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Curious About Curiosity?

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by

Sharon Walsh

An Abstract of a Project
in
Creative Studies

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

December 2006

Buffalo State College
State University of New York
Department of Creative Studies

Abstract of Project

Curious about Curiosity?

There is a strong connection between creativity and curiosity. Curiosity is the foundation for creative people, creative process, and creative environment to foster innovation. To evaluate how curiosity stimulates creativity, this project explored the nature of curiosity and the role in creativity.

The heart of this project is a review of literature, showing how psychological research has explored curiosity, and the application of curiosity as a central element in personal and business success. This literature review also unveils the key barriers to curiosity and how to overcome them using a variety of techniques.

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Dates of Approval:

_____ _____

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Student

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To all my classmates who taught me many things about creativity, leadership and myself. To my sounding board partner, Sylvie Gelinas and my creativity buddy, Janice Francisco for all the learning and fun we share.

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And lastly, to those at Synovate who have supported my interest in creative thinking and to the company for including curiosity in the corporate branding that sparked this project.

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Background

Introduction

This project grew out of my personal and professional interest in creative people, process and environment, harking back to my undergraduate studies in psychology and anthropology with a focus on cognitive development.

Recently, Synovate, the market research company I work for, has focused on Innovation, International and Integration (sic.) as the pillars of the corporate strategy (Synovate, 2006). One component of Synovate corporate branding is curiosity, as our DNA (Synovate, 2003).

As this project has progressed, I discovered that curiosity tapped into my intrinsic interest in the human potential for growth and expansion. This project has reengaged my personal exploration of psychological literature while helping me apply my knowledge in the corporate setting. Moreover, I have developed my own curiosity using some of the techniques that emerged from my review of the literature.

Rationale for Selection

We cannot understand creativity or how creative people function without understanding curiosity. I wanted to engage my own intellectual curiosity and explore the link between curiosity and creativity. By focusing on curiosity for this project, I was able to pursue personal and professional development, through personal curiosity and corporate innovation.

My curiosity about curiosity grew from my CRS 635 philosophy paper (Walsh, 2006). In this paper, I described the importance of, and my personal challenge with, deferring judgment. Ray & Meyers (1986), described a strong link between enhanced curiosity and the ability to defer judgment. I also believe that curiosity is closely linked to intrinsic motivation and desire for exploration (Amabile, 1997).

My study of curiosity connects to the Synovate corporate branding (Synovate, 2003, 2006). In addition, there is a clear connection between curiosity and the core business of a marketing research company – asking questions.

Beyond the scope of this project, is the development of a guide and a training program in curiosity. These initiatives will help others understand curiosity as a fundamental creative attitude and will heighten their curiosity.

Literature Review

INTRODUCTION

The heart of this project is a review of literature, showing how psychology research has explored curiosity, the connection to creativity and the application of curiosity as a central element in business success. This literature review also unveiled the key barriers to curiosity and how to overcome them using a variety of techniques.

The literature review is organized in the following areas:

- What is curiosity?
- Why is curiosity important?
- Why is curiosity important in business?
- Who is curious?
- How is curiosity lost?
- How can I become more curious?

The results of this literature review will be used as a foundation for a Guide to Living Curiosity and other curiosity based initiatives.

WHAT IS CURIOSITY?

To heighten curiosity about curiosity, this section starts with definitions of curiosity, followed by a brief historical perspective and then explores the seminal and current theories on how curiosity works. This section concludes with my definition of curiosity.

Definition

The Merriam-Webster dictionary defined curiosity as the desire to know or learn which leads to inquiry:

> **cu·ri·os·i·ty** Pronunciation: "kyur-E-'ä-s(&-)tE Function: *noun*
> **1 :** desire to know: **a :** inquisitive interest in others' concerns **b :** interest leading to inquiry <intellectual *curiosity*> (www.m-w.com)

In psychological research, curiosity is defined as the "desire to know, see, or experience that which is motivated by novel, complex, or ambiguous situations and information that leads to the acquisition of new information" (Litman, 2005, p. 793).

Figure 1 contains words commonly used in the curiosity literature.

Figure 1: Words Commonly Used with Curiosity

Source:	Reio, Petrosko, Wiswell & Thongsukmag, 2006	Additional words from this literature review
Curiosity Word Associations	• Interest • Play • Exploration • Intrinsic motivation	• Creativity • Think, intelligence, genius, mind • Question, inquiry • Learn, education • Children

The seminal literature in defining curiosity comes from Berlyne (1954, 1960). He defined the motivational states for curiosity and types of exploratory behaviors which are presented in Figure 2.

Figure 2: Definitions of motivational states & exploratory behavior

Motivational States	**Exploratory Behavior**
Berlyne (1954)	Berlyne (1960)
Epistemic curiosity: the desire for information induced by conceptual conflict that motivates exploratory behavior and the acquisition of knowledge.	*Specific curiosity*: Increasing knowledge through openness to ideas, future orientation and enjoyment of problem solving.
Perceptual curiosity: "a drive aroused by collative stimuli and reduced by continued exposure to these stimuli" (as cited in Langevin, 1970, p.16).	*Diversive curiosity*: Novelty seeking which relates positively to courage and sociability and negatively related to boredom.

Asking questions is motivated by epistemic curiosity and reinforces learning (Berlyne & Frommer, 1966; as cited in Langevin, 1970). Frommer (1954b; as cited in Langevin, 1970) added that if novel stimuli are too familiar or unfamiliar the conceptual conflict needed for epistemic curiosity will not be generated.

Fahey (1942; as cited in Langevin, 1970) summarized question asking behavior as indicating: (1) confusion; (2) awareness of lack of information; and (3) realization of gaps in relationships. As such, he viewed questions as a means to acquire knowledge to reduce the conceptual conflict.

Other than diversive and specific curiosity the distinction between state and trait curiosity is the commonly studied. State curiosity refers to a person's level of curiosity in a particular situation. Trait curiosity refers to one's general propensity to be curious. Several curiosity assessment tools distinguish between these types. This is done by either asking either the individual or others general experience/feeling or context

specific questions. This distinction would indicate that curiosity is influenced by other the situation and one's disposition (Loewenstein, 1994).

Maw and Maw (1966, p. 343) defined a curious person by the degree he/she:

- Reacts positively to new, strange, incongruous or mysterious elements in the environment by moving towards them, exploring them or manipulating them;
- Exhibits a need or desire to know more about him/her self and/or his/her environment;
- Scans the surroundings seeking new experiences; and
- Persists in examining and exploring stimuli in order to know more about them.

Historical Perspective

Early mention of curiosity can be found in Plato, Aristotle and St. Augustine's Confessions. Plato claimed that new experiences to gain knowledge are intrinsically satisfying. Aristotle believed that the desire for knowledge and curiosity is universal (as cited in Reio, Petrosko, Wiswell & Thongsukmag, 2006). Taking a different view, St. Augustine claimed that God's doctrine restricts curiosity in spite of the fact that we can grow "better in a free spirit of curiosity than under fear of compulsion" (Weiner, 2000, p. 45).

In 1890, William James, described two types of curiosity: (1) the combination of the excitement and anxiety created by exploration; and (2) scientific curiosity created by a knowledge gap (as cited in Peterson & Seligman, 2004).

John Dewey (1910) described physical, social and intellectual curiosity.

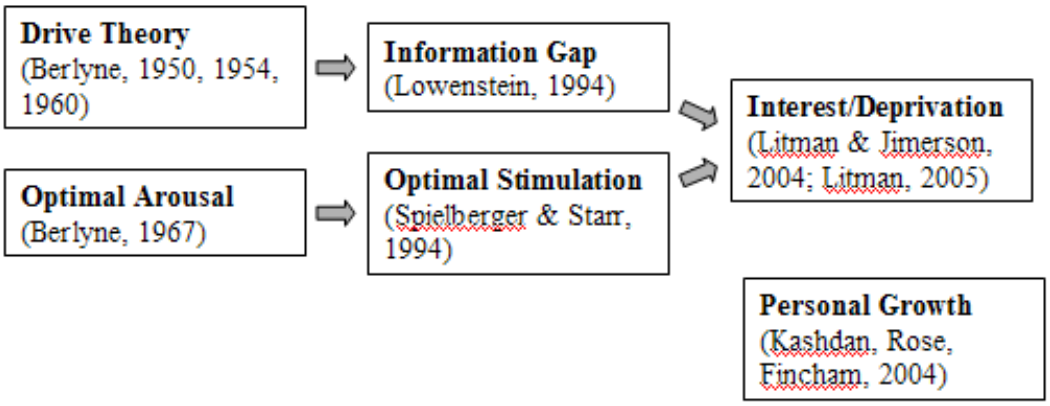
- Physical curiosity is like that of a child's exploration of the environment;
- Social curiosity is about acquiring information and asking 'why?';
- Intellectual curiosity relates to learning about a topic or problem solving. (as cited in Reio, Petrosko, Wiswell & Thongsukmag, 2006).

Piaget (1952) considered both cognitive and sensory curiosity important for cognitive development and knowledge acquisition (as cited in Reio, Petrosko, Wiswell & Thongsukmag, 2006).

Theoretical Constructs

The six (6) important theories of how curiosity is described as well as the evolution of one theory to the next.

