings. They are a kind of art that invites and provokes spectators to participate and think. Ready-mades engage the viewer as a contingent part of the creative process. According to Duchamp, art

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\(^{15}\) To create *Fountain*, Duchamp took a porcelain urinal, turned it upside down and signed it with the pseudonym - R. Mutt and submitted it for an art show. Indeed, it was rejected for being neither original nor art when Duchamp offered it for the first exhibition of the Society of Independent Artists in New York in 1917 and subsequently was lost.
is created at the concourse of an artist’s intention and the observer’s response.

Participation of the spectator as interpreter “makes the work of art contingent on yet another unpredictable variable, submits it once again at this final state to random influences” (Watts, 1980, p. 43). Spectators’ engagement might be either aesthetic or linguistic. Sometimes the physical construction of the ready-made attracts the viewer. Sometimes it is a statement in the title that invites the spectator to participate in a language game. Bicycle Wheel invites the viewer to give it a spin. Traveler’s Folding Item, a typewriter cover without the typewriter, provokes viewers to have a glance under the cover. Snow Shovel (In Advance of the Broken Arm) began first linguistically and became, later, an actual shovel purchased for the statement, which provokes the observer’s imagination to make a connection between the words and the object.

Ready-mades sometimes were given purposefully perplexing titles, or were inscribed with an unconnected phrase with the object or even nonsensical words to stir the spectators’ imagination and make them a part of the process of creation: the unpredictable part. Duchamp describes how he approached and used language in his works:

As soon as we start putting our thoughts into words and sentences everything gets distorted. … Language is just no damn good—I use it because I have to, but I don’t put any trust in it. Once I became interested in that group of philosophers in England, the ones who argue that all language tends to become tautological and therefore meaningless. I even tried to read that book of theirs on The Meaning of Meaning. I couldn’t read it, of course, couldn’t understand a word. But I agree with their idea that only a sentence like “the coffee is black” has any meaning—only the fact directly perceived by the senses. The minute you go beyond that, into abstractions, you’re lost. (cited in Tomkins, 1976, pp. 31-32)
This attitude later is followed by a fascination with a kind of language where “words break free of their accustomed meaning, play tricks on themselves, and begin to operate in a new, nonrational context” (Tomkins, 1976, p. 32); language that focuses on the mind of the interpreter is crucial in the chance operation of creating meaning.

The Large Glass

Duchamp worked on The Bride Stripped Bare by Her Bachelors, Even (1923) — also known as The Large Glass (Figure 11) — for eight years from 1915 to 1923. The Large Glass is made of two large plates of glass mounted vertically and supported by a well-built frame. Duchamp employed a variety of unorthodox and unusual materials such as wire, paint, mirror plating, foil, even dust to make his image on the glass. In 1912, he started the studies for The Large Glass, and began working on The Large Glass, in 1915. In 1920, the work was left in the studio for approximately six months to gather dust. Duchamp photographed the dust and then removed, selectively, some parts of it, and then coated the remaining dust with a preserver in the area known as the sieves or parasols. In early 1923, he abandoned the work “in an ‘incompleted’ state in order to devote himself full-time to chess” (Adcock, 1983, p.1). After an incident in 1926 when the work was transported on a truck from its first public exhibition and crushed extensively, Duchamp left the cracks throughout the entire work and asserted that the lines have improved the piece (Figure 12). In an interview with James Johnson Sweeney filmed at the Philadelphia Museum of Art and broadcast as part of the “Wisdom” series on NBC television in January 1956, Duchamp said,

I like the cracks, the way they fall. You remember how it happened in 1926, in Brooklyn? They put the two panes on top of one another on a truck, flat, not
knowing what they were carrying, and bounced for sixty miles into Connecticut, and that's the result! But the more I look at it the more I like the cracks: they are not like shattered glass. They have a shape. There is a symmetry in the cracking, the two crackings are symmetrically arranged and there is more, almost an intention there, an extra—a curious intention that I am not responsible for, a ready-made intention, in other words, that I respect and love. (1956/1973, p. 127)

*The Large Glass* represents Duchamp’s humorous look at life and at the uncertainties of human relationships. In the Large Glass, he illustrates a hopeless struggle between a bride and her nine bachelors trapped on a torturous love machine. Adcock (1983) believes that Duchamp “spent his whole life working on a body of works clustered around his conception of the Large Glass” (p. 2) to make his own legend. *The Bride Stripped Bare*
by Her Bachelors, Even is an attempt to picture the invisible abstract forces involving in erotic/romantic aspirations. It is also another of Duchamp’s pseudoscientific, mock-analytical experiments. In this regard, he states,

It was just the idea that life would be more interesting if you could stretch these things a little. … After all, we have to accept those so-called laws of science because it makes life more convenient, but that doesn’t mean anything so far as validity is concerned. Maybe it’s all just an illusion. We are so fond of ourselves, we think we are little gods of the earth—I have my doubts about it, that’s all. The word “law” is against my principles. Science is so evidently a closed circuit, but every fifty years or so a new “law” is discovered that changes everything. I just didn’t see why we should have such reverence for science, and so I had to give another sort of pseudo explanation. I’m a pseudo all in all, that’s my characteristic. I never could stand the seriousness of life, but when the serious is tinted with humour it makes a nicer color. (cited in Tomkins, 1976, p. 34)

The period of time in which Duchamp was living was the time of scientific revolutions and of the dominant culture of scientific imagery and ideas. The Large Glass displays Duchamp’s response to this culture. As Henderson (1998) and Adcock (1983) argue, The Large Glass, indicates Duchamp’s fascination with the concept of the fourth dimension of non-Euclidean geometry. Duchamp in his notes refers to the fourth dimension extensively. In one of them, he writes,

The shadow cast by a 4-dimensional figure in our space is a 3-dimensional shadow.... Construct all the 3-dim’l states of the 4-dim’l figure, the same way one determines all the planes or sides of a 3-dim’l figure - in other words: one can move around the 4-dim’l figure, according to the 4 directions of the continuum. (Holton, 2001, p. 131)

The note points to Duchamp’s engagement with mathematical ideas. This engagement, however, is not scientific, but rather interpretive and playful or, as he calls it, pseudo.
The Large Glass consists of two zones: The upper part of the work, the Amorous Pursuit, is the Bride’s domain; the lower part, Fate Machine,\textsuperscript{16} is the region of the Bachelors and their apparatus. Between these two areas is the Horizon. Duchamp describes Bride in this work as a “female hanged body” that “swings to and fro,” and is “extremely sensitive to differences.” His Bride affects “the storms and the fine weathers” by “meteorological extension” (1912/1973, pp. 45-48). The Amorous Pursuit portrays the interaction of female and male desire. The nature of this interaction is open to interpretation. In the abstract realm of \textit{The Large Glass}, and in a probabilistic system of creativity, an infinite number of perspectives are possible. The viewer might understand the interaction as either an erotic progress of an encounter or wedding vows, or something else. The Fate Machine is an imaginary mechanical apparatus continually in motion. It represents the interface of chance and destiny. At the center in the Bachelor’s half of the glass, there are seven cone-shaped sieves which become gradually filled with “illuminating gas” (represented by dust). In these sieves, “the bachelors’ erotic impulses are homogenized and liquified” (Stafford, 2002-2006, n. pag.).

\textit{The Large Glass} represents Poincaré’s notion of the cosmos as a combination of randomness and order (Henderson, 1998). Poincaré, like his forebears, believes in natural laws, but these laws are not mechanistic and predictable:

\begin{quote}
A very small cause which escapes our notice determines a considerable effect that we cannot fail to see, and then we say that the effect is due to chance. If we knew exactly the laws of nature and the situation of the universe at the initial moment, we could predict exactly the situation of that same universe at a succeeding
\end{quote}

\textsuperscript{16} The names of these parts come from Duchamp’s notes for \textit{The Large Glass}, published in 1934. In fact, his notes for \textit{The Large Glass} are essential for understanding the content and the meaning of \textit{The Large Glass}. As he himself says, the notes are complementary to the visual experience, like a guide book which provides some explanations for the actions depicted on the glass.
moment. But even if it were the case that natural laws had no longer any secret for us, we could still only know the initial situation *approximately*. If that enabled us to predict the succeeding situation *with the same approximation*, that is all we require, and we should say that the phenomenon had been predicted, that it is governed by laws. But it is not always so; it may happen that small differences in the initial conditions produce very great ones in the final phenomena. A small error in the former will produce an enormous error in the latter. Prediction becomes impossible, and we have the fortuitous phenomenon. (Science and Method, n.d., p. 67-68)

Similarly, the process of mental choice and discovering for Poincaré is neither completely law-abiding nor accidental. In *Science and Method*, he describes the process of mental choice resulting in “sudden illumination,” and asserts that we experience “sudden illumination” as a surprise because we are not able to see the causative gas-like molecular collisions within the mind. He believed that what we understand as chance discovery is the outcome of a kind of sifting and selecting process that mostly occurs in the unconscious during a prior period of seeming rest and delay (p. 60-62). Poincaré argued that the most perfect “unconscious sieves” belong to geniuses. Those sieves make geniuses capable of sifting infinite amounts of random ideas formed and reformed by colliding molecules in the subconscious, and of selecting the most perfect and useful one. The process of creating *the Large Glass* presents clearly Duchamp’s exploration of such idea of chaos and selection. The way of leaving the piece to lie in his studio to gather dust, and then selectively removing some parts of it, using a system of sieves for filtering “illuminating gas” (represented by dust) in the bachelor’s apparatus, and the way of protecting the incidental cracks all display a synthesis of Duchamp’s playful, exploratory approach to the scientific theories of his time.
Artists' Conceptions of Creativity and Chance

I am interested in context. Responding to a site can be very subtle, for example just liking the place or person who extended the invitation, or it can be overt like making a canvas fit floor to ceiling. It can also mean knowing the premise for a show and responding to this through the artwork. I am also interested in how context changes meaning, i.e., the same painting in a home or in a themed group show or at the Salvation Army. I also like to collaborate with other artists. Letting other people influence my ideas, my hand, materials, or approach is important to me. As far as my paintings being sociable creatures, I guess I sort of wince at this. I am not interested in making people uncomfortable but at the same time I don’t have an interest in paintings that are truly passive. The best paintings are ones that require an active, discerning viewer. My experience with Chris Wool’s paintings comes to mind as a really explicit example of this. Van Gogh also is an obvious example. Many paintings do this to different degrees and in different ways. At the same time it is not that the passivity, the “get along and go along” quality of wallpaper, textiles, and screens necessarily excludes them from being looked at similarly to how we look at paintings. I am interested in having them tell us something about what a painting can be or for that matter how truly unsociable a craft object can be. For something to be putting itself out there as a painting. There is a certain activity of proposition. The painter is saying here is my proposal, this is what a painting is now. The painter doesn’t have to think about this all the time and of course by necessity gets caught in the details of work. But in essence I think when we look at an artist’s life work it is as a whole proposal for a way of looking at the world or at the very least re-looking at their medium of choice. (Owens, October 2003, p. 95) (Figure 13)
What do artists do when they create art? How do they describe the creative process in which they engage? Is a creative process law-abiding? What is the role of chance happenings in such a process? Creative people’s descriptions of their skills, techniques, ideas, actions, engagements with material, thought processes, knowledges, frustrations, intentions, references and derivations all provide understanding of what a creative process looks like and how it works. In this node, I refer firstly to some artists’ descriptions of their process of creation. Then I tell my own story explaining what I do when I draw. These discussions are followed by reflection on what artists do when they work; what kind of knowledge they possess, and how they control the contingencies in their work.

I usually enjoy reading interviews, especially interviews with artists. There is a kind of immediacy in their conversations. Interviews are usually formed in a spontaneous and intuitive interaction between interviewee and interviewer, even when the interview is structured. In interviews, people expose their unvarnished selves as well as the core of their ideas. Therefore, in order to know what artists themselves think about their process of creation, I decided to review fifteen interviews with painters, sculptors, installation artists, and video artists published in Flash Art magazine. I chose Flash Art because it is a landmark art magazine that publishes art world news, markets, and performances; informative feature articles and interviews on exhibitions of new and unknown artists as well as known artists; and critiques of contemporary artistic practices.

17 Flash Art is an international magazine and has been published since 1967.
The selected interviews were informal conversations with artists and obviously there was no common pattern among them. They were conversations that illustrated the artists’ ideas about their recent exhibitions and works, in addition to their overall approaches to their artwork, and their descriptions of typical working processes. Among seventy five interviews with artists published between 2002 and 2004, I randomly chose fifteen interviews with visual artists already selected by *Flash Art*; this was the only criterion for my selection. In those interviews, I follow only how artists describe what they do, that is, their descriptions of their engagement in the process of creating an artwork.

In these interviews, talking about their concerns, interests, desires, feelings, thoughts, and beliefs, artists mostly describe their work as a manifestation of a site of complex realities. The creative process described by them seems to be a noetic and nonlinear process that deals with their meaningful interactions with materials, techniques, mediums, and aesthetic qualities and values as well as cultural/historical contexts and socio-political environments.

**The Process**

Artists’ discussions about the creative process in these interviews could be organized in terms of the process followed by artists, their motivations and intentionality for making art, and the characteristics of the art making process. Most of the interviews focus on the process followed by the artists.

According to most artists in the interviews, the process of art making begins with a search
for a starting point. Rona Pondick (March/April 2002, p. 77) (Figure 14) begins his work by identifying what he wouldn’t do. Laura Owens (October 2003) starts a painting by asking questions like “what can a painting be?” in order to allow “a sort of space to start over with painting at that moment” (p. 95). Kai Althoff (May/June 2002) (Figure 15) begins to work on something that has become his only loving concern, while Jim Lambie (May/June 2003) tends to set himself problems or interests in order to give himself a platform. Furthermore, he believes that “each work has its own conceptual base,” (p. 104) therefore he begins by finding these bases. Clearly, the matter and nuances of beginning are unique to each artist.

According to the interviews, the artists continue the process with “letting all the references happen” (Currin, October 2002, p. 73). Owens (October 2003) explains how

Figure 14. Rona Pondick, Untitled Animal, 2001, (Flash Art Magazine, 2002).
(Flash Art Magazine, 2002).

Figure 15. Kai Althoff, Untitled (Jesus figure), 2001,
she let “a lot of things flow in and out of the practice” (p. 95). These things might be a
friend’s suggestion, a photograph, or a word. But in many cases, some form of materiality
and its possibilities informs the subsequent stage of creation.

Materials appropriate to the task, medium, and techniques help artists to proceed with the
process of creation. Describing the importance of the available materials in the
emergence of an art piece, Eva Rothschild (Figure 16) states,

With the heads or the leather pieces, for example, it would be very hard for me to
explain where they came from. They emerged from having some scraps of leather
left lying around the studio and bunching them together. I try to keep lots of stuff
or materials in the studio and if I am messing around with something and it feels
like it shouldn’t go straight into the bin, I generally keep it around a while. It’s a
bit like having a three-dimensional drawing lying around and then it becomes
apparent a few months down the line that the form, which is beginning to exist
actually, now needs some labour put into it and now needs to be approached with
not necessarily intentionality but consciousness, and then bring it into being and
see where it goes. (Rothschild, July September 2003, p. 84)
She is unable to explain the origin of her work and why she prefers specific materials in creating a piece of art. But she is aware that having everything she might need, around provides more potential for letting something happen in her work. She describes such awareness as approaching the process with “consciousness.”