Figure 3: Theoretical Constructs of Curiosity



Drive Theory

In his seminal work on curiosity Berlyne (1950, 1954, 1960) described four types of curiosity or exploratory behavior (mentioned earlier) and developed two major theoretical approaches. In the curiosity drive theory (Berlyne, 1950) stated that curiosity was the rewarding reduction of uncertainty. This theory is built on the assumption that curiosity-driven information gathering is motivated by the desire to

return to a state of coherence, which is disrupted by novel, complex or ambiguous information. Berlyne conducted several studies showing new stimuli are initially explored, suggesting that once information is obtained, the disruption is resolved and curiosity is lessened. However, his results did not explain why one seeks curiosity if curiosity is unpleasant (Litman & Jimerson, 2004) and why humans and animals explore without novelty or complexity presented (Litman, 2005).

Optimal Arousal Theory

To overcome these issues with the curiosity drive theory (Berlyne, 1967; as cited in Litman, 2005), the optimal arousal theory was developed. The optimal arousal theory stated that only the optimal level of arousal is pleasurable and that under or over stimulation is not. Hence, organisms will explore if they are over stimulated to lower the stimulation or under stimulated (or bored) to increase interest. Both scenarios display exploratory curiosity behaviors and positive feelings of interest. However, this theory does not explain the return to under stimulation after exploration (Litman, 2005).

Contemporary Models

The current conceptualizations of curiosity built on these early theories.

Optimal Stimulation

The optimal arousal theory was the foundation of the optimal stimulation model (Spielberger & Starr, 1994 as cited in Litman, 2005). They described optimal stimulation as a function of two processes: (a) pleasant states of curiosity and (b) aversive state of anxiety that are stimulated together by novelty. Additionally, they expanded the optimal arousal theory to include individual differences in curiosity which influence exploration and avoidance behaviors.

Information Gap

The information gap theory (Loewenstein, 1994), further developed the drive theory by emphasizing that the extent of the gap between what one knows and what one wants to know stimulates curiosity. He went on to state that curiosity would be greater towards information that would close this information gap. Lowenstein also articulated a positive relationship between curiosity and one's knowledge about a subject, that is, ones curiosity increases as he/she learns about the subject.

Interest/Deprivation

Recently, an interest/deprivation theory (Litman & Jimerson, 2004) and the expansion of this theory in relationship to wanting and liking new information (Litman, 2005) builds on the work of Loewenstein (2004) and Spielberger & Starr (1994, as cited in Litman, 2005). This theory viewed curiosity as information-seeking and problem solving behavior that is aroused either when someone feels deprived of information and wants to become more knowledgeable and when someone desires to learn more about a subject even if he/she does not feel that they are lacking in knowledge about the subject.

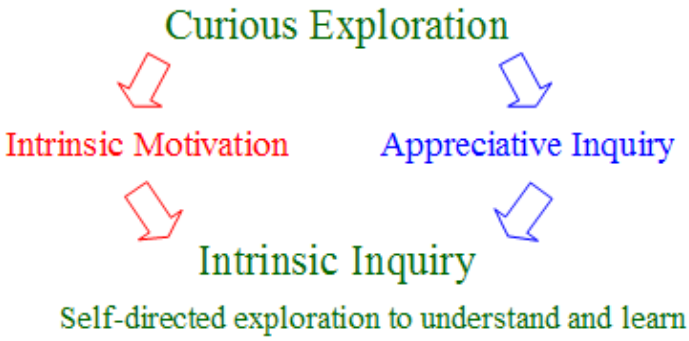
Personal Growth Facilitation

The personal growth facilitation model of curiosity posited that there are two key dimensions of curiosity (a) exploration to seek new information and experiences and (b) absorption to become fully engaged in these experiences (Kashdan, Rose & Fincham, 2004). Based on this theory, they developed a seven (7) question curiosity assessment (see Appendix C).

My Definition

My personal articulation of curiosity elaborates the interest/deprivation and the personal growth theory to creativity. Figure 4 shows these elements.

Figure 4: My Definition of Curiosity



What I like about this definition is that it captures key aspects of curiosity and links to creativity and organizational change management.

The foundation of curiosity as a means for learning about the world is rooted in the motivation to understand. Curiosity must to come from within oneself; it is not something that can be forced by others. In addition, intrinsic motivation is a core concept in developing creativity in the workplace (Amabile, 1987, 1989).

Appreciative Inquiry (Hammond, 1998) takes two concepts that are essential to curiosity. A key to curiosity is observation and drawing conclusions from those observations. When using an appreciative eye one is drawn into the subject and it creates a desire to learn more, make connections and have insights. Inquiry is the core to curiosity. By definition, inquire/inquiry is about asking questions and searching for information (www.m-w.com).

Hence, I combined these two concepts into Intrinsic Inquiry which I describe as self-directed exploration to understand and learn. The outcome of intrinsic inquiry is creativity and innovation.

WHY IS CURIOSITY IMPORTANT?

"I think, at a child's birth, if a mother could ask a fairy godmother to endow it with the most useful gift, that gift would be curiosity."

-- Eleanor Roosevelt

Curiosity is important because it stimulates life long learning and supports intellectual development, is the foundation of creativity influencing all aspects of the creativity change model, creativity components and supports creativity skills and attitudes. In addition, curiosity creates a more positive outlook and understanding of others.

Kashdan and Fincham (2002) provided an excellent summary the importance of curiosity:

Curiosity energizes… goal-directed activities that are intrinsically rewarding... This includes learning… and transforming boring activities into exciting ones by changing perspectives, altering rules, and taking risks… Curiosity is the prerequisite for exploring the environment and the self (e.g., ideas, emotions), thus leading to the attainment and integration of novel perspectives and experiences (p.373).

This description clearly outlined that curiosity supports human learning, provides the basis for creativity and creative problem solving, and improves both personal satisfaction and interpersonal relationships.

Curiosity Stimulates Life Long Learning

Key to Learning

Children's natural curiosity guides their learning of the world. Tapping into this natural learning process has been incorporated into many teaching models. Exploring one's interests will motivate learning (Forbes, 1993; Barell, 2002).

The Incubation Model of Teaching (Torrance & Safter, 1990) stressed the importance of warm up activities to heighten anticipation before deepening expectations when teaching. One of the purposes and many of the activities is to arouse learners' curiosity. In doing so, the learner will demonstrate more creative behavior throughout the learning process. Suggested activities include questioning, increasing awareness, confronting ambiguities and uncertainties, and making the strange familiar or making the familiar strange.

From the student behavior perspective, Williams (1982) discussed curiosity in his Teaching Strategies for Thinking and Feeling. His model outlined three interactive teaching-learning dimensions: the curriculum, eighteen teaching strategies and eight cognitive and affective learner behaviors. He believed that the curriculum should be developed through teacher strategies to develop the learner behaviors. One of the affective student behaviors he believed needed to be developed in students is being "keenly observant and inquisitive by nature. Always curious about people, objects, and situations. Likes to wonder, explore, ask questions and puzzle over things" (Williams, 1982, p. 383).

While not explicitly stated in Bloom's Taxonomy of Educational Objectives and Perkins (1992) educational goals, there is a clear benefit to student curiosity in knowledge gathering/acquisition (Barell, 2002).

Enhances Intellectual Development

Although the framework of intelligence is beyond the scope of this paper, a basic definition of intelligence is the 'ability to learn or understand or to deal with new or trying situations' (www.m-w.com). Without curiosity (defined as 'the desire to know' (www.m-w.com)), an intelligent student would lack the motivation to learn. While it is not necessary that the desire to learn will directly impact to the ability to learn, the desire to learn (or curiosity) is a strong component in learning and intellectual development.

From a neurological/physiological perspective, the brain grows when new connections are made. New connections are made by interactions and thoughts such as those motivated by curiosity – discovering challenges, taking advantage of opportunities, stimulating the senses, and interacting with others. The more often a connection is made, the more easily it is to make that connection. Learning throughout life stimulates the brain causing it to continue to grow and develop (Diamond & Hopson, 1998; as cited in Barell, 2002).

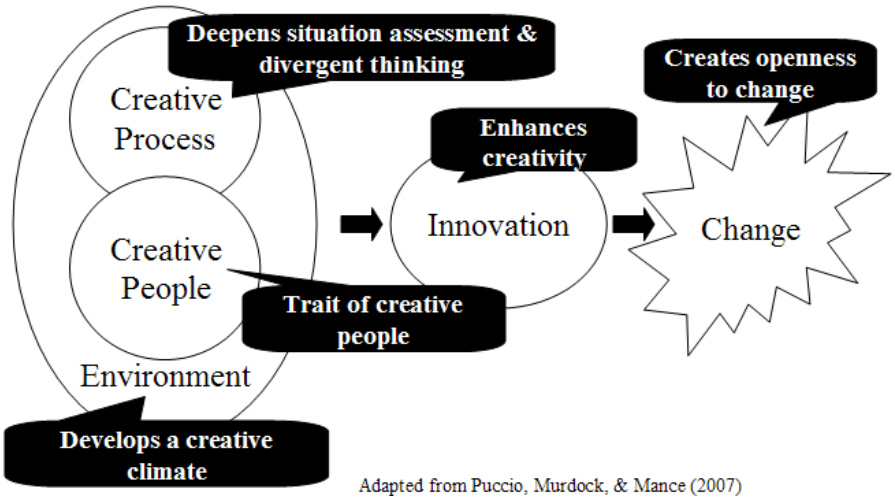
Curiosity: The Foundation of Creativity

There is a fundamental link between curiosity and creativity. Osborn, the father of brainstorming, quoted James Harvey Robinson in his foundational work Applied Imagination (1963), "even occasionally and fitfully idle curiosity leads to creative thought" (p. 308). Csikszentmihalyi clearly stated "the first step toward a more creative

life is the cultivation of curiosity and interest" in recognition of how critical curiosity is to creativity (1996, p. 346).

Using the Creative Change Model adaptation of the four Ps model of creativity (creative process, people, press, product) (Puccio, Murdock, Mance, 2007) curiosity is at the heart of creativity.

Figure 5: Curiosity and the Creative Change Model: A Systems Approach (adapted from Puccio, Murdock & Mance, 2007)



"*The more curiosity the more creativity*" (Ray & Myers, p. 40)

Fundamental Aspect of the Creative Process

Torrance (1994, from 1978) defined creativity as "a process of becoming sensitive to or aware of problems, deficiencies, and gaps in knowledge for which there is no learned solution: bringing together existing information from memory storage or external resources: defining the difficulty or identifying the missing elements: searching for solutions, making guesses and producing alternatives to solve the problem: testing and retesting these alternatives: perfecting them and finally communicating the results" (p.192-193). He went on to describe the human

motivations necessary to fulfill this definition with "curiosity and wanting to know in the face of wonder, incompleteness, confusion, complexity, disharmony, disorganization, or change" (p. 194).

The creative problem solving (CPS) process as outlined in Puccio, Murdock & Mance (2006) is a multi-step process from assessing the situation, exploring the vision, formulating challenges, exploring ideas, formulating solutions, exploring acceptance and formulating a plan. They contend that the affective skill that supports the initial stage of the CPS process, assessing the situation, is curiosity. In addition, they described the importance of knowledge and data in every step of the CPS process.

I would expand this to include that curiosity-driven questioning is important at all stages in the CPS process. The creative process is based on asking questions to define the problem (Who? What? When? Where? Why), generate ideas (What if?, making the strange familiar and the familiar strange) and plan for action (Who? What? When? Where?).

Core to Creative People

Davis (2004) identified curiosity as one of the sixteen well researched creative personality traits. He developed these categories from over 200 adjectives and brief descriptions of the creative personality gathered from over fifty (50) sources of creativity literature. Within the curiosity category, he included such characteristics as 'asks many questions', 'experiments', 'seeks interesting situations', 'asks Why?', 'enjoys taking things apart', 'wide interests', etc.

Establishes a Creative Climate

Ekvall (1996) outlined ten (10) climate factors that are important to foster a creative environment. These are: challenge, freedom, idea support, trust/openness, dynamism/liveliness, playfulness/humor, debates, lack of conflicts, risk taking, and idea time. Although Ekvall did not explicitly state the role of curiosity in creative climate, I would contend that a curious attitude will enhance seven of the ten dimensions (i.e., challenge, freedom, openness, dynamism/liveliness, playfulness/humor, risk taking, and idea time). When one is curious or wants to learn about something he/she is more likely to take on these characteristics. In addition, curious people will create an inner creative climate on these dimensions. That is, they will both challenge themselves and be free and open to new alternatives. This will lead to an internal feeling of liveliness and playfulness with a willingness to take risks. As they further their exploration and learning, individuals will find time to follow their curiosity (J. Cabra, personal communication, October 9, 2006).

Benefit to Innovation

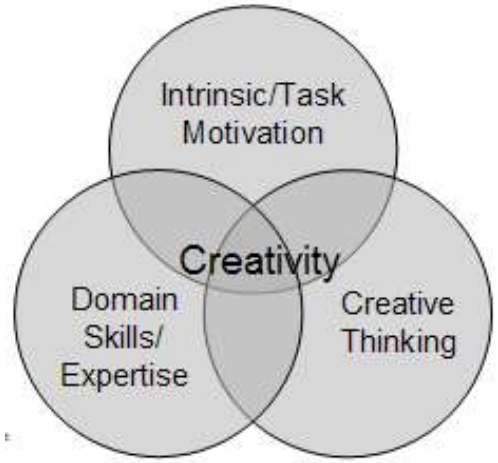
The outcome of creativity is the creative product or the innovation that occurs (Puccio, Murdock, & Mance, 2007). I believe that the creative quality of the outcome (in terms of novelty, usefulness, originality, etc.) is based on the creative quality of the input provided. This notion is supported by Torrance (1994) "when creativity is defined as a product, the results of the process are embodied" (p. 28). Because curiosity is at the root of creativity, the more curious people are, and the more they engage their curiosity throughout the creative process, the more original and innovative

the result. Further research could be conducted to explore the linkage between curiosity and innovation in more detail.

Creativity Components

Amabile (1989, 1997) outlined the three core components of creativity as domain skills or expertise, creative thinking and intrinsic or task motivation (see Figure 6). Curiosity plays a fundamental role in each of these components.

Figure 6: Components of Creativity (Amabile, 1989, 1997)



- Domain skills or expertise are one's knowledge and experience in a particular area. Because curiosity is the motivator to learning it plays an important part in the development of domain skills.
- Creative thinking is thinking styles and personality traits that enable one to use domain skills in new ways. Several of the creative working style indicators, such as "an ability to concentrate effort and attention for long periods of time", "dedication to doing the work well" and "willingness to work hard" (Amabile, 1989, p 47) relate to curiosity. These can be directly connected to the absorption and exploration components of the Kashdan, et.

al. conceptualization of curiosity (2004). Many of the creative thinking styles described such as "keeping option open", "suspending judgment", "thinking broadly", "breaking habits", and "using tricks" could be considered skills that are enhanced or motivated by a curious attitude.

- Intrinsic motivation is the desire to do something for its own sake. Schawlow (Amabile, 1989), a Nobel prize winning physicist, noted "The most successful scientists often are not the most talented, but the ones who are just impelled by curiosity" (p. 57). Ryan & Deci (2000) mentioned that their early work focused on "the natural activity and curiosity referred to as intrinsic motivation" (p. 76). Curiosity can be a person's guide to their intrinsic motivation.

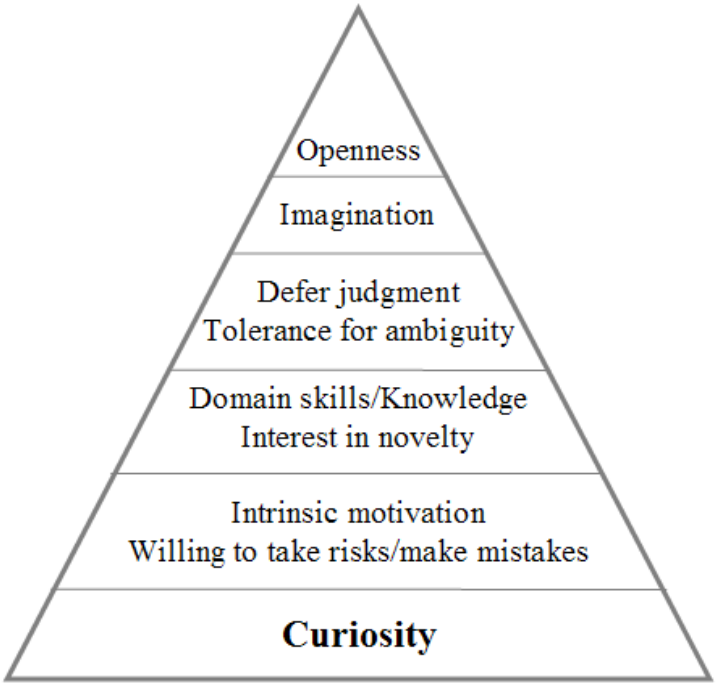
  "*When you follow your curiosity, you'll discover what truly interests you, and you may even discover the link between your responsibilities and your passions*." (Moser-Wellman, 2001, p. 51)

Amabile (1989) claimed that these three components are necessary for creativity to occur. Curiosity plays a key role in each of these components, linking the importance of curiosity to creativity.

Creativity Skills and Attitudes

Based on this review of the literature on curiosity, I propose the following hierarchy of creativity characteristics, attitudes and skills, where curiosity is at the foundation. In this way, curiosity is the motivation that drives these higher dimensions.

Figure 7: Structure of Curiosity Related Creativity Characteristics/Attitudes/Skills



Creates Openness to Experience

Curiosity can be considered the motivation for openness, whereas openness itself is a higher level personality or psychological disposition that includes other characteristics such as imaginativeness and being unconventional (Peterson & Seligman, 2004; Costa & McCrae, 1992; as cited in Leslie et. al., 2002).

Rogers (1959) described openness to experience to be when a person is completely aware of the situation, reacts without defensiveness and is tolerant of the situations' ambiguity. These characteristics are important components in curiosity. Osborn (1963) linked awareness with curiosity, "When awareness goes beyond receptivity, it becomes active curiosity" (p. 308).

Another aspect of the association between openness and curiosity is heightened interest in novelty (Langevin, 1970). When one is curious, they are willing to go beyond what they know and be exposed to new things. A curious person will reframe

an unknown situation with a sense of excitement which will make them more open to solutions (Thatchenkery & Metzker, 2006).

Interpersonal curiosity (that is, the curiosity to learn others' perspectives) will in turn motivate the group to be open to alternatives that meet everyone's needs (Schwarz, 2005).

Eliminates Fear, Enhances Risk Taking and Willingness to Make Mistakes

Curiosity also supports other skills that are important to creativity.

Fear is a major barrier to creative ideas and innovation. Encouraging curiosity by destroying judgment eliminates fear and creates a sense of confidence. In this way, curiosity opens one to experimenting and discovery that judgment blocks (Ray & Myers, 1989; Cameron, 2005).