Similarly, for Jim Lambie (Figure 17), materials expand the possibilities of artistic representation, and help to proliferate meaning throughout the artwork. But, unlike Rothschild, he intentionally chooses his materials. For him, selection and application of materials such as mirrors,\(^\text{18}\) produces distinctive aesthetic effects, thereby suggesting other ideas and meaning in the work:

\(^{18}\) Jim Lambie, in his work, reinvests the ephemera of popular culture with new life. Habitually employing records, record players, speakers, clothing, haberdashery, accessories, mirrors or doors Lambie energetically reconfigures these items to become the compositional elements of new sculptural forms.
Mirrors obviously have been loaded with all sorts of meanings and descriptions through art. As a surface it’s fair to say that they open up space where there isn’t any that they suggest portraiture, suggest self-portraiture, have surrealistic qualities, have a real history within modernism. You could start dragging in Lewis Carroll if you like. And all this stuff is there, in the background, like a white noise. But you’ve got to make the work, and like the floor, or the handbag straps in the downstairs room, or a number of other works that I have made, the mirrors and the ‘space between’ the mount and mirror itself gave me the kick-off point, to start to describe the possibilities of what that space could be. A more psychological, emotive space. The conceptual base meant that I could indulge in pure imagination, take the outside and drag it inside. Right now I want to go further inside, deep inside and I’m taking the outside with me, I’m taking it all with me… all the titles, all your gloves, all your mirrors, your record collections, the lot, and when it comes back out into the real world, your world, it’ll feel familiar, but it won’t be. (Lambie, May/June 2003, p. 104)

Beside materials and technique, the choice of medium provides a space for creation.

Differences between potentialities, functions, and effects of various media affect a visual artist’s work. Sometimes, a specific medium is able to provide the qualities to reach closures satisfactory to the artist or to present the potentialities that are compatible with the artist’s character that makes the artist feel comfortable with that particular medium, as Luc Tuymans (Figure 18) asserts,

I worked with film from 1982-85, so it changed my work largely in terms of the cropping of the image, the way of understanding imagery, and the way of re-working it. Of course my fascination with film and paint is extremely similar, in the sense that I would be a very bad photographer because I would always be too late. A photographer works within the moment, whereas in film you can approach imagery as you do in painting. The only great difference is that the narrative is cut out of the painting, but film always, inevitably, makes a narrative. (Tuymans, March April 2004, p. 79)

On the other hand, media stand for something that artists desire to have in their work.

Delia Brown (Figure 19) states,

My work employs things from culture that I respond to emotionally. With the video Pastorale, it was important to me to put this (Goapele’s) music into the space of the gallery, or the art world, because I think it stands for something that is missing. Someone called it music made for “boutiques and bubble baths,” and
that’s exactly the perception I hope to work against. (Brown, March April 2003, p. 75)

Media new to the artist provide (and impose) unpredicted languages and intersections in which the artist negotiates the creative process as one would in relating with someone through conversation. Zilla Leutenegger (Figure 20) thinks that plastic features of new media affects the formal aspects of her work:

I don’t have any technical equipment in my studio, and I rent it from time to time. Having the possibility to change media is very important for me. I have a digital camera, but who doesn’t nowadays? I’m interested in new media but I don’t spend ages on the web looking for the most recent and sophisticated developments. It gets into my work simply because I use it when it’s around me. But I like to test the limits of new media. For example, I’ve seen the glass with the mirror side I used for Ming in an architecture book. I like the fact that people can look at it and see themselves as well as what’s inside. (Leutenegger, May/June 2004, p. 129).

Features, such as the size and format of the work, the relationship between forms, texture, etc., affect the subject and the meaning of the work. Hence, artists spend considerable
time in order to reach results, as Pondick asserts,

[I’m still working on Monkeys] I want it to feel fluid and frenetic in energy and to move like a baroque sculpture. It took me two years just to work out this relationship. At the same time I have also been modeling the animal bodies. I attached two of my own heads to two of the monkey bodies. These heads needed to be in scale with the monkey heads and feel totally integrated into the mix. I needed my head to be six inches tall and feel like a life cast with skin texture and detail, like a death mask. With 3-D computer scanning and printing I could take a life cast of my head and reduce it to any size I wanted... The balancing act is part of the subject. (Pondick, March/April 2002, p. 77)

In the interviews, the artists tend to characterize their approach to artwork and the art making process as intuitive. Peter Davies (Figure 21) does not have an intentional plan for his work:

Until more recently I have never consciously set out to make specific references to existing art. My approach is always intuitive, and I often stumble over the references to other art later. Earlier on, my painting looked like Op Art quite by chance—their retinal intensity was not something I had anticipated. (Davies, March/April 2002, p. 70)

For Verne Dawson (Figure 22), intuition is a way to recognize “right” from “wrong”:
[I tell right from wrong in an image by] intuition and resonance. Like in music, the harmonious ring of perfect pitch compared to the jarring tone of a sour note. (Dawson, October 2002, p. 62)

In the process of art making, artists trace different purposes for making art. Pondick describes how he wanted to make meaning by using aesthetic qualities:

In the past I was interested in how a person moved through a room and how I could affect them with vast numbers of things scattered all around. I made meaning in the past by creating, repeating, and scattering a proliferation of images that surrounded and engulfed the viewer. (Pondick, March/April 2002, p. 77)

Keith Tyson (July/September 2003) tries to engage with principles such as adaptability, mutability, transformation, and complexity as he makes his work. Rothschild says,

For me, making work is about creating something experiential—visual, physical, spatial—but also something that refuses legibility, or an immediate summing up. It just is itself. I guess I have a phenomenological take on it. (Rothschild, July/September 2003, p. 83)

In short, through their interviews, artists mention wanting something to exist (Rothschild, July/September 2003), putting out interesting philosophical propositions (Tyson, July/September 2003), doing something universal (Tyson, July/September 2003), looking for a perfect mesh of information and mediation (Dawson, October 2002), creating
earthly paradise, and passing down information as the purposes of making art. They suggest that engaging in the artistic process needs both aesthetic and conceptual consideration and preparation.

Most of the artists identify the process of art-making as hard work. Owens states that she makes a lot of studies before making the final version of her painting:

My process changes for each painting. However, one thing that seems to stay consistent at least with most of the paintings (as opposed to drawings, which I approach more spontaneously) is a long period of preparation before starting what will be the finished painting. It’s almost like teaching myself to paint the painting I am going to make. A lot of times it starts very small, with a sketch, a word, or a photograph. Usually there are more sketches or watercolors on a small scale, or I will scan the sketch into the computer and work on it in Photoshop; dropping colors in, changing shapes and sizes. A lot of times I will then make an actual scale drawing in charcoal of the painting just to figure out the composition. This too might get put back in the computer, switched around, re-projected onto the drawing and changed. At the same time I have five to twenty small stretched canvases that I start working on, testing different color ideas and ways of painting specific parts of the painting. Sometimes, even after all that, I will also just make several versions of the painting until I feel like I got it right. I approach each painting differently so this process is never the same twice. (Owens, October 2003, p. 95)

Rothchild (July/September 2003) does a lot of drawing in sketchbooks and on the computer as well. Conversely, Leutenegger (May/June 2004) believes that her “first shot is always the best” (p. 129). She says that when she tries very hard to do something good, she fails.

The process of making art involves problematizing. Artists identify and state problems and then try to find solutions. These problems are sometimes aesthetical or conceptual, sometimes cultural, social, political, or all of the above. Brown illustrates her experience in one of her projects:
In *Forsaken Lover* I wanted to make a project about an idealized but troubled love affair between me and a well-known actor. I tried to get Benicio Del Toro but instead I got rejection letters from his publicity people. When they didn’t go for it, I fell back on picturing a lonely, romantic, Ophelia-type character. I had my friend, the photographer Ramona Trent, document me in various situations, looking wistful and forlorn, and then I painted from the photos. I diverged from that method for my last series, “Between Hameau and Walden,” and let the “enactment” happen on the canvas, instead of in front of the camera. Painting without an object made me feel like a hack—like Marie Antoinette dressing up as a milk maid to play peasant, copping a pretend innocence. Later I lost that cynicism and felt like I was just struggling toward some kind of truth in the process—that’s where the Walden part emerged. I hadn’t planned on them being landscapes; they just ended up there. (Brown, March/April 2003, p. 74)

The process of art making is presented as complex (Currin, October 2002) and constructive in terms of building a relationship between work and creator (Rothschild, July/September 2003). For Fisher, it flows slowly and independently:

Are there things I won’t let myself do? I try that from time to time at least. But works run independently, like rivers. You can’t force them to do anything. Sometimes they come of their own accord, other times you’re tearing your hair out! In situations like that I sometimes feel I have to outwit the work. (Fischer, January/February 2004, p. 86)

Rothschild describes this relationship as ownership:

With wooden structures I feel very anxious initially—I know nothing about making anything from wood. I do feel an ownership over those pieces because they’re always painted and I will do that. I go nowhere near the making of the Perspex pieces, and I don’t want to, but that feels right since there should be no sense of touch with them. It should be like it just manifested itself or was beamed in. (Rothschild, July/September 2003, p. 84)

Sometimes work bores the artists. Dawson becomes bored by painting especially as a painting nears completion. The vision has been more or less realized but its resolution requires more work even though I have become preoccupied with thinking about future paintings. However, boredom is usually overcome once I start actually working and a trance-like state sets in. (Dawson, October 2002, p. 62)

Artists may deliberately make their work self-contained:
Now I want to do the exact opposite and make self-contained objects. Now my sculptures are either walking, reclining, seated or climbing. They claim their physical spaces like animals that are territorial. The human skin texture merges naturally into the highly smoothed and polished animal bodies as if these two extreme states have collided in one body. The physical posture of each animal and human gesture merge these two foreign bodies. (Pondick, March/April 2002, p. 77)

All the artists’ descriptions demonstrate a conversion among the artist, the artwork and the situation in which the work is formed. These artists start to work, focusing primarily on the concepts and a noetic concern more than formal and aesthetic aspects. They try to open themselves to social and cultural references and let them happen. The whole process needs a great deal of concentration, mediations and hard work. Artists’ theory of art, their approaches to their medium and materials, and their articulated dispositions lead and support them in a holistic interaction with the complex, and nonlinear process of creating an artwork.

**The Artist’s References**

These artists consider childhood to be a powerful influence on their work and styles. Brown (March/April 2003) renders the social context of her childhood and explains how it has affected the content and the style of her work. Althoff explains how his childhood presents in her subconscious:

> Childhood is really a revelation to me. Everything is there already. It is ever so mysterious and all-over powerful to me. Things that happened have become archetypal in my mind, they loom large. The way things were perceived by myself then is something that I try to get back to again and again even I don't realize it happily. I seem to have absorbed something there badly, in the late 1960s and 1970s. Probably it could have been any other time. (Althoff, May/June 2002, p. 97)
Moreover, the interviews reveal that the artists make their artistic decisions based on their assemblage of references—their definitions and concepts, their cosmology and ideology. Selection of themes and references which inform both their work and their approaches to the application of specific media or material refers to their system of beliefs. For example, Dawson’s work is about time. He says he chose this theme because he thinks that 

[time] is the curse and inevitability of death. What I’m really interested in are the methods, stories and symbols that we use to mark time. Time has always been factored on the movements of sun, moon, planets, and stars. Modern clockwork and the easy access to chronometers have had a profoundly alienating effect on our relationship with the cosmos. We look at our wrists instead of the sky. Yet the very structure of our lives is predicated upon these celestial movements. (Dawson, October 2002, p. 62)

John Currin (Figure 23) paints because he believes that paintings still function: “The culture is dead, but the practice is alive. I think that painting is still a very basic urge”
Likewise, Leutenegger’s style has been influenced by her beliefs:

I try to be sincere, and when your work is getting more and more established, believing in dreams can be seen as childish or naïve. I’m doing my things, they’re exhibited, and people come and perhaps like them and buy them. But I’m still the same person I was years ago when I decided to draw and make videos just to make my dreams come true. I haven’t changed at all, and neither have my work or my ideas. What’s around me has. Maybe that’s why my work looks childish. (Leutenegger, May/June 2004, p. 128)

Art history and the work of the other artists are identified as significant sources of inspiration in the interviews with artists. Davis, Dawson, Currin, Brown, Uklanski, and Fisher discuss the influences of other artists’ work and its inspiration to them. As Davies states,

I suppose I have always aspired to make work that would look entirely different from everyone else’s: to make genuinely original art! But of course, this is impossible. The fact that everything has already been done before doesn’t seem like a good enough reason to not make art. (Davies, March/April 2002, p. 72)

Both the works admired by the artists and those they react against can be the source of inspiration. Responding to artistic tradition and process is a way to communicate a history in which artistic representation has formed. This communication leads artists to establish their own personal system:

In the mid 90s, besides responding to works I admired, I was also reacting against works I didn't particularly like, especially British process painting. Then there was Theory, swilling around since the 80s, by the mid 90’s theory had hit a peak. But it just didn’t interest me at all. It was boring. By that time I had begun to establish my own sense of a critical system based on many things we all know. The text paintings discuss these things in response to the work of other artists. But with this approach comes a sense of nostalgia. It’s a nostalgia that comes with thinking. (Davies, March/April 2002, p. 72)

Culture is mentioned as a source of influence by artists throughout their interviews.

Althoff exemplifies how cultural context and beliefs collaborate in the construction of
identity. Although discussing the issues of national identity is not interesting to Piotr Uklanski (May/June 2004), he contends that “the place of your origin always stays in you, no matter how you wish to deal with it” (p. 93). Dawson’s cultural background led him to be attracted by the concept of the past, which affects his art practices.

In the South there’s a saying “The past isn’t dead. The past isn’t even past!” It is a thrill of recognition to walk down Broadway, the old Indian trail of Manhattan, the only diagonal street that transverses the island, the road that predates the Colonial grid, wearing a pair of shoes based on pre-Colombian moccasin design, which now we call “penny loafers.” (Dawson, October 2002, p. 65)

Everyday life, one’s social and cultural position and power relationships influence artists in their artistic approach. The cumulative environment is often referenced by the artist:

Yeah, maybe sampling. I collect things, but I don’t go and hunt for them. I see things, and some stir my heart so much, like some photograph in a magazine that tells everything I ever wanted to utter in that moment – or the way somebody has decorated the room he lives in, that kills me, and I watch in awe, stunned and keep quiet, and feel there's no more I'd want to see in life. Once I saw three young police officers on a sunny day, one female in the middle and two male to her left and right, slightly proud of their freshly gained powerful position. Yet still a little awkward in their walking and wish the eagerness to be helpful when asked by the public. It said: how beautiful a start in life can be. I keep things like that like an icon in my head. (Althoff, May-June 2002, p. 96)

Dominant philosophical and theoretical discourse has a powerful impact on the artists; discourse influences and inspires them. Currin describes how changes in dominant discourse have affected him:

These “synthetic” portraits [which are the interaction between older concerns with the layering of charged socio-cultural codes and more recent concerns with painterly virtuosity] started with the idea that the act of representation is an act of exploitation. I started these during the rise of a certain photographic practice, epitomized by the work of Cindy Sherman. At this time, the feeling was that painting was like lying. The idea of a freestanding subject that sprays out meaning from a central source was under attack. The whole “French theory” attack on authorship was the accepted truth… and I just couldn’t disagree more. I was pissed off. My whole life I thought I wanted to be an author and when I got to school, I learned that this was a bad thing. It was like being a Nazi or fascist. So these fictional portraits I first made were like a first attempt to be really explicit. I
was trying to react against these accepted truths in the academy as well as a type of layered painting. (Currin, October 2002, p. 73)

Currin’s reaction to the then-emerging philosophical discourse was to search for new visual forms and styles which lead him to construct anew his way of thinking and working by his fictional portraits.

These artists’ talk about their processes of creating art suggests that artistic thinking is contextual. Artists develop their work within a set of contexts that influence their way of thinking and working. They are influenced by both their personal experiences and cultural beliefs and identities. Their memories of childhood and the social-cultural context in which they have been raised have a powerful impact on their artistic processes. Individual conversations with art history help artists to construct a more profound understanding of their own work. Theoretical discourse influences them, provides a philosophical foundation, and leads artists to an interpretive approach to art making processes. Such an approach helps them to construct their system of meaning and their way of thinking and working. Generally, these artists identify the artistic process as non-linear, as Pondick asserts,

I don’t think an artist ever goes in a linear direction, nor is life linear. Look at history. We are in an endless spiral. We think we are moving forward. In my new work I’m stepping forward. I’m doing both simultaneously. (Pondick, March/April 2002, p. 77)

Creative processes, as these artists present them, seem much like a rhizome of infinite connections, conversations and interactions among the artists’ personality, their approaches to both their work and the processes involved, formal and physical aspects of work and process, the work’s meaning, etc. Reviewing the interviews reveals that these
artists’ beliefs and views form a network of interactions and experiences that affect their process of making artistic decisions. As indicated before, unlike the modernist definition of creativity as the act of creating novel, original and pure ideas/art, post-modernists argue that producing a new configuration of pre-existing forms and information is in itself a creative act. The interviews show that the artists employ style, technique, and imagery from a variety of historical or cultural contexts, insert them into a new context shared with other elements, and make new meaning from these new relationships with subsequent elements and contexts. Artists talk about how the work of other artists provides a visual context, which fosters critical thinking. Borrowing from past artists through a process of selection and interaction, artists construct their own styles. This discussion of the interviews in Flash Art suggests that artists reconstruct a foundation for their art practices by deconstructing cultural, social, and theoretical meaning and concepts in an interactive process. Throughout the interviews, the artists show a concern with the images in circulation in history, culture and society, and the artists’ recoding, reuse, and recycling of information in their artwork. They describe how they work with cultural givens and try to manipulate them in various ways. They challenge the modernist belief that artists and intellectuals are elites who prefer to step away from the expectations of the social mainstream when they explain how their artwork’s content comes from popular culture and history, and how they are inspired by cultural contexts and beliefs and the socio-political environment. According to them, an artist is not a natural being capable of creating from a position outside; rather, s/he always already inscribed within a context.
Moreover, based on the interviews, the artists’ approaches to the process of art making challenge the modernist notion of “pure” artwork without any social function and categorizable content. Their descriptions show how, unlike the modernist’s idea of making genuinely original art, or that the artist transcends the social by reverting to private experience of the natural to create the artwork, cultural-historical context and beliefs collaborate in the construction of artistic identity. The notion of creative art production as a primal experience that precedes any expression in cultural symbolism is challenged here by the artists’ way of applying different materials, techniques, media and forms. The interest in applying different source materials, techniques, and media also exhibits the post-modernist tendency to reject rigid genre boundaries and to favour eclecticism, the mixing of ideas and forms, and the embracing of diversity and contradiction.

Artists’ theories and ideas about art, artwork, and the creative process presented through interviews provide insights not possible with a formalist interpretation. The interviews show how the artists try to develop theories and methods of interpretation which help them to deal with the complexity of the contemporary art world. The artists render originality as a modernist fiction resulting “not from expressing a unique vision but rather from masking the repetitive aspects of the work” (Brown, 1999, p. 425).

**What Do We Do When We Make Art?**

Learning how to draw is similar to learning how to talk. Talking is learned through a simple process of practice. At first, we begin to imitate the sounds and the words and then
impute them to actual things. At the first mouthing of the words, we make plenty of mistakes. But over time not only do we learn how to associate words to objects correctly, but we also find our own way of talking with specific accents and catchwords which belong to us.

Drawing is a constructive way for me to look at the subjects and to actualize them. What do I do when I draw? At first, I organize my materials and my work settings. I choose my model and place it in my desired position. Then, I begin to look at the posed model from all angles and I also touch it. This helps me to engage not only mentally, but also physically with my model. Learning to draw is really a matter of learning to see.

Therefore, in drawing, observation is not merely looking with the eyes, but it is seeing through the eyes and utilizing as many of the other senses as one can at the same time. Observation also evokes the feelings and stirs the memories of the artist. For example, imagine a man from a different country or a different culture in your environment. He can see what you see on your land, but he cannot know what you know because he lacks your experiences and the cultural context. You can recognize a square white spot in the distance, which is a house with white walls, but for him the house may have another meaning. If you and the man each draw this landscape, each drawing will be completely different. He will try to draw the landscape and because he has no experience with it, the objects will not evoke the same feelings as it does in you. You, on the other hand, will draw in the light of your past experiences. These experiences arouse your memories, feelings and disposition. All your experiences and your idiosyncrasies influence the moods of your lines. Therefore, at the beginning of drawing, I try to bring into play all of
my other senses to coordinate with my sense of sight. Many times I do it unconsciously and draw the model as if I am close to it and I can touch, smell, or hear it.

I choose the medium with which I can express my feelings better and illustrate the gesture of the model. For example, if I am going to show the details of the model, I have to utilize a pencil with a very fine point. Choosing the proper medium is a significant part of the artistic production because as you are working, you make the tools that you use a part of your body. This process of making the medium more familiar to you causes you to forget the tools you are using and to use them unconsciously. They are, as Heidegger says, “ready-to-hand.” You use the tools as naturally as you use your hands.

I begin to draw by concentrating on my model and fuse my being to its world. Relaxing myself, I open myself to be disposed to a sense of understanding, not merely by my mind but also by my body. It is a complicated process and is more ontological than epistemic. At first, I determine how I am going to compose the model on my paper. Letting my pencil swing rapidly and continuously around the paper and almost at will, being impelled by the sense of the gesture I feel, I put marks on the paper and draw the key lines. My focus is on the entire model and I keep the whole thing going at once. In fact, I try to feel the entire thing as a unit. In the first few seconds, I put something down that indicates every part of the model in the pose. Immediately, I draw the whole thing and during the minute that I draw I constantly pass from one end of the model to the other and from one part to another. At this time, I rely on reflection-in-action, which is beyond just thinking. Using past accumulated knowledge, experiences and skills, I begin a reflective
conversation with the model, the materials and the situation I am drawing. I draw something with my body in response to what the model is as I watch. I let my pencil record that response automatically, without deliberation and usually accidentally because it is my instinctive response. I let myself reason with the pencil, with the impulses that are set up between me and the model. I listen to myself think but I do not insist on forcing myself to think. At the same time, I receive a reply from the work situation.

According to Refsum (2002) a process of making art generally includes:

- a task that may be a commission or a personal intention to produce something;
- ideological, physical, economic or other premises;
- a visual idea, motif, or matter of content;
- materials, techniques, composition, form, and like considerations;
- implementation;
- the finished work of art. (p. 8)

The process, based on attention, experience, trust, and time (none of these necessarily conscious) involves judgments, choices and adjustments as the process “talks back.” The descriptions above and my own experience of drawing testify that the art-making process is unique and unpredictable, always activating serendipities and contingencies which must recognized and exploited purposefully in order to achieve what one sees as the best result (Bamberger and Schön, 1983; Nachmanovitch, 1990). Dean Keith Simonton (1988) argues that the selection processes in creative persons may be evoked by deliberate or involuntary memory, but art educators need to bring light to this process in
order to expose students to the experience of exploiting contingency in aesthetic problems.

Working in the studio, artists adopt a situated, extemporized mode of thinking which Heidegger calls "mediative thinking" and Schön calls “reflection-in-action.” What follows is a discussion of the artistic process based largely on the architect Schön’s work in the area of pedagogy of design. I chose Schön because his analysis of artistic knowledge in relation to the formation of skill foci is directed toward daily experience and subjective evaluation; more importantly, Schön argues against the prevailing belief in a mystical basis for art making, and that art as a “profession” is grounded on a systematic knowledge base that can/should be specialized, firmly bounded, scientific, and standardized (Schön, 1983, p. 23). This has interesting implications for concepts of teaching toward art as a profession. Schön effectively reduces the uncertainty in processes of creation by insisting on knowledge as the basis for professional (Refsum, 2002). Art in contemporary post-secondary schools is treated as a discipline in which the student/artist is directed to identify practice in interplay with theory, which is curiously in keeping with a Duchampian logic, where art is not about inspiration or genius or “creativity” but an a-rational yet theoretical proposition (Dunin-Woyseth and Bruskeland Amundsen, 1995, cited in Refsum, 2002). Schön’s theory of reflective practice has become very popular among the professional educators over the last fifteen years (Kinsella, 2003), perhaps because of its conciliatory possibilities. The question is not only whether artistic creativity can be developed in an academic discipline, but whether
or not this is what we actually do now; in the Case Study node, I will explore this question in greater detail.

Artistic knowledge

The theory/practice debate is rooted in a historical dualism in Western thought; a separation between reason and sensation, inherited from the Greek tradition (Cazeaux, 2002; Refsum, 2002). The split began with Plato’s idea that rational knowledge has an order completely distinct from sensory experience, and the debate was continued by Descartes in the modern age. The separation of art and knowledge is based on this thought. Describing knowledge as an intellectual meditation on the nature of the essences, Plato argues that art is merely the reproduction of outer appearances. Therefore, art leads us away from the inner essence of things (Plato, trans. Lee, 1955). This idea is reasserted by Descartes in the seventeenth century. According to Descartes, the constituents of knowledge, which are clear and distinct ideas, can just be provided by the constancy and universality of reason and are opposed to the information delivered by the senses. Geometry and mathematics demonstrate such characteristics of reason. On the other hand, sensory perception is the source of error; and everything felt through it is always changing. Experience of the physical world through senses is always particular and in a state of flux. In the same way, artwork presents a false world by deviating from the real order of the objects in the real world. However, as Cazeaux (2002) holds, Kant’s philosophy changes such organization of the knowledge and sensation relationship:

It is with Kant’s philosophy, however, that the relationship between art and knowledge is inverted and organized in such a way that art is shown to be constitutive of our capacity to generate knowledge at all. Kant is able to do this
because he reconfigures the way in which concepts stand in relation to experience. (Cazeaux, 2002, p. 2)

In the modernist paradigm, the dualism of reason and sense becomes more autocratic. Believing in ultimate truth, a hierarchy of knowledge and positivism, modernism celebrates scientific knowledge and technical control of human society. This celebration does not encourage integration between theory and practice (Keith, 1995; Klages, 2003; Smith, 2001).

What is the knowledge required and practiced by artists? Is it theory or practice? According to Donald Schön, the competent practitioner exhibits an unarticulated “knowing-in-practice” while at work, and is able to reflect on intuitive knowing in the midst of action. This kind of knowledge is both theoretical and practical.

**Tacit knowledge and explicit knowledge**

The distinction between tacit knowledge and explicit knowledge has sometimes been expressed in terms of knowing-how and knowing-that (Ryle, 1984), or in terms of a corresponding distinction between embodied knowledge and theoretical knowledge. Knowing-that involves consciously accessible knowledge that can be articulated and is characteristic of the person learning a skill through explicit instruction, recitation of rules, and attention to his or her movement. But, when skilful people act, make judgments, and display skills, they usually cannot state the principles or rules and criteria of their actions. “They just perform skillfully without deliberation or focused attention” (Barbiero, 2003, p.1). Their knowledge is knowing-how. Over the years, several writers on the epistemology of practice have strived to bring to light that “skilful action often reveals a
knowing more than we can say” (Schön, 1983, P. 51). They have brought examples from different domains of practice and have used different terms for words such as “knowing-how.” In 1938, Chester Barnard, in his essay, *Mind in Everyday Affairs* published as an appendix to *Functions of the Executive*, explained that “non-logical processes” as against “thinking processes” are only made known by judgment, decision, or action. Non-logical processes are not capable of being expressed in words or as reasoning. Michael Polanyi (1966) suggested the phrase “tacit knowledge.” Schön (1983) argues that Polanyi in his book, *Personal Knowledge*, showed the connection between the intellect and a “passionate” contribution of the knowing person. During an action, “the feelings of which we are initially aware become internalized in our tacit knowledge” (Schön, 1983, p. 52).

The ability to recognize and to correct the “bad fit” of a form to its context in the process of design is considered by Chris Alexander (1964) in his *Notes Toward a Synthesis of Form*. He mentions that usually we are not able to describe how we find a bad fit or how we correct the bad fit to be good. Generalizing Alexander’s idea, Geoffrey Vickers (1978, cited in Schön, 1983) pointed out that we can recognize the “bad fit” but we cannot describe the process of our recognition. He explained that we make judgments, qualitative appreciation of situations, on which our practical competence depends through the tacit norms. Speaking based on phonology and syntax without being able to describe how, has been psycholinguists’ concern. Alfred Schutz (1962a, 1962b) analyzed the tacit, everyday know-how that is brought to social interactions such as the rituals of greeting, ending a meeting, or standing in a crowded elevator. Birdwhistell (1970) has also
contributed to a description of tacit knowledge embedded in our use and recognition of movement and gesture.

Knowing-in-action

Schön argues that in a special way, we are knowledgeable in performing everyday action and our knowing is in our action. This knowledge is “ordinarily tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing” (p. 49).

Similarly, professionals’ workaday lives are also based on tacit knowing-in-action. They display skills and make endless judgments of quality without being able to state the rules and procedures. On the other hand, they often think about what they are doing while doing it. “Usually reflection on knowing-in-action goes together with reflection on the stuff at hand” (p. 50). When professionals strive to make sense of what they are doing, they also reflect on the implicit understanding in their action by surfacing from the implicit to the explicit, criticizing, restructuring, and embedding the results of this process in future action. According to Schön (1983), “it is the entire process of reflection-in-action which is central to the art by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict” (p. 50).

Reflection-in-action

When practitioners in an action notice how they have been doing this or that action, how well the process of the action has been working, considers the basis of these thoughts and observations, and changes the way they have been doing it, they are performing a reflection on the patterns of action, on the situations in which they are performing, and on
the know-how implicit in their performances. They are reflecting on action, which is based on explicit knowledge, and, in some cases, reflecting in action, which is based on tacit knowledge. Reflection-in-action, in many cases, depends on the experience of surprise. When intuitive, spontaneous performance corresponds to the expected results, we do not think about it. However, we respond by reflection-in-action when intuitive performance leads to unexpected results, and surprises.

*Reflective conversation with the situation*

Usually, the situation in which artwork is made is complex and uncertain. The complicity of infinite moves, norms, and interrelationships of variables cannot be represented in a finite model. Artists produce artwork and they work “in a particular situation, use[ing] particular materials and employ[ing] a distinctive medium and language” (Schön, 1983, p.79). Through their work, the artists always confront unpredictable events and unintended consequences. The process of making art in each case is unique and the artists cannot deal with this uniqueness by applying standard theories and techniques. They, therefore, have to spend time to find the problem which arises during such accidents, and have to construct an understanding of new complex situations by sinking in, surfacing, criticizing the way the problem is framed, and proceeding. They must then try to reframe it, in accordance with their initial appreciation of it in order to change the situation.

Schön (1983) calls this process “a reflective conversation with a unique and uncertain situation” (p. 79). Reframing in order to step into a new situation requires the artists to make themselves a part of the situation and to conduct an experiment in order to discover what consequences and implications can be made to follow from it. But at this stage
something unintended happens when the artist reframes the situation. When these accidents occur through the practice of art, three controversial issues are brought to light. These issues are (a) recognizing the serendipities, (b) directing the accidental events to the desired result, which eventuates in an artwork, and (c) the role of the artist. The artists in making art respond to the complexity of the situation ontologically and present specific performances that make their work unique. In most cases, the responses cause unintended effects on the situation. The situation talks back and, reflecting on this back-talk, the artist is led to new understandings of the situation. Consequently, new judgements about the situation, new actions, and back-talk from the situation repeat in a continuous spiral.

*How can an inquirer use what he already knows in a situation which he takes to be unique?*

When artists encounter visual problems through their work, they begin to apply their prior experiences. But, the new situation is taken to be unique. What do they do in these situations? They have built up a repertoire of examples, images, understandings, and actions through accumulated experiences. This repertoire is accessible to them for understanding and action. At first, the artists ignore the uniqueness of the situation and treat it as if it is a class of familiar things. They treat an unfamiliar, unique situation as something already present in their repertoire, as both similar to and different from the familiar one. At the beginning, they are not able to say what the similarities or differences are, and are also unable to articulate them. The artists merely try to see the situation as one that they have seen before and also attempt to act the same way in this situation as in
that one. Schön calls this process, the process of seeing-as and doing-as and says that it “may proceed without conscious articulation” (p.139). He considers

the inquirer may reflect on the similarities and differences he has perceived or enacted. He may do this by consciously comparing the two situations, or by describing this situation in the light of a tacit reference to the other. (p. 139)

Bringing our past experience to bear on the unique case is possible because of our capacity to see unfamiliar situations and to act similarly to how we would act in a familiar situation. Seeing-as and doing-as allow “us to have a feel for problems that do not fit existing rules” (Schön, 1983, p.140). Being able to see the elements of the new situation as the elements of our repertoire enables us to make sense of the uniqueness without reducing the situation to instances of standard categories. Furthermore, “each new experience of reflection-in-action enriches our repertoire” (Schön, 1983, p. 140).