When people are driven by curiosity, they are more willing to take risks. While many people are uncomfortable with an uncertain or ambiguous situation, a curious person will be more likely to view it as an opportunity for exploration (Barell, 2002).

Similarly, an important component of learning and creativity is the willingness to make mistakes. When people take a curious attitude, they bring a passion for learning and experimenting that reframes mistakes into opportunities for growth (Land and Jarman, 1992).

Curiosity Cultivates Personal Satisfaction & Empathy for Others

Curiosity is very powerful in enhancing one's engagement in and perception of their life and of other people.

Increases Life Satisfaction, Personal Achievement and Well Being

Cameron's quote describes another key aspect of curiosity, that is, the sense of accomplishment and satisfaction that it provides to human beings.

> *Fixated on the need to have something to show for our labors we often deny our curiosity. Denying our curiosity, we deny our growth… Exploration leads to accomplishment*. (Cameron, 2005)

Torrance also had a strong understanding of this power of curiosity. He believed that viewing the world with a creative attitude and a sense of curiosity strongly influences one's future accomplishments (Torrance, 1983).

Anthony (2003) proposed that curiosity allows one to continue to learn throughout life and provides exposure to new things and connections to facilitate personal growth and life-long satisfaction. Ludeman & Erlandson (2003) noted that rather than becoming defensive towards negative feedback, a curious attitude will allow a person to view the feedback as an opportunity for learning and personal development.

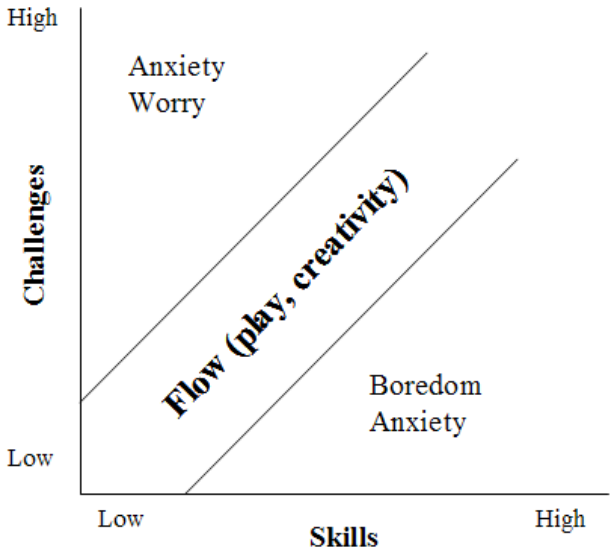
Taking this a step further, curiosity may be integral in personal well being. Personal curiosity can be the impetus for searching for and obtaining personally meaningful activities, which in turn provide a sense of life direction and purpose (Seligman, 2002 as cited in Kashdan, Rose, Fincham, 2004).

Ryan & Deci (2000), in their work on self-determination theory, found that intrinsic motivation and curiosity supported skill development, activities become easier, aspirations and ultimately, well being increases.

Engages Flow

Yet another aspect of curiosity relates to Csikszentmihalyi's (1975) concept of flow. He defined the flow state to be the balance between boredom and worry. This concept can be linked to the optimal stimulation theory of curiosity (Spielberger & Starr, 1994; as cited in Litman, 2005) which balances the pleasant aspects of curiosity with the anxiety creates by too much novelty. When people feel either too bored or apathetic or too challenged they cannot be in the state of flow. Taking this further, curiosity-driven learning brings a person back into flow by both increasing his/her skills and desire for new challenges.

Figure 7: Flow as the balance of challenges and skills (Csikszentmihalyi, 1975)



Csikszentmihalyi (1996) defined the seven conditions of flow in creativity: (1) clarity of goals; (2) knowing how well one is doing; (3) balancing challenges with skills; (4) merging action and awareness; (5) avoiding distractions; (6) losing a sense of time and surroundings; (7) creativity is autotelic (an end in itself) experience. Several of these conditions (such as, balancing challenges with skills, merging action and

awareness, avoiding distractions, losing a sense of time and surroundings, and creativity is autotelic) are related to curiosity and linked with intrinsic motivation. The timeliness aspect of flow is related to the absorption quality of curiosity (Kashdan, Rose, Fincham, 2004).

Improves Relationships and Enhances Empathy

From a social psychological viewpoint, the role of curiosity has been explored in interpersonal relationships (Kashdan & Roberts, 2004; Kashdan, Rose & Fincham, 2004). They found that curiosity facilitates personal growth and intimacy when meeting someone new, in terms of attraction and closeness.

Barell (2002) maintained that a community of learning is created through curiosity-driven inquiry and discover rather than instructional approach to education. This is because cooperation will increase as the group observes and generates hypotheses together during the learning process.

Applying curiosity to gain alternative perspectives and to understand others' points of view motivates the learning of missing information, and an understanding why others think or feel differently. Curiosity, is therefore, an avenue to learn more about others and what makes them feel important (Anthony, 2003; Schwarz, 2005). The question, "If I were X, what would be important to me?" can propel people to learn about others and provides an opening for empathy (J. Cabra, personal communication, October 9, 2006).

Conclusion

Because curiosity is defined as the ‘desire to know’ it is not surprising that curiosity is at the foundation of key learning theories. It is important for teachers to engage and encourage the curiosity of their learners.

Curiosity is the spark that ignites creativity. Curiosity is at the heart of the creative process, people and creative environment. Tapping into ones curiosity leads to interpersonal and intrapersonal satisfaction.

WHY IS CURIOSITY IMPORTANT IN BUSINESS?

> *The times mandate curiosity. To create anything new requires first questioning the old. Why are we doing it this way? Is this the very best way? Have you tried this? Why does this work like this? Why? Why? Why?* (Land & Jarman, 1992, p. 164)

This questioning process – testing the old and seeking the new is an aspect of curiosity has been influential in many business successes. Business ideas are often born out of applied curiosity. While many people ask questions, it is critical to fully explore and understand the issue, draw conclusions and act on those conclusions. This type of curiosity is the engine to solving complex problems and identifying new opportunities.

The October 2006, Center for Creative Leadership (CCL) Innovation Leader poll, indicated 92% either agreed or strongly agreed that innovation was important to their success as leaders and 91% indicated that innovation was important to the success of their organization. Given the strong unpinning of curiosity to creativity and the perceived high level importance of innovation in organizations and leadership, enhanced curiosity is a key to business success.

Curiosity at Work

There are many examples of companies applying curiosity to their business.

A famous example of corporate curiosity is IDEO. IDEO is a product development firm that has won many design awards and creates over 90 products each year from computers to toys to medical devices. The core of IDEO's curiosity is their

people and process. They only hire people with high intellectual curiosity and continuously looking to do new things. IDEO uses a 5 step creative process that is rooted in curiosity: (1) understand; (2) observe; (3) visualize; (4) implement; and (5) evaluate. In the Understand phase, the project leader learns everything about the product they are designing. The Observe phase is where they watch people doing the task and using the current products available. These phases tap into the two essential aspects of curiosity – learning through questioning and observation. Even if they are designing a familiar item that they know a lot about, for example, a toothbrush, they approach the assignment as if they know nothing and start with curiosity driven questioning (Kelley & Litman, 2001). This approach is similar to the Synectics approach of 'making the familiar strange and the strange familiar' (Gordon, 1961).

Other examples of business success developed from observation and conclusions rooted in curiosity are:

- Walt Disney watched his daughter on a carousel when he observed that the parents looked bored and the park was ill kept. He wondered why couldn't there be a park where the whole family could play.
- Howard Schultz, the Starbucks CEO, used to sell cone coffee filters with an attached Thermos. He noticed that a coffee roasting company bought a lot of filters, went to visit them, was intrigued and bought them. When in Italy, he noticed the prevalence of espresso bars and realized Starbucks could differentiate by serving coffee Italian style. (Moser-Wellman, 2001)

Business Requires Creativity; Creativity Requires Curiosity

The business world today is increasingly complex. The pressures facing businesses are increasing and the old patterns of thinking and solutions are no longer effective. In order to stay competitive and be successful companies are increasingly

trying to creatively solve business problems. A creativity-driven business will flourish with new products, increased sales and profitability. There are many challenges that restrict creative thinking in organizations, such as short-range thinking, hierarchical structures, budget pressures and challenge of creating an environment conducive to creativity (Van Gundy, 1992).

As discussed in the "why is curiosity important?" section, curiosity is a fundamental component to creativity. When individuals are curious, that is driven by intrinsic motivation and careful observation with a questioning mind, their attitude will be the basis for a climate for creativity and innovation. In addition, interpersonal relationships will improve through a deeper consideration of others' perspectives and a lack of defensiveness in their attitudes (Ludeman & Erlandson, 2003). The key creativity skills of openness, risk taking and willingness to make mistakes are hallmarks of a curiosity-driven attitude.

Organizational Knowledge

Business literature frequently mentioned the importance of knowledge sharing and building in an organization. Senge (1990) and Fullan (2001) recognized the importance of organizational learning. The connection of organizational learning to curiosity was clearly made by Palus & Horth (2002) in their creative leadership skills.

Organizational Learning

Organizational learning is a key to business success (Senge, 1990). Senge defined learning organizations as "organizations where people continually expand their capability to create the result they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are

continually learning how to learn together" (p. 3). The key to organizational learning is individual learning. He used the term 'personal mastery' to describe personal growth and learning. People with high personal mastery continually expand their abilities by taking a creative and learning approach to life. I would contend that this view of personal mastery is highly associated with a curiosity which will propel one to mastery.