Reflection-in-action in a unique case may be generalized to the other cases, not by giving rise to general principles, but by contributing to the practitioner’s repertoire of exemplary themes from which, in the subsequent cases of his practice, he may compose new variations. (p. 140)

The next step after “seeing-as” reframe the present, unique situation based on the repertoire of examples, images, and descriptions. When artists see a new situation as some element of their repertoire, they reach for/arrive at a new view that must still be discovered in action. Reflection-in-action necessarily involves experiment.

Schön’s theory has been (rightly) criticized for its lack of clarity of the notion of “reflection;” as well, confusion among “practitioners” and “educators” makes the application of his theory problematic (Bleakley, 1999; McLaughlin, 1999, Newman, 1999; VanManen, 1995). However, critics like Barry Sandywell (1996), claim that theories of reflection exclude the “other” in the context within which reflection occurs,
which is a less merited criticisms because Schön’s proposition does insist on exchange and mutuality of reflection between the producer, the environment, and the produced (p. 249).

Although Schön’s attempt to reduce uncertainty within the complex context of creation, is useful for a pedagogy of skills and skilful practices, it is nonetheless potentially dangerous as an a-critical privileging of technical rationality.

In sum, the process of making art is replete with chance, accident, surprise, the unpredicted and the unpredictable. While this is not new, it is in Deleuze that we see the beginnings of a new vocabulary and conceptualization of both “creativity” and “chance.” In Deleuze, art becomes an event, creativity is driven by differentiation, and “incorporeal entities” become a significant focus of revisioning creation.
Teaching Artistic Creativity

The fact that it is so hard to know what it might mean to teach art tends to keep teachers going: it spurs them to teach in many different ways. In that sense, teaching physics or television repair is much less engrossing, because there is no need to continually question the enterprise itself. So in that sense there is nothing wrong with our inability to say exactly what we’re doing. But it is also important not to forget that it is, after all, a logical contradiction, and that art instructors work right at the center of the contradiction. (Elkins, 2001, p. 96)

The following illustrative case is prefaced by a brief history of art education in order to de-naturalize and contextualize the practice. We think of artists in a paradoxical way; they are “taught,” and yet we attribute their creativity to sources generally outside or other than the classroom. We have a long and complex history of art education, which, through the lens of the following case, will appear to erroneously conflate creativity with art instruction. It will be important to keep in mind throughout the following discussion that the temptation to judge what happens in the teaching studio, while a real temptation, would not be in keeping with this thesis’s broader conviction that positionality itself is problematic; I wish here to remind the reader that the illustrative case is meant to demonstrate one particular set of problems, and they are those having to do with chance. As such, to draw conclusions, to point to inconsistencies as somehow correctable, will negate my invitation to the readers to make sense of the teaching studio as they will, rather than how I will.

What does it mean to be taught/become/be an artist? Is it one’s abilities or one’s thinking and sense-making of the world? Since the Renaissance, art education programs and so art departments, courses and instructions have become culturally naturalized in Euro-western cultures. But distinct shifts in teaching practices and the institutionalization of these
practices have occurred over time. The evolution of art education in the west can be traced through the changing roles of artists as well as evolving philosophical theories. Efland (1990) views these changes as resulting from the influence of cultural policies on art education. He argues that

the ways the visual arts are taught today were conditioned by the belief and values regarding art held by those who advocated its teaching in the past. Many of these early supporters were socially powerful individuals who influenced the educational policies of their day. For them, the teaching of art was neither capricious nor accidental; but rather it was done to further social, moral, and economics aims. (p. 1)

In Western tradition, the history of art education is rooted in the humanities (Efland, 1990). What was taught to Greeks and Romans is unknown to us. McKeon (1941) asserts that Aristotle in his Politics evokes technical books on painting, sculpture, and music, but these are all lost. Views of art education have been derived from medieval workshops, Renaissance art academies, and the subsequent modern art schools.

The university, in its current form, started to develop about the twelfth and thirteenth centuries, but initially it offered no training for artists. Instead, one would go to workshops, spend two or three years as an apprentice, graduate from one master to another, and finally join a local painters’ society. This is a “journeyman-apprentice” model; the job of the journeyman-apprentice was to assist the master by grinding pigments, preparing panels, painting in backgrounds and drapery; and making copies. To be considered a master, the journeyman-apprentices would eventually create their own work (Elkins, 2001).
With the Renaissance, academies developed in opposition to the medieval universities. The early academies, modeled on Plato’s academy, were very informal and were not concerned with art, but in the sixteenth century attempts were made to merge informal academies with medieval universities. Mannerist “taste tended to make the academies more rigid, less informal and loose” (Elkins, 2001, p. 9). Art academies began to work in such a serious atmosphere. Unlike the empirical, disorganized, and unplanned learning in the workshops, where manual dexterity was the goal, students were now expected to develop mental principles to guide them. Hence, the curriculum of these art academies, as Elkins (2001) describes, usually included: mathematics (perspective, proportion, harmony, plane and solid Euclidean geometry to acquire “measured judgment” and a “conceptual foundation”) as well as anatomy and life drawing because of the belief that (a) the mind was mirrored and expressed by the body, which was (b) made by the Divine Architect. Study also included natural philosophy which was comprised of physics (natural laws relevant to art making), physiognomy (the science of facial expressions as signs of particular mental states), and the doctrine of humors (holding that mental and physical well-being depends on a balance of four bodily fluids.)

The study of inanimate objects such as drapery was required for the students but it “came after the more essential classes in theory (mathematics) and in the human soul (dissection, life drawing, natural philosophy).” Architects learned everything a painter knew at that time and more because of the correlations supposed between the proportions of human body and buildings (Elkins, 2001, pp. 9-14).
At the end of the sixteenth century, the domination of mannerism in academies came under attack by the establishment of new academies such as Carracci’s Academy which attempted to return to the standards of the High Renaissance, that is, to those established by Michelangelo’s and Raphael’s drawing style, Titian’s approach to color, and Correggio’s aristocratic style of Lombardy. Many of Carracci’s choices, including the rejection of contemporary art, the search for a certain “golden age” with a better art, the selection of certain elements from artists and composing them into a new art, have remained in art schools (Elkins, 2001).

In the Renaissance and later, in the Baroque period, invention became the goal. Students were taught skills to invent perfect, accurate and harmonic but not original works and were expected to bring their personal manner under the control of standardized style.

The nineteenth century is the time of rebellion against codified standardized fixed Baroque instruction. Romanticism, with its emphasis on subjectivity and individuality replaced Baroque uniformity. The Romantic revolt against formulaic analyses promoted by Baroque academies as well as its idea of artists as individual genius still exists in the some contemporary art studio instruction. Still, in modern schools, students were (and are) encouraged to find their own voices and styles.

In the middle of the nineteenth century, along with industrial development and mass production, the demand for skilled craftsmen increased. Therefore, art schools began to think about including applied and industrial art in their curricula. Modern art schools
were established in response to this need. Bauhaus in Germany, for instance, has had an extraordinary influence on current teaching practices in many art education programmes. 

Art instruction in Bauhaus began with a six-month program of introductory courses training students for three basics: the senses, the emotions, and the mind. The next stage was “a three-year program in which students specialized in an area of their choice” (Elkins, 2001, p. 33), learning materials, geometry, construction, making models, and studying the history of art (Poling, 1986). Art instruction in Bauhaus completed by supporting graduates to find job in local industries.

What we know as art schools today emerged after World War II. Elkins (2001) describes contemporary art education as follows:

> For practical purposes current art instruction doesn’t involve a fixed curriculum, a hierarchy of genres, a sequence of courses, a coherent body of knowledge, or a unified theory or practice. In large art schools, any two students will be likely to have very different experiences of their first-year program, which is supposed to be the common foundation for future work. … In art departments, students’ experiences differ widely year by year. Since instructors are generally free to devise their own class plans within the general guidelines of the school or department. (p. 38)

According to Elkins, contemporary art instruction, particularly “a great deal of what is made in studio classes is made possible by, and expressed in, the traditions of post-Renaissance Western art” (p. 44).

Clearly then, art teaching has been a reflection of a period’s social/political context. As access to art education has historically been affected “by class, gender, and the general social status of the visual arts as a subject for study” (Efland, 1990, p. 2), the content of art instruction has been influenced by the needs and ideologies of the time. Where art was
conceived as a matter of balance in the Renaissance academies and was a mediation between the ideal and the real, it is promoted both in modern and post-modern schools as a function of “[h]arshness, stridency, excess, shock value, crudity, monotony, enigma, radical ambiguity, hermeticism, fragmentation, impatience” (Elkins, 2001, p. 11).

In Europe, the study of art has in some periods been “the privilege of a social elite,” while in other periods, it has been regarded as something “fit only for slaves and the children of artisans” (Efland, 1990, p. 1). In Europe, during the nineteenth century, the fine arts were a male realm, and working-class women were allowed to learn only the decorative arts. If the ideologies dominating in art education during the 1970’s and early 1980’s were Abstract Expressionism (viewing art as personal struggle, involvement, and self-actualization) and Elitism (valuing intellectual inquiry and analysis) (Madge and Weinberger, 1973), today, in post-industrial societies, the dominant ideology is generalization (for public) and democratization for more consumption.

Teaching art has always been controversial, and there has always been uncertainty about the possibility of teaching art, and/or about what kinds of art can be taught. Rapid changes in art practices, in art technologies, in educational institutions (Koroscik, 1996), the ubiquitous demand for creativity, and the post-modernist theories extant in art departments, have turned art teaching into a paradoxical practice. On the one hand, the promotion of post-modernist art in art departments now includes, with their attack on elitism and the seriousness of art, the denial of hierarchies such as those between low and high art, avant-garde and pop art, fine and decorative arts, white and non-white art, good
taste and bad taste, and so on. On the other hand, the consideration of art as a systematic intellectual pursuit and consequently as an academic subject, with the institutionalization of art instruction, with all its systematization and categorization, makes teaching art a highly inconsistent exercise (Elkins, 2001).

The “teaching,” of art is challenged by questions such as: is directing a student to be creative the objective of their work? Can a student be taught to be creative? Is everyone able to be creative or are only some innately creative? Should art instruction be universal, free? Is it unbiased and open-minded, or has it its own purposes and dogmas? How do art educators recognize good art? How do they know that what they teach is good for their students? How do they know learning art is better for students, than, for instance, playing chess, as Duchamp did?

Prelude to the Illustrative Case

Is creativity teachable? Some hold that creativity cannot be taught or be improved upon (e.g. Kant, 2007; Lombroso, 1910; Plato, 1955), while others claim that it can be (Csikszentmihalyi, 1988, 1996; Parnes, 1977; Sternberg and Lubart, 1996). The former group argues that the best we can do is to avoid obstructing its expression and development. The latter (and increasingly common) group, conversely, proposes specific procedures, methods, techniques, and programs to enhance creativity.

Mystical approaches to creativity define creativity as the prerogative of supreme beings, and these support the idea that “creativity is not teachable.” According to these
approaches (e.g. Lombroso, 1910; Plato, 1955) creative people are “geniuses” who are born creative and are inspired by muses—a divine madness claiming the creative person is an empty vessel filled with inspiration by a divine being (Sharma, 2004).

Current predominant theories on creativity tend to argue that creative ideas emerge from a conscious effort to balance analysis with the sub-conscious (Sternberg and Lubart, 1999). The psychodynamic approaches attempt to understand creative behaviour. They study creativity as an outcome of the tension between conscious reality and unconscious drives. Psychoanalytic approaches examine adaptive regression (the primary process) and elaboration (the secondary process) in a creative process (Kris, 1952; Schafer, 1958). Adaptive regression refers to the interruption of un-modulated thoughts in consciousness during active problem-solving or sleep, daydreams, etc. Elaboration refers to the process in which conscious and preconscious elements are rationally organized into a creative solution. Wallas’s (1926) model of the creative process is one of the earliest models, and posits four phases of creative thinking: preparation, incubation, illumination, and verification. Ripple (1999) defines preparation as the stage in which “the conscious mind does all the heavy lifting” (p. 630). However, the unconscious takes over during incubation and illumination. In the last stage, verification, the conscious mind becomes dominant again. Subsequent to Wallas’s model, a number of related models were developed to try to explain how the sub-conscious affects creative thinking, and how creativity emerges from uncontrollable events, both internal and external. Later, rejecting the extraordinary role of sub-conscious in creative thinking, Perkins (1981) argues that
random events cannot be the sole source of all acts of creation. His “ideate” implies both a sub-conscious and conscious generation of ideas.

All these approaches attempt to study the tension between the conscious and the unconscious, which helps to explain how one might strive to intervene, on a conscious level, to enhance creativity. This assumption is very common among art teachers, in my experience.

Psychometric approaches address creativity as a potential existing in everyone and researchers with this approach indicate that creativity can be improved through training. They offer tests and measures, and discuss the characteristics of creative people and the efficacy of educational interventions. Most of the research on creativity has had a focus on the individual, and how they can become more creative. However, socio-dynamic approaches focus on the importance of social and environmental factors on creativity.

In general, the approaches to creativity, as Ripple (1999) identifies, can be grouped into two fundamentally differing models which each invite a strategic deployment of tools for the enhancement of creativity: the deficit model and the barrier model. Ripple writes,

One set of strategies is aimed at adding something; the other, subtracting something. Both strategies are included in methods, techniques, materials, programs, and procedures. In addition, emphasis is put on construction of environments conducive to the development and expression of creativity. (p. 633)

The deficit model presumes creativity, and presumes that skills and abilities that are not present in an individual collection of behaviors must be learned through instruction and training. The barrier model assumes that potential for creativity is inherent in people’s
behavioral repertoire. Hence, the deficit model proposes the packaging of techniques, instructional programs, exercises, etc. to enhance creativity and aims at components of creative ability such as fluency, flexibility, and originality, while the deficit model proposes the removal of barriers in order to help people express their creative natures; this view identifies the elements which affect creativity such as attitude, interest, and motivation (Ripple, 1999, p. 633). Both of these two models are trackable in the language that art schools use in their advertisements (Elkins, 2001).

Creativity has been viewed in terms of problem solving and hence, different methods have been developed to teach the types of problem solving skills for different kinds of problems. Cannatella (2004) in his essay, *Embedding Creativity in Teaching and Learning*, notes “how certain kinds of creative activity can substantially transform educational practice without necessarily succumbing to any … conceptions of creativity” (p. 59). He believes that creativity can only be enhanced by means of devotion to a particular practice and by immersing oneself in a “type of personal address that revolves and combines in various ways what Maurice Merleau-Ponty refers to as ‘self-others-things’” (p. 59).

Various systems of art education have been based on the acceptance or denial of the possibility of teaching artistic creativity (Efland, 1990; Elkins, 2001). The myth in the modernist view of art education is that art instruction focuses on “teaching creativity” or “personal voice.” This view seems contradictory in itself. What is considered “art” in the modernist paradigm is that which is rare and exceptional. But art in the modernist
paradigm, also, it seems to me, to be a progress and structure. Hence, in reality what is taught in art studio courses is largely skills, and a general knowledge of art, not artistic creativity. Teaching the chaotic and accidental nature of art cannot be practiced in a conventional academic education.

There are some attempts to answer questions about the complexities of teaching and learning studio art. Most of them focus on learning processes (e.g., Cornock, 1984; Getzels and Csikszentmihalyi, 1964, 1976); the paucity of research on teaching necessitates more studies and greater contemplation. Two groups of studies can be identified through literature reviews, which: 1) look at patterns of ideology, student thinking, and social structure within art schools (e.g., Adler, 1979; Madge and Weinberger, 1973); 2) examine actual learning and teaching practices within those situations (the context of most of these studies are high school) (e.g., Dinham, 1987; Janesick, 1982; Sevigny, 1977).

The focus of early studies is more on art learning than art teaching and includes:

- the relationship between students’ personalities and attitudes to their creative thinking process and performances (Getzels and Csikszentmihalyi, 1964);
- the methods they use to formulate artistic problems (Getzels and Csikszentmihalyi, 1976);
- the differences in students’ school experiences, choices of majors, and future career plans (Strauss, 1970);
• students’ beliefs and interactions in an English art school (Madge and Weinberger, 1973);
• the relationships among student personalities, beliefs, and goals (Strauss, 1970);
• student engagement in the creative process (Cornock, 1984).

Some studies deal with the influence of the art world on departmental, instructional, and student beliefs and behaviours (e.g., Adler, 1979; Madge and Weinberger, 1973). Adler (1975) investigates the influence of ideologies on institutional policies, politics and instruction, and Goldin (1973) examines the vision shaped by university art schooling. Some investigate actual learning and teaching practices, and study teaching and learning in specific contexts. Some researchers (e.g., Dinham, 1987; Janesick, 1982; Sevigny, 1977) explore interpersonal interactions and the relationship between an instructor’s philosophy, the curriculum and instruction. They examine studio classroom interactions by considering the art teacher’s philosophy and values in relation to instructional methods and curricular decisions, and in further relation to social interactions, and student attitudes (Pariser, 1981). Concentrating on the employment of graduates with majors in studio art, Thaller (1993) suggests that art departments need to offer career-oriented art courses to help art students know what to do with their majors in art and how to prepare for a career in art after graduation.

Some scholars focus on cross-cultural research in the fields of art education. For instance, Staikidis (2004) conducting a participant-observation study, examines the capacity of art education curricula to reach students of differing cultures in North America. In her
research, Staikidis attempts to find a conceptual framework for making art in a situated context within an indigenous artistic living tradition, suggesting the possibility of broadening Eurocentric art studio curricula and pedagogy in higher education.

Stokrocki (1981) studies the social, philosophical, environmental, and pedagogical dimensions of a ceramics class. James (1996) presents a holistic overview of interactions in a sculpture studio class. Much work (e.g., Adler, 1979; Cornock, 1984; Dinham, 1987; Getzels and Csikszentmahalyi, 1976; James, 1996; Janesick, 1982; Madge and Weinberger, 1973; Strauss, 1970; Sevigny, 1977; Stokrocki, 1981) has focused on the undergraduate experience in art and design-project-based learning, problem-based learning, negotiated learning agreements, integration of theory and practice, innovative ways to negotiate assessment, analysis of learning style, online methodologies of delivery and assessment, and the attempt to move from a teacher-centered approach to a student-centered approach, of which the latter encourages student responsibility in learning and in effect, encourages the notion of lifelong learning. There are almost no studies on visual art studio practice focusing on the contingent nature of art and teaching. The paucity of research on teaching art indicates that the complex and playful nature of the art-making process may not yet be well understood.

*Teaching art: an experiential reflection*

I started teaching graphic design courses at the university when I had had enough experience teaching drawing and art to high school and college students. In my first teaching experience at the university level, hoping to do a “grand job,” I began by
teaching visual and color basics courses in the graphic design department. Power struggles in the department aside, I found teaching art within this context a challenging endeavour. Although my teaching approach differed from other more traditional instructors, I found that I too brought with me those aspects of my artistic framework that had been formed by my formal art education. Formal art education in Iran, over the last century, has been extensively affected by Western models, and specifically modernist ones. There is a tendency in Iranian higher education studio art courses to teach primarily from a Eurocentric skills-based perspective. My acquaintance with post-modern theories led me to search for new models of teaching art outside of prevailing Euro-centric modernist models. Coming to Canada to pursue my PhD in education provided a good opportunity to learn more about the Western origins of the Iranian educational system, and has provided me with foundations for thinking about a more localized model of art teaching in Iran in the future.

Thus, I saw two fundamental tasks in front of me: the first task was to inventory the philosophy, pedagogy, and meanings within Western culture and the second was to investigate the challenges of actual art teaching practices—of the ways in which art professors do art and transfer their experiences to the students who present their understanding through the process of making their own art. Each of these tasks is multiple in that it provokes necessary digressions and analysis of many interconnected issues. I found that using a rhizomatic, non-hierarchical structure can show most accurately what the practice of art and teaching art is: multiplicities of lines, constantly
moving points, “lines of chance, lines of hips, lines of flight” (Deleuze and Guattari, 1987, p. 24).

Here, in the illustrative case, is yet another node: a reflection on actual action. It has been argued that individuals’ reports of their cognitive and behavioural processes are limited to general procedures they may have used (Mac and Ward, 2002). Further, individuals report on their implicit theories about the cause-and-effect relations of the phenomenon instead of reporting what they actually do because they do not truly introspect when reporting on their cognitive processes (Glass and Arnkoff, 1997). I decided to explore teaching actions in a real-life setting (Jay and Perkins, 1997)—the artist’s interactions with the environment in which she works and teaches.

My language in this node is not a language of statistics, of purpose, method, evidence, and conclusion. I do not believe that scientific language is able to explain issues and interactions happening day to day in a studio classroom. Despite the fact that I developed a methodology, underwent an ethics review, and collected “data” for my research in a typically Modernist manner, the analysis here is a holistic attempt to present, in this node, both my conversations with a professional artist who teaches art, and my observations of her teaching an introductory studio classroom in a Canadian university. I attempt to illustrate the dialogue between the instructor’s teaching experiences with mine in order to make sense of art teaching practices with attention to the problematic of creativity and the unintentional accidental nature of art making and art teaching.
The Illustrative Case

Between January and May 2006, I observed a studio art classroom to see what happens in one Western art studio, as opposed to the somewhat derivative Western studio practices of Iran today. Certainly, my focus was not on the students’ behaviour in their learning processes, but instead on the teaching process of a professor who also was a professional artist, so I could reflect on the art professor’s teaching actions, beliefs, and cognitive and behavioural processes.

After reviewing a number of possibilities, I chose to observe Mary’s class based on the following criteria; she

- is engaged in visual arts;
- is a faculty member with intensive art teaching experience;
- appeared to me to have a post-modernist approach to making and teaching art;
- is a well-exhibited professional artist;
- has a willingness to be observed.

19 The name of the participant has been changed to protect anonymity. Since students commonly called the professor by her name, she is referred to by her pseudonymous first name, Mary, throughout this report.

20 Graphic design is my own discipline; therefore, visual arts teaching and learning have always been both my love and concern. Literature reviews have informed me that most research has emphasized learning rather than teaching art. I hope that this research, by focusing on the complexity of teaching processes, promotes a better understanding of teaching visual arts.

21 Mary’s work shows what many might describe as characteristics of post-modernism. Her work is drawn from imagery in Western and more notably Eastern fables and myths. She investigates concepts, beliefs, habits, attitudes, and general assumptions of particular cultures in her work. She also explores the political and socio/religious imagery of popular art traditions and Eastern cultures within the context of the West’s driving socio-economic and counter-cultural forces. At the time of my selection I assumed that what appeared to me to be her post-modernist approach to art making might address or include the problematic of chance and chance happening in her teaching of art.

22 A class is a self-contained unit composed of the teacher and students, offering little, if any, direct interaction with outsiders during class time, and, since teaching is often a rather private experience, the
Mary set no limits to my participation in the classroom, which meant I could actually follow her from easel to easel in the introductory visual art course for first year university students in Fine Art. Of the 29 students, only a few were advanced art majors; most of the students were typical of students in an introductory art course who “are uncertain about their academic direction, struggle to balance their personal life with their academic life, have little formal art education, and yet who are eager to gain an understanding of themselves through art” (James, 1997, p. 77).

Once introduced to the class, I explained that I would be observing Mary rather than them, although there might be some photographs taken of their works in process, and/or some reference to their conversations with the professor as complementary information, pending individual approval.

The studio course was organized around two assignment cycles: 1) life studies in which students had 4 days to complete 4 studies on paper or canvas, and 2) a project that was involved with the development of a concept in more than one visual medium (i.e. a free standing painting/installation/sculpture). I attended every three-hour class session twice a week over a six-week academic quarter. I hoped to observe project explication, initiation, historical contextualization, technique discussion, the teacher’s observation of students’ practices, the teacher’s interactions with students, the teacher’s responses to students,

presence of an observing outsider in all sessions of a course has the potential to create tension, guardedness, and unnatural performance. Therefore, I needed to find a participant who not only welcomed my presence in class, but who would teach, as much as is possible, as though I was not present.
work based on teacher’s comments, the teacher’s role in peer-evaluation session, and the
teacher’s evaluations. 36 hours of observation was followed with three open-ended
(Leclerc and Gosselin, 2003) post-class interviews with the artist/art educator.

This node is my reflection on the material arising from my observations and Mary’s
catalogues, articles, and classroom handouts, and consists of “words written in documents
or spoken by interview respondents” (Silverman, 2000, p. 821). I recorded all spoken
communication during studio work sessions on a digital tape recorder, and for a complete
record of spoken communications, I took field notes recording key actions, images and
words spoken by the participant and her students. I made descriptive notes about the daily
context of the classroom, and documented interviews by audio tape. The post-class
interviews were especially helpful for me in that it was in these moments that my
erroneous assumptions, culturally and experientially based, were complicated by Mary.
For instance the discrepancy I saw between Mary’s relatively post-modern work and
seemingly very modernist teaching was explained by Mary to be a function in part of the
fact that the Western academic sphere is a distinct economy in which the student is
increasingly seen as a consumer, whereas in Iran, where university education is free, such
a perspective would have no bearing on the mechanics of the classroom. While it is
possible to view this explanation as either an ingenuous or defensive legitimization of her
modernist methods, it is also possible to see the explanation as, for her, simply true.
Again, the impossibility of delimiting modernism against post-modernism makes the task
of positioning her teaching as solely one thing or another, and thus it is vulnerable to
challenges from both ends of this spectrum. This is in some ways inevitable, and mimics
my overall argument – there is no monolithic position in a field, a discipline, or an individual.

I also took photographs with annotations of student work-in-progress, which helped me to refine observations made regarding visual chance events, the teacher’s actions and instructions. I kept as much as possible to the periphery of the activity, and was assured on occasion by both the teacher and students that I was causing no discomfort.

Although I had pre-formed questions in mind about the studio activity and the instructor’s practices, discussions with Mary were very spontaneous, and I let them follow their own course. Our conversations were mostly about:

1) the artist/art educator’s interpretation of the nature of the art-making process—how she evaluates the new situation formed by her actions, the unintended consequences, how she chooses which accidents effectively facilitate a promising result, how she deals with the uniqueness of the moment in the process of making art, how she applies the experience she has accumulated in her earlier practice, how she controls the nature of a practice rife with contingency and control-resistance and accidence, as well as

2) Mary’s teaching theories, her method of helping students to reflect-in-action, the means by which she directed them to account for the unpredictable and the accidental in order to choose those particular serendipities that were most promising, and how to apply them purposefully and effectively.
Artistic and teaching experience is, as is any kind of experience, inter-subjective and embodied in the actual. It is not individual and fixed, but social and contextual. Being an art teacher or an artist can never be singular. The practice of either is always dependent upon a multiplicity of locations and positions that are socially constructed. It was the combination of interview and observation that effectively created a more whole understanding, for me, of Mary’s teaching practice; one without the other would have provided a far more partial picture.

There are two main themes arising out of the conversations/interactions between Mary and me: 1) The difference between what we think we are doing and what we are doing, as students and teachers, in the university level art studio classroom, and 2) the feasibility of teaching “contingencies” as central to both artistic knowledge and artistic creativity in such a context.

Visual art studio instruction

A visual art studio classroom in a university art department is a physical context for individual exploration of material, form, and concepts; for magical transformation of raw materials into a piece of art. The process of art making is individually unique and unpredictable. It can be defined as a professional practice of self expression, in its more restricted sense, or as a practice of cultural/political activity—a process of making socio-political meaning. Either way, the students, and the instructor are involved in complex interactions. I can remember, before studying art at university, imagining school as an exciting place in which to explore artistic and social issues with other people; instead, I
found that my classes offered little discussion about the relevance of art and the role that it can play in our lives. Later, when I began to teach at the undergraduate level at the Art University in Tehran, I started to think about the structure of school, the curriculum and the nature of the teaching process. I began to wonder whether or not my own artistic sensibilities had been/would be (re)shaped and or (de)formed inside academic walls. While the process of art making is complex, unpredictable and usually chaotic, what exactly was it that would now and had been guiding my decision making processes, both in the classroom, as a teacher and outside it, as an artist? These questions have remained with me, and form some of the basis for the following analysis.

Through my observation of Mary’s teaching the studio course, the focus of our conversations and discussions was on what actually takes place in a visual art classroom, and in such a context what a teacher can do. The following is my reflection on this theme.

*What is “teaching art?”* Teaching is defined in the *Oxford Dictionary of English* (2005) as “the act, practice, occupation, or profession of a teacher,” which of course begs the question of what a teacher is, the definition being tautological. “Good” teachers are those who have high degrees of motivation, enthusiasm, and expectations, as well as the ability to communicate, to listen, to engage and inspire, and to take risks (Weimer, 1997). But in essence, teaching can only be examined and understood by seeing what a teacher intends to teach, in a specific setting, to certain audiences, at a particular moment. For this reason, it was helpful to initially review Mary’s notes and classroom handouts, to see how she framed her intentions and what, specifically, she intended to teach.
According to Mary, good teaching means a constant passion for learning. She views the university more as a learning institution than a teaching one. For her, good teachers are those who constantly search and then share their findings with their students:

My best teaching is by example, mainly through my own studio research—The studio research results in material and aesthetic information that I share with the students to use towards their own goals, if and as they like. (Mary, Teaching Philosophy, p. 1)

Her stated purpose is to help “students obtain the tools to find their own way” (Mary, Teaching Philosophy, p. 1). She explains to students that her aim is to help them “find their own voice.” Hence, it is Mary’s main teaching struggle to search for a way that enables students to develop “their own personal aesthetic direction,” “critical abilities,” and “independent thought.”

In her teaching manifesto, she identifies the following strategies that she expects will foster this goal:

- Always point students to the best examples, historical and current;
- Encourage them to learn how to learn by seeking examples and information through personal research, for example, get to know library resources and use them often;
- Schedule regular group and individual critiques and insist on participation;
- Encourage scepticism and humility in more or less equal proportion;
- Ask that students seek other responsible opinions;
- Insist they develop defensible premises regarding their work;
- Encourage exploration, intelligent risk-taking and informed personal responsibility for what is said and done;
• Develop and maintain effective and clear communication in presenting information;
• Develop and maintain fair and transparent evaluation processes;
• Be vigilant regarding the educational value of course materials;
• Maintain a sense of humour throughout” (Mary, Teaching Philosophy, pp. 1-2).

In my observations, Mary did, in fact, apply many of these strategies, which are themselves not inconsistent with art school teaching in a number of venues to which I have been exposed.

*Teaching to individuals:* Art instruction, as it is currently practiced in modern universities, is similar to the other academic disciplines such as natural and social sciences in terms of being seen as inclusively or exclusively a systematic, intellectual pursuit (Elkins, 2001). However, visual studio art teaching and learning differs in both goal and structure from the more formal disciplines such as the sciences, languages and even music. Students in visual art today do not all necessarily need the same information, unlike those in virtually all other disciplines, where structural/mechanical basics are essential (i.e. musical notation, elemental tables, social history, and so on). While it was certainly true for several centuries that to be an artist meant, of necessity, one had to have a thorough knowledge of pigment mixing, color theory, formal composition, and so on, this is no longer the case. There are several renowned artists who never touch a brush, undertake a serious study of color theory, or any of the related traditional skills associated
with art. In today’s studio, there is some attention to these aspects of art making, but they are by no means the direct focus of instruction.

In a studio, an instructor shows and discusses hundreds of slides, but perhaps only a few of these exposures will inform a particular student’s work. Since making art is highly individualized and subjective, students are expected to find their own voice, and their own personal aesthetic. Students working in a biology lab are not asked to develop an individual voice. So teaching within these parameters makes for a problematic, complex practice, even in relation to the teaching of other disciplines.