Senge (1990) also discussed the importance of sharing personal and organization mental models. Mental models are the images, assumptions and beliefs about how the world (or the organization) works. Mental models function as a filter for learning. Balancing advocacy (communicating one's perspective) and inquiry (asking questions and listening to others) are necessary to break down mental models for organizational learning to occur. The type of inquiry Senge described requires both curiosity in others' mental models and the willingness to change your own.

Knowledge Building in Change Management

According to Fullan (2001) knowledge building is one of the five essential components of change leadership. His other components are moral purpose, understanding change, relationship building, and coherence making. There are two types of organizational knowledge: explicit and tacit. Explicit knowledge contains the concrete information that can be communicated, and tacit knowledge contains the skills, beliefs and understandings of the organization. Tacit knowledge is more difficult for leaders to communicate because it is highly subjective and insights based. Acquiring both of these types of knowledge is enhanced through curiosity because it drives the desire to learn and causes greater interpersonal understanding (Kashdan, Rose & Fincham, 2004).

Fullan wrote,

> *Leaders in a culture of change realize that accessing tacit knowledge is crucial and that such access cannot be mandated. Effective leaders understand the value and role of knowledge creation, they make it a priority and set about establishing and reinforcing habits of knowledge exchange among organizational members.* (p. 87)

Knowledge building is challenging for organizations because in order to share knowledge individuals need to respect and listen to each other. Similar to Senge's mental models, Fullan described that knowledge exchange will occur in non-competitive collaborative environments and that good relationships between people is necessary for knowledge sharing to occur. A curiosity-driven culture of sharing will foster this learning environment.

Key to Leadership Success

Leadership Capabilities

The necessary leadership capabilities outlined in the Mumford et. al., (2000) leadership model dovetail with the benefits of curiosity. They described capabilities such as "wisdom and perspective taking enable leaders to 'go outside themselves' to assess how others react to a solution, identify restrictions, develop plans, and build support for implementation" (p. 17). They outlined three main skill areas: creative problem solving, social judgment and knowledge.

Based on this curiosity literature review, it appears that curiosity is a critical skill in this leadership model. As previously described, curiosity plays a fundamental role in the creative problem solving process and is a core characteristic of creative people. We

have also described that curious people have superior social skills. And certainly, curiosity drives knowledge.

Creative Leadership Skills

Palus & Horth (2002) outlined six creative leadership skills needed to solve complex challenges: (1) paying attention; (2) personalizing; (3) imaging; (4) serious play; (5) collaborative inquiry; and (6) crafting. Curiosity is a key component of serious play, has roots in collaborative inquiry, paying attention and personalizing.

They described play as "curiosity, exuberance, spontaneity… and a feeling of being outside of time" (p. 108) which appears connected to being in a flow state. An important component of serious play is learning. Through play, observation and asking questions people learn the nature of the organization. This mirrors how children learn about the world through play based experimentation. Palus & Horth also suggested other curiosity related tools such as making things strange and finding surprise.

Collaborative inquiry (co-inquiry) they maintained is rooted in the principles of appreciative inquiry and using objects or images (such as the CCL Visual Explorer, 2001) to enhance dialog. The foundation of this skill is dialog and creating opportunities for dialog, such as coaching. The suggestions for developing co-inquiry skills are similar to those for curiosity such as asking open ended questions and exploring other points of view (Palus & Horth, 2002).

Palus & Horth also noted that paying attention was a key skill in creative leadership and in developing curiosity. They described key components of paying attention: understanding and using different attention modes including kinesthetic, paying attention to negative space and asking questions. They outlined two modes of

attention: Left mode driven by logic and analysis, and right mode relating to images and patterns (again related to Csikszentmihalyi's flow state). The aspect of asking powerful questions is rooted in seeing a situation from new and multiple perspectives in order to shift perception about the issue. They outlined the key benefits of powerful questions to be invite exploration, resist easy answers and invoke strong passions. These kinds of questions come from being curious about the situation and asking exploratory questions to learn as much as possible.

Palus & Horth's view of personalizing is about bringing personal interests to the workplace and leveraging them to further engage learning. This relates to the concept of intrinsic motivation and being passionate about what you do (Palus & Horth, 2002). Curiosity can be one's link to intrinsic motivation and interests.

Curiosity in Advertising

Another connection for curiosity in organizational/business setting is the benefit that curiosity can have in advertising effectiveness. Research has shown that engaging curiosity in advertising impacts product perception and knowledge. For example, Menon and Soman (1999) connected curiosity theory to the development of advertising strategy. They conducted an internet-simulated experiment with interactive advertisements for a breakthrough new digital camera. This research showed that by engaging curiosity through the provision of partial information including product category, enhanced consumer motivation to learn more about the product and lead to better learning about the product learning. They also demonstrated that curiosity-driven advertising resulted in better product evaluation and greater perceived product novelty.

Hewett (1975) determined that an outdoor billboard advertising campaign significantly engaged curiosity. Based on telephone research conducted pre -post exposure to an outdoor billboard campaign saying "Who was the twenty-third president?" significantly more respondents in the post research correctly identified Benjamin Harrison than in the pre-exposure research.

Conclusion

Business challenges require creative thinking and creative thinking requires curiosity. Learning is a key to organizational success. Organizations need be foster knowledge sharing. Explicit and tacit knowledge transfer is enhanced through curiosity. The core skills in leadership and particular creative leadership are based on a curiosity attitude towards organizational challenges.

WHO IS CURIOUS?

Another interesting aspect of curiosity in the literature relates to people in general and creative people in particular. In answer to the question, "Who is curious?", the literature indicates that everyone is in general (Torrance & Goff, 1990) and creative people in particular seek to keep their curiosity alive (Davis, 2004).

> *On danger of appearing trite, I want to emphasize the importance that the characteristic of basic curiosity (italic) is to the creative person. Curiosity can pay off in unexpected ways.* (Whiting, 1958)

We Are All Innately Curious

As children we are naturally curious about the world. Through a sense of awe and wonder, our curiosity propels us to learn about the world (Torrance & Goff, 1990). However, like any skill, if it doesn't get used, it gets lost. We need to feed our curiosity to keep it alive.

Creative People Keep Their Curiosity Alive

Curiosity is the hallmark of a creative person. As described in the "Why is curiosity important?" section of this literature review, curiosity is one of the core creative personality traits identified by Davis (2004) in his literature review on the characteristics of creative people.

Some particularly famous curious people are Albert Einstein, Leonardo Da Vinci, and Thomas Edison.

> *We are not suggesting that high curiosity leads directly to high creativity but that high curiosity is necessary, though not sufficient, for creativity.* (Kashdan & Fincham, 2002)

HOW IS CURIOSITY LOST?

Because curiosity is so important for learning and creativity, it is important to understand what holds people back from being more curious. We are born curious, and as children, we use our curiosity to learn about the world. However, our curiosity fades as we grow and develop into adults (Ruggiero, 2004; Conner, 2004; Gelb, 2004; Torrance & Goff, 1990; Tharp, 2003). In a study by UCLA, it has been found that five year old children ask 65 questions a day, whereas a 44 year old adult asks six (6) questions a day (Canterucci, 2005).

Why does this happen? Have we learned everything there is to learn? I think not. Parents and educators influence on young children limits their curiosity (Ruggiero, 2004; Gelb, 2004; Conner, 2004; Torrance & Goff, 1990). There are also many layers of judgment (Ray & Myers, 1986) that impact our curiosity. These reasons are rooted in an overall sense of fear and desire for approval rooted in a feeling of insecurity/ inadequacy. Other barriers to curiosity include apathy, not wanting to know, believing that what is known is the truth or a belief that what is known is the best solution (Canterucci, 2005; Barell, 2002).

Judgment

Judgment blocks the freedom and openness necessary for curiosity. In the words of Julia Cameron, "The beginner's humility and openness lead to exploration" (2005).

In his seminal work, Applied Imagination, Osborn (1963) described the ground rules for divergent thinking in brainstorming to include deferring judgment. Deferring judgment frees one from the anxieties of self worth and concern regarding acceptability

or appropriateness of ideas or actions (Parnes, 1997). Simply put, "The less judgment, the more curiosity" (Ray & Myers, 1986. p. 40).

Rogers (1959) discussed the importance of providing a psychologically safe climate that was absent of external evaluation as a necessary condition for creativity to flourish. He said that without external standards, one is more open to experiences and learning.

At the same time, Maslow (1959) described the self-actualized person to be free from judgment "less controlled and inhibited in their behavior, which seemed to be able to flow out more easily and freely and with less blocking and self-criticism" (p. 85). He went on to observe, "self actualizing creativeness was in many respects like the creativeness of all happy and secure children. It was spontaneous… a kind of freedom from stereotypes and clichés" (p. 86).

Ray & Myers (1986) outlined four kinds of negative judgment: (1) self-judgment; (2) judgment from others; (3) collective judgment; and (4) judgment judging the judgment. Self judgment is our voice from within that tells us what are acceptable thoughts and behaviors. Judgment from others is described as when others judgment confirms self judgment. Collective judgment comes from media, culture (e.g., social class, etiquette, etc.). The fourth level, judgment judging the judgment, comes when the three lower levels of judgment impact her/his view of her/himself and the environment, often leading to insecurity or a feeling of inadequacy.

Parents and Educators

Parents and educators are important in the growth and development of children. However, through direct and indirect means, they also play a major role in the loss of curiosity.