Studio teaching is largely based on one-on-one interaction between the teacher and the student, rather than on lectures. The instructor walks from easel to easel, talks with the students individually or in small groups, and makes a few comments on their work in progress. It appears that these conversations

- Are informal, spontaneous and most of the time friendly;
- Do not pursue one topic and a linear path to a specific conclusion;
- Are open-ended;
- Usually raise more questions and sometimes confusions.

These conversations are not like formal debates, nor are they always persuasive. Nobody importunes too emphatically on an idea. The spontaneous, unfixed attitude in these conversations acknowledges that the problematic cannot be easily resolved, and that both
students and the instructor need to continuously reflect on what they do. As well, the conversations are often as gestural and mimetic as they are verbal.

Mary’s teaching followed the familiar routine seen in many studio courses; she usually began the class with a 15-30 minute talk outlining the day’s plan and tasks. These opening talks include:

- Information about the materials and techniques;
- Application of various qualities and capacities offered by the materials and techniques;
- Information about related visual and theoretical references and resources;
- Health and safety advices for working with materials;
- Reminder of regulations and obligations of working in the studio classroom.

After, she would go to her office in the corner of the studio and let the students work on their pieces. She usually came back, at varying intervals, to supervise students’ work, to give advice, to express concerns, to compliment or correct mistakes.

This way of teaching art, through easel by easel conversations, has been inherited from the Romantic and modernist schools based on the notion that art depends on individual’s inspiration and creativity. For modernists, specifically Romantics, each artist is an individual, so the idea of “group” education is impossible. But the idea that inspiration is central to artistic creativity seems to me to have always been controversial in art history and has raised a serious debate on the feasibility of teaching art; this is the central paradox of art teaching.
What is taught in visual art studios?

It is the explicit or implicit assumption that what is taught in a studio classroom is artistic creativity or “voice”. The distinction between the two referents, “creativity” and “voice” would be an interesting one, if it exists. There is little information in the literature about when “voice” became a trope indicating creativity, but in my experience, the typical application of the term alludes to the specific individual’s manner and means of expression. How this differs from “creativity” has not been sufficiently addressed, but it seems clear that “voice” is meant to imply a singular and unique form of individual, de-contextualized creativity.

When Mary claims that her teaching purpose is one of “helping students obtain the tools to find their own way,” she points to this assumption. However, if we think of voice as a conflation of itself with creativity as a solely modernist project, we would be mistaken—in my experience, post-modernist artists also speak routinely of their own voice, as a thing akin to or part of their own creativity.

Can art and creativity be taught? Is artistic creativity an inner necessity, a gift and a potential or can it be deliberately acquired? Creativity is, for many people, a mystery; some believe “that it should remain a mystery” (Johnson-Laird, 1988). They believe that creative people, specifically artists, are not so by choice, but by some inner necessity. Conversely, some argue that “there is nothing mystical in the processes that underlie thinking” (Schank, 1988, p. 220). There are attempts to measure creativity, propositions on how to enhance it.
Mary, in her *Teaching Philosophy*, asserts,

> Some believe that many of the arts cannot be taught or learned; that an artist is born, not made. This may be true for some practitioners but for the vast majority it is not. Native ability aside, visual arts disciplines are learned through hard work” (Mary, Teaching Philosophy, p. 1).

Here, she suggests that visual arts can be taught through hard work. However, she is not clear what she means by “visual art disciplines.” Later, when I asked for more clarification, she stated, “I don’t think creativity is teachable, but to give the tools to be creative and recognize that moment, yes, I do believe so.” But what are these tools? If artistic creativity cannot be taught, what *is* taught in an art studio course?

Mary felt that prior to reflection on what she does in the studio with students, it was necessary to discuss first what she actually *can* teach in such a context. She views her class as a component of a larger system which defines the borders of her work, and that what she teaches is less a matter of her choice than a contextual imperative.

What Mary described as the context in which she teaches can be discussed in terms of

- The structure of the university
- The academic course
- The students (consumers) in her class

*The modernist paradigm of education:* Mary situates her class in a larger educational system:

> We must define the context. In this particular context it’s a first year class I’m teaching, and the first year class is difficult, then it’s a foundation class, and I simply teach four areas, that is film making, painting, sculpture, and video. The
first two years are spent in giving them a basic knowledge of the tools and also the way, how to use equipment, so as to just give them a primer so to speak of the visual arts. (Mary, Interview I, Jan. 25, 2006)

Mary’s class is an “introductory course” in a “four-year program” in “a liberal arts department” in “a university.” What do these terms mean? At the very least, the hierarchy of category means that her teaching context can be characterized as a highly modernist paradigm of education.

The contemporary form of the university, structured in disciplines, departments, courses of study, etc. is a modernist paradigm of education created for an industrial society; there are aspects of the assembly line here. Students are organized by age, separated by discipline, and educated in batches of 25 to 30. They study for designated periods of time, and after completing a specified number of courses, they are awarded diplomas. This is a linear mass-production model, characteristic of the Newtonian-Cartesian cosmology and methodology. Descartes’ methodological rules, clear definitions, reductive methodology, and careful evaluation provided a foundation for the curricular methodology (Doll, 1993). In such a paradigm, education is defined in terms of a mechanistic and scientistic model, and educational goals are based on the priority of efficiency and standardization. As Cubberley (1916) wrote, “Our schools are, in a sense, factories in which the raw products (children) are to be shaped and fashioned into products to meet the various demands of life” (p. 338). This view of education and schooling coincides with the factory model and has maintained a pervasive influence throughout the twentieth century.
Early turn of the twentieth century education theorists like Franklin Bobbitt (1912) were convinced that the logic of scientific management could be applied to curricula. He contended that the process of working up the “raw materials into the finished products for which it is best adapted” (Bobbitt, 1912), could be applied to education. Educational systems, ideally, should educate young individuals according to their capabilities in order to fashion them into culturally and socially participatory adults. What successful adults know and can do should be discovered to formulate educational objectives. These objectives, in turn, determined the curriculum’s scope and sequence: namely, what is taught and in what order. According to Bobbitt, curriculum work, like work in industry, “should be managed in the interests of efficiency and the elimination of waste” (Flinders and Thornton, 1997, p. 2). Teachers, as workers in education factories, should save more time and produce more goods in order to enhance efficiency and standards. Therefore, the industrial metaphor for curriculum development cast schools as agents for social reproduction, a factory with maximum output (i.e. student learning) and minimum cost (i.e. teacher salaries).

Based on this model of maximizing efficiency and minimizing sources of wasted instructional time, errors should be not only foreseen but categorized in advance. It held that students’ typical errors can be predicted by applying diagnostic testing and other procedures proposed by behavioural psychologists (Lagemann, 1989). The notion of efficiency resulted from smooth operating procedures and minimum waste created a view of school as an assembly line. According to this approach, educational systems were linear, cause-effect driven, and closed systems with a “predetermination of objectives, the
selection and organization of experiences to reflect those objectives, followed by evaluations to determine whether the objectives have been attained” (Doll, 1993, p.52).

Curriculum determined the pace of the school year precisely as the assembly line set the pace of work. Small initial changes in the educational system are eliminated by averaging them out over time. Human behaviour was fitted into a linear measurement system, learning behaviours reduced to one or two factors and instruction established to incorporate these factors. This curricular structure influenced content and teaching method and removed control from teachers over most aspects of the curriculum. Just as an assembly line moved materials from work station to work station, with value being added at each station and incomplete products being moved on to another station, uniformed learners moved from one grade to the next grade in a process called social promotion (Doll, 1993; Pinar 1998; Pinar, Slattery, and Taubman, 1996).

The modernist tradition, with its notions of simplicity, regularity, and predictability, has sought to eliminate concepts of complexity, variability, and unpredictability in modern education (Doll, 1993; Pinar, Slattery, and Taubman, 1996). The dynamic universe has been reduced to a mechanical composition of dead and inert particles. Standardization has displaced dynamic interactions. Utility-oriented curricula rooted in the modernist desire for intellectual and technical control of the world has ignored opportunities rather than reduced uncertainty. The joy of learning has been replaced by the dullness of meeting standards and mathematical measurements. Respect for the hierarchy (Wertheimer and Zinga, 1998), competitive individualization, receptivity to being ranked and judged, and the division of the world of knowledge into discreet units and categories
susceptible to mastery (Dreeben, 1963; Hodas, 1993) have predominated within Euro-western educational systems.

Although this model of education has undergone many changes, as Pinar (1988) in Contemporary Curriculum Discourse argues, the Newtonian and Cartesian legacy can still be tracked in most educational and, of course, art education institutes. Mary’s description of the context of her class points to a distinctly modernist model. She teaches, in a certain period of time, a certain curriculum, and prepares students for the next stage. This model of teaching and learning art in a program, and planning a linear path of education to become an artist, originates from the modern idea that art is a systematic and intellectual pursuit.

"Academic art:” Mary’s sketch of what she is expected to teach signifies that she teaches an “academic” course:

[In an art college] there is no contradiction of anything, you know, there’s a very clear definition that you come to this school to learn, for example, watercolour painting, oil painting, acrylic painting, Chinese brushwork, and there is no conflict, but in a liberal arts university I’m not saying there is a conflict, but there’s … knowledge is approached by a number of different ways. So, for example, our students either graduate with an Honours in Studio, they have five art history credits, five elective credits, and ten studio credits … In this context if I don’t centralize my six weeks … in a very concentrated fashion, I would end up teaching the method. I should be teaching them … I want to teach them how to paint and … not how to paint, but rather give them the tools of how to analyze stuff, but if I start doing it at this level I won’t be giving them the basics or the material necessary for them to be an artist, which is what they’re here for. So I have to make choices. I can have a seminar study class every day, but if I do that I should be taking away from their painting, and I know that that seminar time they’re going to have … that’s good, because they’re also getting their art history classes” (“Mary,” Interview I, Jan. 25, 2006).
She points out that she teaches in an art department in which arts are classified and arranged to offer systematic programs, which delineates the prescribed stages for becoming an artist. Most of the curricula of these programs are non-studio courses. In terms of contact hours, studio arts usually take up a smaller part of these programs. For instance, in the department where Mary teaches, students must complete a total 20 credits to earn a BFA (Honours) degree. Only eight of these 20 credits are the studio courses and the other credits focus mostly on art history and theory. It is assumed that time is required for work outside the contact hours, whether in the studio or on academic material, but if the assumed outside work on both aspects is equal, then students are working less overall on their production than in their academics. “Art” as an academic discipline is thus rife with ambiguities and dilemmas; for instance, in art-as-trade schools, the purpose of instruction is clear—students come to learn a specific technique. But in “academic” art, in its modern sense, there is a discrepancy between assumptions and beliefs about art instruction and what is actually practiced. This dilemma derives from the conflict between the idealistic view of the arts and art education, dispensed with the modern era clichés of “the gifted talent” or “elite artist” or “intellectual art,” and the reality of current art instruction. It is assumed that academic art instruction is about teaching and learning artistic creativity, while it is mostly about skills, techniques and the political vagaries of the art world. Bauhaus attempted to resolve this dilemma by asserting that art’s relation to inspiration made it un-teachable. Hence, instructors in the Bauhaus taught basic rules and procedures and concentrated on craft rather than art. Bauhaus’ claim of giving a more fundamental and universal instruction still exists in art university instructions, although the premise is confounded to some degree by post-modern approaches, which
direct foci toward power relations, but still within a distinct power relationship: art and creativity within a curriculum.

What happens in the discipline of art differs from any other field because elsewhere, students are taught skills/knowledge in order to reach a level of competence that is socio/legally established. One might argue that a completed degree in engineering implies that the graduates have mastered a body of knowledge that attests to their competence, not their creativity; this argument will insist that the student may build a safe bridge, but that there is no reason to think that their design or execution will or should be taken to be “creative” in any commonly understood sense, as in the commonly understood creativity of a good architect (Elkins, 2001). Such an argument might capitulate to the point of admitting that an engineer, when good, is not creative but “innovative.” It seems to me that there are at least two refuting views of such an argument; the first is that the lay person cannot necessarily appreciate the creativity in engineering. The second is that the distinction between innovation and creativity is rhetorical, if not spurious. But in either case, this particular particle of “creativity” under the microscope is of the same species as those described in the creativity explosion, which is to say that it is pre-commodified, exhibited in an un-resistant fashion, and is a clear solution to a specified problem rather than an interrogation of context, a form of resistance, or even an individual voice.

According to Elkins (2001), academic art school fosters the implicit claim that the growth of creativity will, ideally, place the student by Michelangelo or Picasso. Those presented
as “masters,” whose works are “masterpieces,” are referred to not as subjects of study but as exemplars.

*Students as consumers:* When Mary is asked why and how she chooses the assignments for the course, she returns to context. Her response explicates students’ expectations which are typically framed within explicitly economic terms. She states,

> How much time do you have? The situation here is that the students spend $1,500 for the credit ... They come to you and enrol in your one credit class so we’ve got six weeks. They want to know what are you going to give them for $1,500, and if they are here committing their time and money and effort for six weeks they want a return … (Mary, Interview I, Jan. 25, 2006)

She illustrates the site of teaching and learning as a market that, of course, like any other market, has two components: consumption and production. The demand of customers defines the quality of the product. In the modern educational system, students have become consumers. That is, they are the constitution of a commodified education that is preoccupied “with doing those things which will increase its exchange value in terms of the resources that flow, directly or indirectly, from a strong performance on the measures of research output and teaching quality” (Willmott, 1995, p. 1002). A “degree,” for instance, in art in a commodified education, has an exchange value. In this sense, art instruction and students are parts of a system of “delivery” and “consumption.” Mary describes this form of delivery/consumption of higher education in the context in which she works:

> The university is being paid by the student okay, so when the student comes to a university he moulds what product they’re buying. So the student actually has the freedom to withdraw. I do not have the freedom to withdraw, okay? I don’t because I’m already on contract. I’m on a secondary contract. The students are on a primary contract, so they come here and they have chosen to abide by the rules.
So when they come into this class, this first year level class, they have expectations that after they finish, they’re going to have learnt something.

[One of my students who first started painting in September] has certain expectations and she feels that she’s not quite gotten it yet. She’s already spent six months but she needs to learn how to paint, okay, and I can only give her incremental advice … to get her through the steps, but… I’ve got to do it within six weeks, so in a way the student is a customer who is buying the product off the shelf, and in third year they’re going to choose. They can come to me if they prefer my style or they can go to somebody else whose style they prefer. So they actually choose what kind of product they’re buying. I mean just like coming to a studio class, they’re choosing a product; they’re making a decision. How informed is that decision, you know, I mean we don’t know. It could be just something, but as far as the rules are concerned, the rules actually make my life very boring. They don’t make my life interesting or easy. It would be great … do I like the rules, no I don’t” (Mary, Interview I, Jan. 25, 2006).

Mary is teaching one “credit” in an honours program; this is the product, and she assumes that her “customers” have greater freedom than she, the producer, because in her role, she is obliged to negotiate the needs of both students (consumers) and curricula (product).

Here, both the teacher and the students are objectified by the ideology of commodity. A curriculum stocked by “credits” is organized and reorganized to appear to provide satisfaction for students, in turn expanding a customer base, while simultaneously re-encoding the principle of a market economy. This ideology has the effect of restricting considerable freedom teachers might otherwise have. But what is interesting here is that when students are reconstructed as active consumers, they consequently become inactive, passive learners (Cloete, et al., 2002). Mary states,

You’d be surprised to read their [student’s] course evaluations, because in almost every course evaluation they say I want to learn the technical side of things. I want to learn how to paint and draw. I want to know how to wash my brushes. ... They don’t have a clue of what they’re doing. So the equal relationship is actually a mirage, wishful thinking. (Mary, Interview III, Mar. 29, 2006)
Defining students as educational consumers encourages a passive sense of entitlement (Hartoonian, 1997). The students are guided by external regulations, and they are taught to rely on the curricular resources of sequencing and organizing. Mary believes that students cannot participate in the choice of the assignments because they “have no clue what they are doing.”

Currently, in the West, education is increasingly discussed in terms of its economic value and its contribution to international market competitiveness (Kirby, 2007). The dominant language in current curriculum discourse is one of machinery and productivity; schooling has always been a tool for transmitting dominant ways of seeing, and it seems clear in Mary’s view of her role that the studio teaching, despite claims about the possibility and value of enhancing creativity, is based on a neo-liberal notion of progress. Such curricula model a linear progress through an ostensibly value-neutral transmission of information. “Teachers lecture to students; students are passive acceptors (usually memorizers)” (Keith, 1995, p. 49).

Modernism contrives schools within a dualistic model; separation between teacher/student, meaning/context, subjective persons/objective knowledge, body/mind, inner learning/outer environment. Modernist curricula provide context-free objectives with competition and external evaluation. It tends to suppress intuition and feeling, while emphasizing rational conceptualization and linear thought, which ignores consideration of the curriculum-as-transformation process, and rejects curricula “composed of complex and spontaneous interactions” (Doll, 1993, p. 38). What modernist curricula does do well
is to reproduce racism, sexism and cultural elitism through a process of standardization. Commodification of education includes the recruitment of those students who are best able to make an efficient, cost-effective contribution to the context of the classroom or studio, and who are most likely to show “improvement” in their “performance;” thus the best units for the education industry are those who come ready-made for refining, without those differences such as colour, (dis)ability, non-English language, etc., which interrupt the smooth machinery of the system.

In summary, Mary teaches art as an academic discipline and an “academy” in its historical sense is about order, structure, and core curriculum. Mary believes that in an academic environment, we can teach what the system lets us teach:

As I said, in an ideal world I’d take twenty students, and I’d say to the university give me four years with them and you’ll see that they’re going to be number one painters in this entire region, I guarantee it, but I don’t have that. My Dean says to me you have twenty students, you have them for six weeks, they have paid the university “x” amount of money from which your pay comes in. I want them to be educated in this time that you’re hired, and of course nobody says it like that, but that’s what the situation is. (Mary, Interview I, Jan. 25, 2006).

In such a context, what can Mary actually teach in the studio?

Teaching within the art studio context

The data derived from observation and discussion with Mary falls into two broad categories:

- What it means to teach the production of mediocre art by average students, and,
- Disparities between the rhetoric of creativity and skill-based practice.
Average students and mediocre art: Mary teaches to a number of what she understands are just such “average” students in her class; she asserts that

I have to give my instructions to the broad middle. I’m not catering … this is like bulk information. This class is absolutely no different than a math class or an English class or a Psychology class. My target student is the middle. I’m not addressing myself to the genius students or to the very poor student, because I know that those two … those two extremes are beyond … beyond me” (Mary, Interview I, Jan. 25, 2006).

Targeting average students leads Mary to teach more “inviting and comprehensible art” rather than art that is “aggressive and exceptional.” By so doing, Mary’s teaching is a contradiction: regular reference to exceptional, aggressive, and provocative art, in tandem with the production of average, inviting, immediately comprehensible art.

Mary’s teaching practice is paradoxical in that she follows the implicit, modernist belief in the art world (and similarly in art schools) that, rhetoric of post-modernism aside, “art” is exceptional and rare. At the same time, she deliberately works toward an increased professional capacity in her students. Before the modern era, fine arts were of a piece with crafts, mechanical arts and sciences. Modernism, with its compartmentalization, distinguished fine arts from crafts and sciences, defining the first as for pleasure and the latter as referring to what is applied; in pre-modern art education, those who made art were understood as professional “craftsmen.” In art school, masters and masterpieces are constantly introduced as models of real art and artists. Likewise, when Mary makes comments on students’ work, she often compares their efforts with those of masters, in effect criticizing and teaching in modernist terms, while tacitly seeking, in a contrary manner, to develop skills and techniques that have little relationship with the domain of creativity, innovation, or chance. She celebrates innovative, challenging and complex art
and continually refers her students to contemporary artists and masters. She does not say, for instance, “what a nice timid drawing!” In fact, what Mary does by working toward student production of technically adept albeit individual “voice-driven” work, which can be produced by any “average” student, is not actually “teaching art,” by either her own nor any other conventional definition.

Teaching in studios does not always attend to those who flee the lines, those who come with intentions and perhaps even disturbing criteria developed outside the realm of what has been at least tolerated, or those whose aesthetic, politics and knowledge embrace the most radical of work, but instead to average students. Most artwork by students, like most student work in any field, is an average imitation of “better” art. This is the reality, but the pressure of compulsory creativity still exists in the schools.

The gap between what we purport to teach and what actually happens in art education makes the field paradoxical. Theoretically, art instruction aims for improvement, radicality, newness, voice, innovation, and creativity, but, in practice, Mary, like most instructors, is driven to focus almost exclusively on the teaching of skills and habits, and at the same time, to do so as though these are not their principal goals.

Skills-based art education: Mary acknowledges that art instruction at the university level is basically skill-based:

Well I think that the university at the undergraduate level is really essentially teaching about a vocabulary or a skill generally speaking. In the Master’s level I don’t think that’s true. I think at the Master’s level one is learning to be critical, and one is learning the rules and the abilities to shift things. They have the skills,
they have all the notes, and now they’re making music, and they can only make music because they are discerning, they’re discerning the superior from the mundane. They’re discerning that this is good work and this is where creativity starts. For example, building a frame, stretching a canvas, pounding the canvas, blocking out the colours, laying out the composition, making the movement develop, so far it’s more about skill. Then something happens, then the painting comes alive, and the painting tells you really what it wants, and you have to be aware and listen to it. (Mary, Interview II, Feb. 15, 2006)

The European skills-based approach to the teaching of art is the dominant approach in higher education (Becker, 1996; Dunning, 1998; Singerman, 1999; Staikidis, 2004). Even countries like Iran, with a rich historical background in art and culture, now follow the skills-based approach, which emphasizes rendering from observation as the foundation for teaching and learning art. Non-western models have traditionally focused on lived experiences and cultural narrative in art pedagogical practices. The skills taught in any ordinary art studio now, western and otherwise, are:

- Fundamental skills
- Technical skills
- Conceptual and critical skills
- Professional networking

Fundamental skills: Mary starts with teaching principles, i.e. elements of perception, visual experience, and manipulation of a formal language. She consistently reminds her students that they need to learn the rules to break them. Her teaching foundation, assumes that knowledge begins from one place and proceeds to another. Students need to begin from the first stage (basics) and then to learn skills/techniques in order to “become creative.” Thus the 4-year art program includes one year for foundations followed by
another one or two years of technique and theory, which is believed to prepare one to make art.

Technical skills: the major part of Mary’s studio instruction is the teaching of technique. Students are taught to become familiar with the limitations and characteristics of a given medium and those procedures related to it, so that they can communicate what they feel and think. The skills related to media, tools and techniques are achieved by practicing, practicing, practicing. Although it is commonly said that art is learned through hard work, it seems more accurate to say that hard work brings greater technical skill, not increased creativity or better art.

Conceptual and critical skills: the other most significant focus of Mary’s teaching is on conceptual and critical skills. Theoretical conceptionalization with regard to classical and contemporary art theory is required in order to enable students to engage in several art discourses, and to help them to place their work in a social/political/historical context. Critical and conceptual skills help students develop their work both formally and conceptually. Instruction in critical terms, significant moments in art history, as well as philosophies of art and vision are valuable complements to the honing of technical skills.

Professional networking: students are taught about others in the field, about career-building. For example, Mary shows students how to participate in the art community and how to make connections in the contemporary art world, for example, how to enter a juried competition or how to present their work to galleries and so on.
Mary acknowledges the role of fundamental skills and related art theories in her teaching:

You have to … you can’t learn a language without grammar. You can’t really write a creative piece without really understanding the propositions [sic] and the pronouns and the subjective clause, or whatever. You have to learn more of the structure before you can create a work of art, and one more thing, like just because you can play Do-Re-Mi on the music scale it doesn’t mean that you are making music. It means you just … you just know the grammar. I don’t make music it’s something else, that is the next step” (Mary, Interview II, Feb. 15, 2006)

This acknowledgment of the role of fundamental skills and related art theories is paradoxical in relation to the concept of individualism in art. She gives students space to work on their own because she, like many in my experience, believes that art making is a highly individualized activity. She believes that too much input diminishes students’ creativity and voice:

If I evaluate what they’re doing, mistakes and all, and, you know, you do your own thing, art is doing your own thing, I think I would have lost them because they won’t learn anything, not in the program that they have. (Mary, Interview I, Jan. 25, 2006)

Again, however, although she insists that fundamentals are essential, and regularly reminds her students that to play with rules, they need to first know them, it may be that Mary understand teaching fundamentals as that which defers the concept of individualism, especially when it comes to supervising the students’ work. How does the student break the rules while trapped by foundational ones? Mary answers,

[The] question … is a good one, and I think that while you’re teaching them the rules you also should be giving them the flexibility to reflect and to critique, and then it becomes possible. And remember these rules are not draconian. (Mary, Interview I, Jan. 25, 2006)

This flexibility to reflect and to critique is consistent with most of her discussion about students’ work, but she does provide students an assignment, she does determine that students will work on their own, and she does return to critiques of their work.
What cannot be taught in the prevailing art studio instruction?

As is demonstrated above, academic teaching is basically about orders and boundaries, about changes and improvements in student achievement. Conversely, creativity is often about crossing lines, breaking boundaries, about chaos. The question is: If teaching art is necessarily a practice rife with compartmentalization, rules, and regulations (many of these obscured by rhetoric claiming the opposite), then can artistic creativity be taught? How do we work with the a-rationality of art, while teaching? How can a teacher celebrate chaotic and accidental events in student work?

Art making is neither linear nor law-abiding. We are disingenuous to expect either the teaching or learning of art to be linear and systematic. Mary, at points, defends her practices by noting that she is contracted to conform to the structure of university-based art:

So it’s a … so it’s not as if chance happening or some student doesn’t have the freedom to utilize it or recognize them at this level and just not … just not at the third and fourth year level, it’s simply how much energy in education … in my three hours or four hours with them am I going to devote on a chance happening that may not happen for another four weeks, it’s not right to proceed in that way. So there’s a … there’s a reason why, you know, we have course descriptions, and we have evaluation criteria, and we have mark … I mean you’ve seen the course descriptions. Each project has its grading, I mean that is just awfully artificial and nothing could be more superficial, artificial form … in the true spirit of the thing, you know, what I would really … in an ideal world, what I would like to do is I would like to choose twenty students for four years, and I would program … individually program for each of them, and then I would give them … continuing in the four years to find and really work intensively with them and that, I think, would be the ideal education. So they have dedicated custom made programs that not only deal with their own strengths and weaknesses, but also connects them, outside, to the art world, but the system does not allow for that. (Mary, Interview I, Jan. 25, 2006)
She believes that within a different structure she would teach quite differently. She is clear that teaching artistic creativity, which is unpredictable, against the rules, is all about resistance, flees from legitimized lines to create lines of flight, is not feasible, at least certainly not in the academy. Academic studio art education appears to ignore the nature of learning, and of art itself, which is multi-dimensional, dynamic, nonlinear, uncertain and chaotic. Given the degree of modernity afflicting art education, perhaps the best one can expect would be demonstrable proficiency with those rules and knowledges needed to participate in the art world game. Creativity demands, however, that we resist the rules of any conventional game and define our own rules. It seems that ordinary studios classes bind students up rather than freeing them because the context cannot tolerate irregularity and uncertainty. The “academy,” in its historical sense, is a place with defined boundaries and predictable outcomes. Such a place cannot foster chaos and uncertainty. So, the claim that art institutes are there to help students find their “voice” is problematic, to say the least, and ideally we might see art instruction become clearer about its aims and intentions.

Ripple (1999), in his essay *Teaching Creativity*, points to a noticeable turn in the study of creativity:

Given the historical relationship between testing for creativity and the training of it, it seems somewhat ironic that even more recent approaches to the study of creativity have taken a marked turn. The shift is away from quantitative psychometric testing and theory based efforts to construct nomothetic nets with accompanying generalized principles. Current emphases in method tend toward the idiographic, biographical, case study qualitative mode. Inquiry has focused on domain-specific creative activities and away from notions of generalized creative abilities. (p. 633)
He suggests that this shift is a return to a more elitist, aristocratic approach to creativity, away from a democratic one. It is a revival of the view of creativity as a rare phenomenon that cannot be deliberately improved upon.

Whether or not creativity can be taught has been always controversial; the main question in most debates has been about whether artistic creativity can be taught or be improved upon through instructional training programs and techniques. Art institutions need to open up this debate and to clarify their position regarding such questions if they mean to engage with creativity, and even if they mean to produce craftsmen; what would be interesting to see would be the effects of such a debate on the idea of studio curriculum, and the structural imperatives of the academy.

Ultimately, this discussion, in conjunction with a number of other nodes in this thesis, leads me to question again: What is the point of art schools, of teaching art at all, if art is solely about creativity, and if creativity cannot be taught in the current structure of our art academies? To learn techniques, do we really need to complete a four-year academic program with a core curriculum? As an art teacher who has to work in the academic environment, what exactly can I do?
Making Connections: Teaching Contingencies

A theory does not totalize; it is an instrument for multiplication and it also multiplies itself... It is in the nature of power to totalize and ... theory is by nature opposed to power. (Deleuze, 1972/1977, p. 208)

The aim of this research was not to make totalizing claims regarding creativity and art education, nor to reduce it to a set number of claims, but rather to invite an engagement with ontological/ critical issues in the area. Throughout my dissertation, I have imagined creativity/art/chance as if these are inside a box, which itself is riddled with viewing holes; each of these infinite little windows, each with its own distinct perspective, might be imagined as one of several sometimes-connected, sometimes-disconnected theories and/or histories of what we think of in terms of art, of creativity, and of chance.

The metaphor of such a box, offering no two like views, complicates the possibility of taking a position. In Cartesian rhetoric, we are expected to fix our position some where, on some thing. But I do not believe in a single position or one accessibility to an ultimate truth. Each point of view contains partial truths, and there are a number of aspects of this exploration that misrepresent or occlude my intention. Just as creating art is contextual, I believe that ideas and meditations by a researcher between self and past, self and others, between socio-political experience and new knowledge, between intention and possibility are all equally contextual.

In this node, I offer my own partial and anti-authoritative view of how the various nodes in my thesis connect to each other; the reader will no doubt connect the pieces differently.
I see, in the history of ideas about creativity and art, a general continuity of agreement that creation takes place within chaos, and forms where chaos and order meet each other. Differences arise in conceptions of how to order chaos, who can order it, and what the end function of such ordering may be.

Greek and Middle Ages philosophers positioned the deified Muse as the locus of authority, the wellspring of means by which the artist structures chaos into creation. In the Renaissance, inspiration shifts from the Muse to the creator-genius’s un-deified authority. Thus the Renaissance and the subsequent modern era give birth to individualism (which originally meant the opposite of what we take it to mean today: “individual” was man undivided from God, so that Muses and saints were not necessary), and so creativity became a matter of man’s faith in his power to create without support from (or even existence of) God. The artist became God, the great producer. And curiously, the absence of God itself became holy, became the myth. The modern era is replete with myths of progress, productivity, inspiration, originality, purity, and more. And then, another turning point: the mythically holy creator sinks into indifference about the value of originality, of individualism, of the unique. This is the post-modern epoch, which grapples with consensual reality. Where modernism applauded the eternally new, the novel, continuous creativity, the surprising, post-modernism reconceptualises creativity and looks to imitation as both creative and rebellious against beliefs in authenticity. Post-modernism repositions originality and novelty by emphasizing appropriation, collage, and juxtaposition of meaning. Of course, there is no sharp border between historical periods.
If we accept that the formation of a paradigm is related to the context in which it emerges, I believe that both modernist and post-modernist discourses of creativity have been responsive to the needs of capitalism as a system of nomadic power and of constant de/reterritorialization. Today, the process of commodification plays a vital role in the construction and experience of contemporary subjectivity as well as the notion of creativity subjecting people to free-floating and nomadic forms of control.