A key factor is parents' limiting of children's questions. Anyone who has spent even a few hours with a young child has experienced the constant flow of questions about everything and anything. Parents become tired, too busy or perceive the questions as silly. They then limit questioning by scolding children for asking so many questions (Ruggiero, 2004; Torrance & Goff, 1990). Torrance and Goff (1990) wrote, "We discourage them by saying, "Curiosity killed the cat." If we were honest, we would admit that curiosity makes a good cat and that cats are extremely skilled in testing limits and determining what is safe and what is dangerous." (p.2). Parents often tell children not to do things – Don't do that! Don't go there! Don't touch that! This disapproval of curiosity diminishes interest and desire for exploration and discovery (Perry, 2006).

Parents also limit children's curiosity in more subtle ways. They ignore questions possibly due to embarrassment or frustration that they do not know the answer (Conner, 2004) or that they too busy to take the time (Torrance & Goff, 1990). This in turn, may teach children to not ask questions that would reveal ignorance (Nickerson, 1999). Another way parents extinguish their children's curiosity is by creating a dependence on their thinking and not requiring children to think for themselves (Marcum, Smith, & Khalsa, 2002).

Once in school, children find large classes and an agenda/curriculum to follow, which limits teachers' ability to have time to answer all their questions (Ruggiero, 2004). In addition, education stresses the importance of knowledge and the answers to questions rather than the asking of questions (Gelb, 2004). This is reinforced by the value that education and parents put on grades that are based on knowledge. In summary, "You could almost say that natural interest is trained out of us as we're taught to value the right answer above our inclination to explore" (Conner, 2004, p. 131).

To emphasize this point, Albert Einstein said:

> *It is, in fact, nothing short of a miracle that modern methods of instruction have not entirely strangled the holy curiosity of inquiry. For this delicate little plant… stands mainly in need of freedom; without this it goes to wrack and ruin without fail.* (Guillen, 1995, p. 264)

Another perspective on the impact of education on curiosity is the role of the intellectual curiosity of the teacher (Sanders, 1961; as cited in Taylor, 1964). Torrance found that the creative writing of students with highly intellectually curious or creatively motivated teachers significantly improved during a 3 month period, whereas students of lower scoring teachers did not (Taylor, 1964).

Other Barriers

In addition to judgment, people often block their curiosity through their beliefs and perceptions of the world which cause them to be arrogant, fearful and apathetic. In addition, excessive confidence or excessive caution dampens ones curiosity (Hargadon & Sutton, 1996).

As we become more knowledgeable, we may become arrogant and overly confident in our knowledge which leads to thinking that we know everything. This type of thinking is then turned into a belief system about what and who is right, and what to do and what not to do. By holding beliefs, one thinks that he/she knows the truth about a situation and that learning is no longer necessary. As soon as one thinks that she/he understands or knows the answer to the question, the desire for deeper understanding is limited (Marcum, Smith, & Khalsa, 2002; Canterucci, 2005; Hargadon & Sutton, 1996).

The fear of the unknown and change or the desire to preserve the status quo also limits curiosity (Canterucci, 2005; Barell, 2002; Hargadon & Sutton, 1996). As people become comfortable in their routines they fear what might happen if they are changed. Once one feels safe in a situation, the thought that the exploration may be scary and the learning might cause pain limits curiosity. A related concept is being in denial of a situation and hence not wanting to know the answer to a question (for example, how long will I live?)

Apathy or indifference towards a particular task may lessen ones curiosity about it. When one is fully curious, they will see all experiences as opportunities for learning. Similarly, is the belief that a better approach or answer is not possible. Or that it is the responsibility of others to provide understanding, set direction or make decisions (Canterucci, 2005; Barell, 2002).

Conclusion

There are many factors that limit our curiosity. As adults, a key barrier to curiosity is judgment. Judgment is critical to curiosity because it holds people back

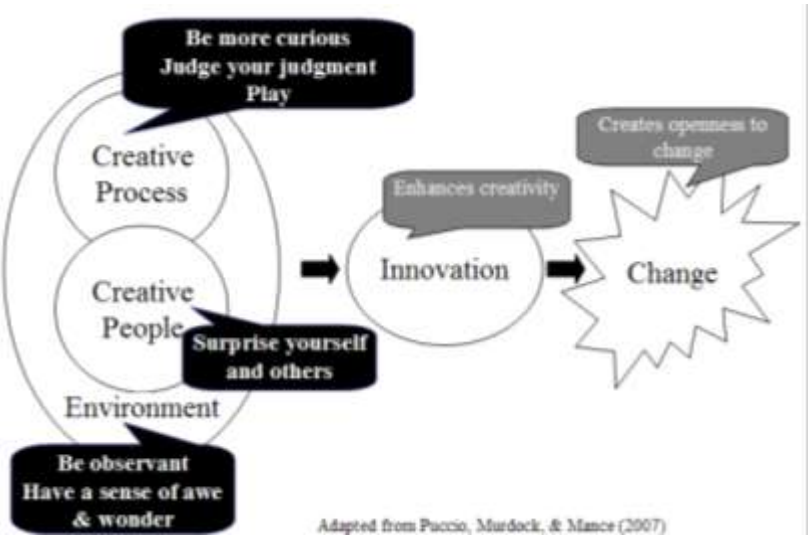
from being open and accepting which in turn restricts one's desire for exploration and novelty. Parents and educators play an important part in discouraging curiosity in children. This occurs through both subtle and direct discouragement. The current educational system tends to focus on the agenda, rather teaching the importance of the learning process. Hence, it is important to foster curiosity in children through deliberate positive response to their naturally inquisitive nature.

HOW CAN I BECOME MORE CURIOUS?

"*Some people find their curiosity shutting down as they age… But there's nothing necessary or inevitable about it. We can fight the lockdown of our curiosity*." (Tharp, 2003, p. 236)

As a framework for tools and techniques to encourage curiosity, I adapted four Ps model of creativity (creative process, people, press, product), presented earlier (Puccio, Murdock, Mance, 2007). In the following sections, I outline tools for encouraging curiosity through a focus on creative environment, creative process and creative people.

Figure 8: Curiosity Tools Mapped to the Creative Change Model (Puccio, Murdock & Mance, 2007)



Be Observant

Curiosity starts with observation. The first step to being curious is to see the world around you and then to draw conclusions and hypotheses.

Pay Attention to Small Things

Train yourself to be more observant of the things that you are oblivious to and pay closer attention to daily experiences (Nickerson, 1999).

Reflect on what things may mean. Focusing on things that are important or can be fixed, develop hypotheses and conclusions.

Look at something as though for the first time.

- Look at your hand: First look at the entirety of your hand. Then look at individual aspects – your palm, the back of your hand, your fingers, your nails, your knuckles. Give yourself time to wonder about hands. Make a list of questions you have about your hand.
- Observe your workplace: What do you see? What does it feel like? What works well? What do you like about it? Why is it the way it is? Make a list of questions about your workplace.

Use All Your Senses

Experience something with all your senses the way a young child would. In a quite, relaxed setting eat a piece of fruit (e.g., an orange).

- Feel the smooth skin. Place the orange against your face. Caress your face with the orange. Roll it gently.
- Hold it in your hands and experience its roundness. Close your eyes and gently let your fingers touch the orange in its entirety.
- Carefully peel part of the skin or cut a wedge. Smell the aroma as you peel the skin. Look at the white side of the skin.
- Look at the shiny surfaces inside. Smell the inside.

- Notice the juicy inside.
- Feel the juice. Squeeze some juice on your finger. Touch your finger to your lips. Taste the tang and sweetness.
- Break off a part to eat. Savor the taste. Chew it slowly. Become aware of the texture. Notice how it feels in your mouth – on your teeth, your tongue. Swallow slowly.

(Shallcross & Sisk, 1982, p. 17)

Look With Fresh Eyes

Whether at an art gallery, looking at post cards or any picture you come across, to make the experience more meaningful, ask yourself "What is it?" and "What does it mean?"

Choose a visual that you don't particularly like. Look at it carefully. Look at it from different angles/perspectives. Imagine that you are inside the picture. Ask:

- Why don't you like it?
- How does it challenge your view art?
- What might a child think of this?
- What would you tell a child about it?
- How might you improve it?

(Ritchhart, 2002)

Try this also with anything in your environment. Look at your home, your desk with fresh eyes. What do you see? What do you like? No like? How might you improve it?

Confront Ambiguities/Uncertainties

Confronting ambiguities and uncertainties helps to engage curiosity (Torrance & Safter, 1990 and Torrance, 1977). Ask questions to fully understand the situation and explore any areas of ambiguity or uncertainty.

- Observe the situation
  - Who is involved? What is your role?
  - What is happening?
  - What is bothering you? Others?
  - Use the five whys: Why this is happening?
- Confront ambiguities/uncertainties
  - What is missing? What are you uncertain about?
  - What doesn't seem to make sense?
- Draw conclusions
  - What do we know? What does this mean?
  - What are the larger issues?

(Moser-Wellman, 2001)

Have a Sense of Wonder and Awe

Children learn about the world by exploring the world around them with a sense of awe and wonder. They follow their interests and what they like about the world to learn new things. This approach encourages curiosity in adults.

Take an Appreciative Inquiry Approach

The concept of Appreciative Inquiry first began in the 1980s as an approach to change management. Appreciative Inquiry suggests that we focus on the beauty and

spirit of an organization and what works. The process determines what the organization wants to be based on an understanding of the strengths.

It is easy to get mired in details of the life and not take the time to step back and see the beauty in yourself and others.

This understanding is created through appreciative questions such as:

- What inspires or energizes you?
- What works well?
- What do you/we do well?
- What do you do that makes others happy?
- What is it that makes it possible for you to do the things you love?
- What do you value most about yourself?

(Hammond, 1998)

Ask Wonder Questions

One of the core aspects of curiosity is the childlike sense of awe and wonder of the world (Davis, 2004). Hence, to stimulate curiosity, develop a deep sense of wonder about the world and life (Nickerson, 1999). To do this, ask wonder questions. Wonder questions are any question that starts with "I wonder…" These questions stop criticism, blame and open one to new possibilities.

Consider such questions:

- I wonder… what I am supposed to learn from this situation?
- I wonder… how I might be more open to negative feedback?
- I wonder… how I helped create this situation?
- I wonder… what I can do to improve the situation?

(Ludeman & Erlandson, 2003)

Be more curious, ask questions

Overall, the main way to become more curious is to be more curious. Curiosity breeds curiosity. Use curiosity language – say, "I'm curious about…" or "I wonder about…" It will keep curiosity top of mind (Nickerson, 1999).

Ask "What Am I Curious About?"

1. Make a list of 100 questions you have. They can be about anything as long as it you think is important. Consider all aspects of your life: finances, enjoyment, meaningfulness, family, relationships, and travel.
2. Choose the top 10
3. Identify curiosity themes
4. Focus on a theme for the day or a question for 10 minutes
    - Choose a theme for the day. Write down observations throughout the day about that theme
    - Choose one of the questions. Write the question on a piece of paper. Relax. Close your eyes. Breathe. Think about the question in your mind for 10 minutes. Take 10 minutes to write down your thoughts. Consider next steps to answer the question.

(Gelb, 2004)

Keep a Curiosity Journal

Observing behavior encourages. Keep a journal of the things that stimulate your curiosity.

Use the following list to start your thinking.

- I’m curious about…
- I want to find out…
- I wonder…
- What is the meaning of…
- I do not understand…
- What puzzles me is…

Organize into categories/themes/issues. Prioritize interests.

Reflect on your curiosity with the following questions.

- What surprised me was…
- What I learned was …
- What I learned about myself is…
- The assumptions here seem to be…
- This reminds me of...
- The key ideas are…
- My prediction is…

(Barell, 2003)

Don’t Assume, Ask Questions

When you're talking to people, ask clarifying open ended questions, don’t jump to conclusions or make assumptions. See how long you can talk with someone only asking open-ended questions. Some example questions are:

- "Really?"
- "Why'd you do that?"
- "What was that like?"

- "Why do you think they did that?"
- "What's up with that?"
- "So, what are you going to do?"

http://genuinecuriosity.typepad.com/about.html

Let Your Interest and Desire to Know Show

Curiosity about the world should not be only internally driven. It is helpful to reflect on your interpersonal awareness and use curiosity to understand the others. Reflect on the following questions:

- How do you demonstrate your curiosity in others? How well do you listen to others?
- Do you more often notice positive or negative things in others? Does your behavior say 'I'm looking for people doing things right and doing the right things?'
- When was the last time you recognized someone for his or her actions?
- How do you ask for feedback?
- How well do your colleagues really know you? What have you told them about your hopes, dreams, and passions?

(Kouzes & Posner, 1999)

Explore the Unexperienced

Be an Explorer

Imagine that you are Jacques Cousteau the famous oceanographer, Christopher Columbus, Marco Polo. Go somewhere you have never gone or talk to someone you have never spoken with before. This doesn't have to be an exotic vacation. It could be right in your neighborhood.

Use the 5 why's tool to deepen your understanding of the world around you.

Follow your interests

When something captures your attention, explore it. Don't say you are too busy or it isn't your business (Csikszentmihalyi, 1996). Don't let fear or anxiety get in the way of pursuing your passion (Svoboda, 2006)

Judge Your Judgment

Destroy Self Judgment

Judgment destroys curiosity, so destroy judgment and be more curious. Ray & Myers (1986) outlined several tactics to destroying the judgment that blocks curiosity.

- Pay attention to your thoughts
- Listen to the negative things you say to yourself. What do you do with these thoughts?
- Stop listening to the judgment
  - Attack the judgment. Scream at it. Don't let it get through.
  - Make the judgment look ridiculous.
  - Blow up the judgment to be more than it is. For example, if you say to yourself, "I could never do that" exaggerate it but saying "I am the biggest

coward in the world" or imagine the words in neon lights or on a billboard for everyone to see.

Be Open to Changing Beliefs

Beliefs tend to be built on the existing beliefs. When situations or times change beliefs need to change too.

- Reevaluate your beliefs about yourself, your business and the world around you based on the current situation – just because something didn't work in the past or what wouldn't be done means that it can't be now.
- Use your curiosity to learn about the situation and keep your beliefs relevant to the situation.

(Marcum, et. al., 2002)

Play – Make the Familiar Strange & the Strange Familiar

Children's curiosity and exploration may be expressed in play. It is important to provide children opportunities for curious play because play at brings them pleasure, pleasurable activities are repeated, repetition brings mastery, and mastery brings a sense of accomplishment and confidence. The basic concept of learning in a pleasurable environment is productive holds true for both adults and children (Perry, Hogan & Marlin, 2000).

Adults play more with concepts and ideas, whereas, children play with toys. Being playful will increase curiosity as it relaxes constraints and generates knowledge through exploration and experimentation (Palus & Horth, 2002).

The Synetics theory (Gordon, 1961) provides a model for playing with words, concepts, assumptions and irrelevant objects. Their fundamental approach of making

the familiar strange and the strange familiar is a way of playing with words, phrases and meanings.

Be Surprised and Surprise Others

- Be open to new experiences. Be surprised by something every day.
  - Take the time to look at things you haven't seen or heard before.
  - Think about how it is different that what you are used to.
  - Ask yourself: "What is the essence of this experience?"
- Try to surprise at least one person every day.
  - Say or do something unexpected – ask a question, state an opinion that you wouldn't have.
  - Break your routine.
  - Make more time for someone, take them somewhere new
  - Change your appearance
- Keep a diary of what surprised you and how you surprised others
  - Reread it to see how your life has change by increasing your curiosity.

(Csikszentmihalyi, 1996)

Conclusions

There are many techniques to help encourage curiosity. It is helpful to consider engaging curiosity from the perspective of people, process and environment. An important component to encouraging curiosity is opening oneself to the creative process through being more curious, judging judgment and being playing with concepts and ideas. Taking a childlike sense of awe and wonder about the world and being more

observant is an avenue to igniting one's curiosity. Another technique for encouraging curiosity is to surprise yourself and others..

Process Plan

Introduction

My overall plan was to conduct a literature review via the internet, at Buffalo State College, E. H. Butler Library and in libraries in New York City. In addition, I wanted to speak with creativity professionals to understand their perspective on the role of curiosity. The MindCamp conference of creativity professionals, in October 2006 in Toronto, Canada, provided an opportunity to discuss curiosity with other industry specialists. In addition, I interviewed several creativity experts over the phone, and the professors at Buffalo State College, Creative Studies Department to ensure a range of input.

The process that I went through to execute this project roughly following the plan outlined in my concept paper (Walsh, 2006, Appendix A). However, due to the breadth and depth of exploration and unforeseen setbacks, the literature review was more time consuming than expected.

The divergent nature of this research led to exploration beyond creativity and business to psychology, learning theory, thinking skills and intelligence.

Timeline

September

- I finalized my concept paper to focus efforts on the literature review rather than on the actual guide development and other activities (Walsh, 2006). This was extremely helpful because it allowed me to concentrate on gathering and analyzing information rather than creating the ultimate product. As it turned out, based on this approach, I expect that the literature

review will be used to develop other outcomes such as a white paper and training seminars.

- The weekend at MindCamp was helpful to engage with other creativity professionals to discuss the importance of curiosity on creativity. Particularly, I spent time with David Horth, senior faculty member of Center for Creative Leadership (CCL). His book, The Leader's Edge (2004) is one of my key sources on the value of curiosity to business.
- I began the literature review by researching general internet approaches (e.g., Google) and by using databases on the E.H. Butler site (e.g., Eric, EBSCO host, JSTOR, etc) on curiosity, exploration, deferring judgment and motivation.
- I interviewed creativity professionals, Olwen Wolfe based in Paris and Hedria Lunken a graduate of ICSC based in Western New York.

October

- In October, Sylvia Gelinas, Janice Francisco and I spent a week at Buffalo State College.
    - During this time, I conducted a more thorough search of the literature, particularly in creativity and leadership books that are difficult to find outside of BCS.
    - I met with each of the professors in the Creative Studies department and discussed curiosity to get their input and perspective on the topic.
    - I developed a rough outline literature review and the Guide.

- I interviewed Maggie Dugan, a creativity professional in Paris about the Creativity European Association (CREA) conference workshop on deferring judgment and the link with curiosity.

- Upon return to New York, I conducted a thorough review of the notes I had taken in Buffalo. I began to organize them and refined the outline. I also visited the local library and conducted further internet research.

November

- In November, I organized, analyzed and structured the findings from the literature and wrote up the results.
- Wrote a presentation of the key findings from the literature review
- Shared the Guide outline with some executives within Synovate and discussed with them the possibility of publishing this research as a white paper on curiosity.

December

- Further refined the literature review. I anticipate this will continue in 2007 as the guide/white paper is further developed.
- Finalized and print write up.