The creator cuts chaos, sieves it, lets a certain form of actualization of the virtual happen. The Deleuzian world is a state of flux, a constant differentiation. Creation, in such a world, is driven by differentiation. The only way to affirm these underlying processes of differentiation is in “creative becoming.” Hence, creation is a becoming event. It forms in chaos, but this does not mean it is based in anarchy. *Becoming* is an expression for a structure in constant change; a structure without fixed structure. *Becoming* is the undetermined set of relations among actualized (which becomes consequently determined) movements and processes. This means every creative act combines an affirmation of chaos and multiplicity, and at the same time of univocality. Creativity, in fact, takes place on the plane of immanence which sifts together chaos and multiplicity.

When it is held that possibilities have no reality till they are realized, a hierarchy of power emerges. Possibilities have values that are realized. But in Deleuze’s theory the virtual is already real, so actualities are also real. None transcend another, but each differs from each. Deleuze’s theory of differentiation escapes binary opposition and thus hierarchies of power.
I have discussed Deleuze at great length in this thesis, and am aware that his thinking, his expression, and his approach are so deeply radical that to paraphrase his writing is almost impossible. Reading Deleuze over time is disorienting, to say the least, and writing about his philosophy is perhaps more so. But the reader is invited to intuit, or sense, as much of what I have to say here, to peek through this one hole into the box of art/creativity/chance, and make of his ideas what they will. The Deleuze view into these matters is the one I prefer to all others, and yet find the most difficult to articulate.

Deleuze’s notion of becoming embraces “duration” not progress. Duration is the elaboration of a “difference” in a thing/quality/system. Becoming involves fracturing and opening up the past and the present of the virtual in an event that differs from its actuality. The simultaneity of becoming eludes the present. It moves and pulls in both directions at once. A creative work offers a complex temporality that brings past and future together. In fact, what makes a piece of art a masterpiece is the capacity it has for seemingly infinite interpretation in a temporal sense.

There is a virtual in everything that can have various actualities. Of course everything always has a kind of actuality but its virtual allows new actualization. In this sense, the new is not created from nothing, or by the realization of an unreal possibility. The ontology of becoming goes beyond the idea of progress, defined as a move towards ideals or lost origins; instead, creativity as “becoming” is a pure movement, pure multiplicities. It is an alternation without any fixed reference points.
Creation, thus, is not bringing something from nothing. It is neither “beginning” nor “ending.” It is the “middle.” It is process within process. It is multiplicities, not multiples or “one.” Creation is “becoming,” through convergence of divergent forces within chaos, and simultaneously re-divergence into chaos, and then “repetition” of this process—repetition of differentiation. In sum, any creative act is a becoming in that it

- is an actualized event changing at any given time,
- is in a necessarily complex relation with the other events,
- takes place within a constantly changing context.

In the Deleuzian *becoming event*, artists present an aesthetic developed in a complex ever-changing relationship and interaction with their social/political context. An artist is a traitor to the status quo. Artistic creativity, in this sense, is a rebellion, a revolt against anything ordering bodies, and as such, a rare event. And the fundamental question “How can we teach such rebellion?”

To talk about teaching art, and specifically, the contradictions and paradoxes in Mary’s teaching of art, is in some ways analogous to the dilemma of talking about creativity in its “post-modern” sense in the context of an art world that still, regardless of all political or avant-garde intentions, is utterly hierarchical, commodified and comodifying, and paradoxically critical without being innovative, or maybe even creative, at least in the Deleuzian sense. Artists, arguably post-modern or otherwise, are still trapped, whether in teaching or producing, in a kind of Mobius strip; a Deleuzian understanding of creativity
suggests that only a deeply radical escape from the notion of creativity as manifesting in either low, high, pop, modern, post-modern, or avant-garde, or any other binary, opposition, or hierarchy can constitute that which we want to think of as “art,” which has nothing to do with organization and everything to do with immanence, nothing to do with progress and everything to do with becoming.

Teaching, literally, is about guiding, ordering, structuring, and controlling. How do teachers survive in a world of chaos, complexity and unpredictability? Teaching is traditionally located on the “plane of organization” which supports the rigid, dichotomous segmentarities of personal and social life. Hierarchical relations of power, fixation of identities, limitation of experience, and action to the acceptable forms take place on the plane of organization. Deleuze speaks of another plane, the “plane of immanence” or “plane of consistency” on which rhizomatic multiplicities are governed by the process of becoming. Within the framework of modernism, the teaching of art, as the teaching in other disciplines, has taken place on the “plane of organization” but what would it look like, practised on the “plane of immanence?” Lines of flight may emerge only on this plane, because the plane of immanence allows a maximum degree of movement and change. The nomadic artist and art can form only on this plane, which can never be grasped fully; it is always yet in becoming and sparks into conscious existence only occasionally (Deleuze, 2001c). Artistic knowledge can be theorized and taught, in the Schönian sense, but creativity, a matter of “lines of flight,” is fundamentally unrelated to artistic knowledge. Creativity is not about knowledge, but self awareness, and it has nothing to do with solutions. Solutions are important when progress and the outcomes are
the goals. Discipline is needed here for more efficiency. When the aim is the between, the process, it is changeability, flux that is the target. Can studio art accommodate this?

Problem solving may often be thought of as a linear process, wherein one determines a number of steps from the problem toward the solution. However, much problem solving can take the form of a dialogic relationship; for instance, editing, where actions taken to improve a text have the effect of causing new problems and new solutions, and which overall, become interactive processes rather than linear. But creativity differs from either a linear or dialogic mode in that it breaks lines, even those that operate dialogically, and is much freer than the relational conditions which comprise problem and a solution.

_Becoming_ in the sense that Deleuze uses the term is a process of transformation away from imitation or identification of one thing with another. Rather, it is a process of recreation in terms of differential durations.

In the Deleuzian model of creativity, authentic creativity is as destructive as productive. He writes,

A creator who isn’t seized by the throat by a set of impossibilities is no creator. A creator is someone who creates his own impossibilities, and thereby creates possibilities. It’s by banging your head against the wall that you find an answer. (Deleuze, 1992, p. 292)

Therefore, constructing a clear concept of art creativity seems impossible, or at least very difficult. Deleuze’s notion of difference is an ontological rather than a logical, semiological, political or historical category. It is a relation between fields, strata and chaos. It is a movement beyond dualism, beyond pairs, entities or terms.
The modernist conception appears to describe creativity as an individual trait, as an extraordinary ability—even madness. Yet the post-modern conception sees creativity as ordinary, with an emphasis on the freshness of social-cultural construction; so it is more interactional, although of course, there are other features that distinguish the two positions, like time. But it has been one of my arguments throughout this thesis that both modernism and post-modernism have trapped creativity in hierarchical spaces which have the ultimate effect of crippling by codification, that which must always be in the state of *becoming*.

Creators are rare. We cannot teach anyone how to be a creator. What *can* be taught is technique, theory, and the material language of media. What we *can* do is state clearly that what we are teaching is not creativity but technique, theory and so on, and we *can* teach the value of breaking away from the false seriousness of creativity, with reference to Dada. We can teach the enjoyment of chaos and the confrontation of it. We can teach resistance. We can teach a love of complexities. We can teach play.

In closing, I would like refer to Davin Heckman, who also espouses the value of resistance in learning (and correlative, teaching) differently than we do:

Fortunately, people still exist in abundance, and thus there is still time to roll back the clock. While some of us might be stuck, marching in lockstep to the beat of salaries and prestige, there are still too many millions -- sick, imprisoned, dispossessed, disenfranchised, dying, alone, and forgotten -- who might be willing to trade away some of their instability for some of our security. And, perhaps, in the process of this exchange, we might remember what it was like to actually be human -- not as an intellectual exercise or cultural safari, but as a transformation. We might get comfortable with risks. We might learn to be perturbed. Most importantly, we might become accountable to the sleeping old man we step around when we take a walk through the city at night, the ruddy-faced woman.
who constantly mutters menacing words as she paces the streets for endless hours, the filthy child who sits and rocks with his face buried in a jar of glue, the man who itches his scabbed arms and insists that he needs a dollar because he's “hungry,” or the last remaining member of a family who is digging for the children that are buried under a pile of American-made rubble. Arm in arm, we can live and die in resistance to the morbid profiteering of our future. (Heckman, 2004, ¶ 30)
References


Duchamp, M. (1973). Regions which are not ruled by time and space. In M. Sanouillet and E. Peterson (Eds.), *The writing of Marcel Duchamp* (p.127-137). New York: Oxford University Press. (Original interview conducted 1956)


Appendix 1

LETTER OF INFORMATION

Dear (Name of the professor):

I am writing to request your participation in research aimed at art teaching in undergraduate level programs. The ultimate goal of the research is to develop a theory of art teaching that is responsive to post-modern views of learning and knowing art and creativity. This study is a part of my research for the PhD degree at the Faculty of Education, Queen’s University. It will be conducted under the supervision of Professor Hugh Munby. This research has been cleared by the Queen’s University General Research Ethics Board, and also by your university Research Ethics Board.

In this research, I wish to complete a case study of the teaching process of an artist/art professor. I will document observations of an art professor interacting with his/her students in the visual studio art context. As well, I will conduct interviews with artist/art professor. I am inviting you to participate in this case study.

The case study will be conducted over the winter semester and the observations will be completed at the studio classroom. I will attend each of your classes during the winter term and observe your interactions with students. The observations will be followed with four interviews with you after your class. Each interview will be for approximately one hour. Both observations and interviews will be audio-taped. Informal conversations will be taped when practical. Any notes will be written up and maintained as a computer file. The taped interviews will be transcribed, and then the tapes will be destroyed. Photographs of students’ artworks in progress will be taken with the permission of you and the students involved in certain projects to help the researcher add details regarding visual chance events, teacher’s actions and instructions, and annotating the running record after each observation. They may also be included in my thesis with the permission of the students to help explain how the professor teaches in the studio art class. Students will not be identified with these works.

The interviews will be conducted at a time that is convenient to you. The location will be in your studio class. Each interview will be for approximately one hour and will be audio taped. The taped interviews will be transcribed, and then the tape will be destroyed. None of the data will contain your name, or the identity of your place of work. The place of work will be identified using general terms only, and also neither your name nor university will appear in any publication. Data will be secured in a locked place and every effort will be taken to protect confidentiality.

I do not foresee risks in your participation in this research. Your participation is entirely voluntary. You are not obliged to answer any questions you find objectionable, and you are assured that no information collected will be reported to anyone who is in authority over you. You are free to withdraw from the study without reasons at any point, and you may request removal of all or part of your data.

This research may result in publications of various types, including journal articles, professional publications, newsletters, and books. Your name will not be attached to any form of the data that you provide, and will not appear in any publication created as a result of this research. A pseudonym will replace your name on all data that you provide to protect your identity.
If you have questions, please feel free to contact me, Soodabeh Salehi (613-542-9194, e-mail: salehis@educ.queensu.ca), or my supervisor, Professor Hugh Munby (613-533-6000 ext. 77296, email: munbyh@educ.queensu.ca).

Questions, concerns, or complaints about research ethics of this study can also be addressed to Dr. Rosa Bruno-Jofré, Dean of the Faculty of Education (613-533-6210), or to Dr. Joan Stevenson, Chair of the General Research Ethics Board (613-533-6081).

Sincerely,

Soodabeh Salehi
LETTER OF INFORMATION

Dear (Name of the student):

I am writing to request your participation in research aimed at art teaching in undergraduate level programs. The ultimate goal of the research is to develop a theory of art teaching that is responsive to post-modern views of learning and knowing art and creativity. This study is a part of my research for the PhD degree at the Faculty of Education, Queen’s University. It will be conducted under the supervision of Professor Hugh Munby. This research has been cleared by the Queen’s University General Research Ethics Board, and also by your university Research Ethics Board.

In this research, I wish to complete a case study of the teaching process of an artist/art professor. I will document observations of an art professor interacting with his/her students in the visual studio art context. As well, I will conduct interviews with artist/art professor. The case study will be conducted over the winter semester, and I will attend each of the classes during the winter term. Both observations and interviews will be audio-taped. In order to add details regarding visual chance events, teacher’s actions and instructions, and annotating the running record after each observation, I may want to take photographs of students’ artworks in progress and to record the conversations between the professor and the students. I am inviting you to participate in this case study.

You will not be identified with your works, and none of the data will contain your name, the identity of the place of work, or the identity of the university. The photographs of your works in progress will be maintained as a computer file to be used as an aide-mémoire while writing the study. They may also be included in my thesis to help explain how the professor teaches in the studio art class. Data will be secured in a locked place and every effort will be taken to protect confidentiality.

I do not foresee risks in your participation in this research. Your participation is entirely voluntary. You are not obliged to permit the researcher takes photos of your work in progress. You are free to withdraw from the study without reasons at any point, and you may request removal of all or part of your data.

This research may result in publications of various types, including journal articles, professional publications, newsletters, and books. Your name will not be attached to any form of the data that you provide, and will not appear in any publication created as a result of this research. A pseudonym will replace your name on all data that you provide to protect your identity.

If you have questions, please feel free to contact me, Soodabeh Salehi (613-542-9194, e-mail: salehis@educ.queensu.ca), or my supervisor, Professor Hugh Munby (613-533-6000 ext. 77296, email: munbyh@educ.queensu.ca).

Questions, concerns, or complaints about research ethics of this study can also be addressed to Dr. Rosa Bruno-Jofré, Dean of the Faculty of Education (613-533-6210), or to Dr. Joan Stevenson, Chair of the General Research Ethics Board (613-533-6081).

Sincerely,

Soodabeh Salehi
Appendix 2
CONSENT FORM FOR PROFESSOR

I have read and retained a letter of information and the purpose and procedures of this study is explained to my satisfaction. I have had all questions sufficiently answered, and I have been informed that the interviews and observations will be recorded by audiotape. I understand that the researcher intends to publish the findings of the study.

I have been notified that participation is voluntary and that I may withdraw at any point during the study without any consequences to myself. I have also been told the steps that will be taken to ensure confidentiality of all information.

I understand that I can contact Soodabeh Salehi with questions about the study. I am also aware that for questions, concerns or complaints about the research ethics of this study, I can contact the Dean of the Faculty of Education, Dr. Rosa Bruno-Jofré, 533-6210, or the chair of the General Research Ethics Board, Dr. Joan Stevenson, (613) 533-6000 ext. 74579, email stevensj@post.queensu.ca.

Participant’s Name:  ________________

Signature:  ________________

Date:  ________________

Please write your e-mail or postal address at the bottom of this sheet if you wish to receive a copy of the results of this study.

Soodabeh Salehi  
Ph.D. Candidate  
Faculty of Education  
Queen’s University  
Kingston  

Tel: (613) 542-9194  
Email: salehis@educ.queensu.ca
CONSENT FORM FOR STUDENTS

I have read and retained a letter of information and the purpose and procedures of this study is explained to my satisfaction. I have been informed that the artworks in progress will be photographed and the interactions between professor and students will be recorded. I have had all questions sufficiently answered, and I understand that the researcher intends to publish the findings of the study.

I have been notified that participation is voluntary and that I may withdraw at any point during the study without any consequences to myself. I have also been told the steps that will be taken to ensure confidentiality of all information. I have been provided with the appropriate contact information in case of questions, concerns, or complaints about participation in this study.

I understand that I can contact Soodabeh Salehi with questions about the study. I am also aware that for questions, concerns or complaints about the research ethics of this study, I can contact the Dean of the Faculty of Education, Dr. Rosa Bruno-Jofré, 533-6210, or the chair of the General Research Ethics Board, Dr. Joan Stevenson, (613) 533-6000 ext. 74579, email stevensj@post.queensu.ca.

☐ I agree to allow my artwork to be photographed and included in the thesis.
☐ I agree to allow my conversations with my instructor to be recorded for this thesis.

Participant’s Name: ______________________________________

Signature: ______________________________________________

Date: _________________________________________________

Please write your e-mail or postal address at the bottom of this sheet if you wish to receive a copy of the results of this study.

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