In summary, the project took the following hours to complete:

Month/Activity	Actual Hours
September: Develop concept paper, attend MindCamp, preliminary literature review in NYC, plan trip to Buffalo	64 hours
October: Literature review and interviews in Buffalo, develop outline structure, continue literature review in NYC	73 hours
November: Literature review reading, development of project write up, development and submission of project presentation	57 hours
December: Finalize literature review and project write up, submit electronic versions and CD, bind hard copies	25 hours
TOTAL	**219 hours**

Outcomes

Introduction

The primary component of this project is a literature review on the breath of curiosity and its relationship with creativity. This research lead to an in-depth understanding of the scope of curiosity, its benefits, role in business, barriers, and how to encourage and engage one's own curiosity and that of others.

As a result of this research, I am in the initial stages of developing a Synovate Guide to Living Curiosity. In addition, I am investigating publishing the literature review as a Synovate white paper. Lastly, my intent is to develop a workshop on the importance of curiosity and how to re-ignite the passion of curiosity. My goal is to conduct this workshop throughout Synovate, our clients and at creativity conferences. I have submitted a proposal to present at the upcoming creativity conference in Dublin, Ireland.

Key Learnings

Introduction

In setting out to conduct this project, my learning goals were to in part process and in part content oriented.

My content goals were:

- Deepen my understanding of curiosity as a key creative attitude;
- Establish myself as a leader of creative thinking at Synovate.

My process goals were:

- Use creativity to overcome challenges to developing the Guide;
- Increase personal development through deferring judgment.

Through this project my learning touches on each of these goals, although to differing degrees and with different success. In addition, I deepened my appreciation of the power of curiosity and the creative process.

Content

My key learning from this project is that curiosity is the foundation of all learning and a key component of creativity. Curiosity is an innate human disposition. However, as with other important skills, it takes encouragement to flourish, and without practice the ability atrophies. Children are naturally curious. As children we learn about the world through an intense desire for exploration and sense of curiosity, awe and wonder. Parents and teachers squelch children's curiosity by not taking the time answer their questions and by focusing on learning knowledge rather than the skill of learning. This reminds me of the old adage, "Teach a man to fish, and he will have fish for a lifetime.

Give a man a fish, and he will have a meal." Teachers and parents should have a greater focus on encouraging the learning process rather than the learning outcome.

Curiosity is fundamental to creativity. It is not surprising that a creative person tends to be curious. I contend that curiosity is important in all 4 Ps of creativity – people, press (environment), process and product. The environment for curiosity will support a creative climate in terms of such dimensions as Ekvall's freedom and openness. The creative process is based on asking questions to define the problem (Who? What? Where? When?), generate ideas (What if?, making the strange familiar and the familiar strange) and plan for action (Who? What? When? Where?). I think of creative product to be the outcome of person, press and process. Hence, the more curious approach taken, the more creative outcome will be.

Process

In developing this research approach, I leveraged a fundamental characteristic of creative problem solving -- divergent and convergent thinking. In the beginning of the research, I openly explored a variety of resources looking for connections to curiosity. Once I found the base connections to curiosity, I then deepened my exploration in that direction. What I liked about this method is that now I have confidence that I have gathered a breadth of information about curiosity. In short, my curiosity was aroused which in turn led to more curiosity. By actively deferring judgment and being excited by all connections, the research expanded to areas that I had not anticipated.

My exploration included both literature review and in depth discussions with creativity professions regarding their view of the role of curiosity in creativity. I feel that this led to a richer perspective through the personal stories and interpretations.

During the research process, I experienced the value of deferring judgment. While in Buffalo, I was too sick to cognitively absorb the material. Rather than negatively judging the time, I kept a positive attitude towards the progress I was making. In my discussion with Maggie (personal communication, October 10, 2006), we discussed the value of living in the moment rather than the past or future as a core tactic to deferring judgment. This conversation kept me focused on what I could do in the situation and not worry. I used this time to develop a preliminary structure and explored many sources. It was easy to pick up the seeds I had sown during this time.

Through the process of this research, I ignited my intellectual curiosity about curiosity. As this research engaged my curiosity, I became more curious about curiosity.

The divergent approach that I took in the beginning of the research limited my ability to deeply explore the more far reaching aspects of curiosity. For example, I wanted to further explore the curiosity and openness relationship. In addition, I wish I had more time to for the convergent aspects of structuring, analyzing and organizing my finding.

Conclusion

Introduction

This research demonstrates that curiosity is a fundamental skill and attitude that is driven by a passion for learning and exploration and is a key to creativity, personal satisfaction and interpersonal happiness (Barell, 2002; Csikszentmihalyi, 1999; Kashdan & Fincham, 2002; Langevin, 1970; Nickerson, 1999).

Parents and teachers play a large part in limiting curiosity in children. It is important to take steps to encourage curiosity in children and ourselves (Torrance & Goff, 1990).

The keys to enhanced curiosity can be mapped to 3 of the 4 Ps of creativity:

- Process: are being more curious, judging your judgment, taking a playful approach;
- Press (Environment): being observant, having a sense of awe and wonder;
- People: Surprise yourself and others.

(Nickerson, 1999; Barell, 2002; Ray & Myers, 1989; Shallcross & Sisk, 1892; Gelb, 2004; Hammond, 1998; Marcum, Smith, & Khalsa, 2002; Moser-Wellman, 2002).

Next Steps

Given the nature of this project, the next steps are to develop the Synovate Guide to Living Curiosity. I will develop this review into a Synovate white paper and develop an igniting curiosity workshop. My goal is for this workshop to spark curiosity within Synovate and present at creativity conferences.

I have also considered getting a Ph.D. in psychology studying curiosity.

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Appendix A: Concept Paper

Curious about Curiosity

Name: Sharon Walsh Submitted: October 15, 2006

Project Type: Use a Skill/Talent to Improve the Quality of Life for Others

"Mere curiosity adds wings to every step."
Johann von Goethe

What Is This Project About?

In 2003, the holding company of the company that I work for rebranded the market research companies they owned and called it Synovate. The meaning behind the name is meant to illustrate synergy between the companies/regions/managers within the company and with our clients and innovation that we bring to everything we do. Since beginning my Master's studies, through various training and facilitation initiatives, I have been working towards bringing deliberate creativity thinking skills and practice to the organization.

Recently, Synovate has recently announced 3 I's as three pillars as core of the corporate strategy: Innovation, International and Integration.

The company branding includes "our DNA" which is curiosity. Currently, although the company communicates about curiosity as part of the brand, they do not explain how curiosity is linked to innovation, creative thinking skills or how to increase curiosity.

This project is about demonstrating to Synovate my expertise and interest in creativity, innovation and curiosity. In addition, it is about engaging my personal curiosity through the practice of deferred judgment and overcoming fear.

Rationale for Choice:

I chose this topic since it links to my passion for understanding creative people, with personal (through curiosity development practice) and professional (increasing my visibility within Synovate as an innovation expert) development.

My interest in this topic developed from my CRS 635 philosophy paper (Walsh, 2005). In this paper, I described the importance of and my personal challenge with deferring judgment. In my reading about deferring judgment (Ray & Meyers, 1986), I realized the strong link between enhanced curiosity and the ability to defer judgment. I also believe that curiosity is closely linked with my interest in intrinsic motivation and desire for exploration (Amabile, 1997).

The study of curiosity clearly connects to the Synovate brand DNA, living curiosity. In addition, there is a clear connection between curiosity and the core business of a marketing research company – asking questions.

The development of a guide to curiosity and the ultimate creation of a curiosity training program, will help position me as a leader in creative thinking both within the Synovate organization and in the creativity community.

What Will be the Tangible Product(s) or Outcomes?

This project has both short term and long term components.

My goal is that I will conduct a thorough literature research on this topic and initiate the development of a guide describing the importance of and how to live more curiously. Through this project, I will improve my ability to defer judgment and will provide a source of information for others about how they can enhance their curiosity. In addition, I hope that this creative product will help Synovate to bring the essence of the brand to life.

SHORT TERM

- The primary outcome will be a literature review regarding the role and importance of curiosity as a creative thinking skill and as a core human trait.

- A draft/outline of the guide.

- I will also create a Synovate in: fact survey on creativity and curiosity (Are you curious about curiosity?). Because the schedule of surveys for this year has been developed, I hope to have this survey run in early 2007. The In:fact surveys are administered around the world using our online panel to a random sample of consumers.

LONG TERM

- The long term result will be a guide called “The Guide to Living Curiosity”. My goal is that this product will be used with clients as part of the sales process and internally within Synovate. With clients, I see the guide as a sales tool for engaging clients to better understand the Synovate philosophy. For internal use, I envision the guide to incorporated into new hire orientation.

- A further long term goal will be the development a training seminar that will teach people the importance of and tools to become more curious.

What Criteria Will You Use To Measure The Effectiveness Of Your Achievement?

Given the multiple levels at which this project will be conducted, there needs to be a variety of different criteria.

- From a personal growth perspective, the most important criterion is that my personal creativity and curiosity grow through the practice of deferring judgment.

- From a creativity professional perspective, I will have developed a body of knowledge about the link between curiosity and personal creativity.

- From a Synovate professional growth perspective, the key criteria will be that I increase my visibility within the organization as a creativity expert. This would include positive feedback from senior executives regarding the content and the usefulness of the material. I would

also judge this by being asked to discuss creativity and innovation and participate in Synovate programs (as opposed to my reaching out to people).

- From a Synovate perspective, I would consider the project a success if the guide is published and used as I have described. A further measure would be if it is used in ways that I have not anticipated. Other measures will include, having the In:fact survey conducted.

Who Will Be Involved or Influenced; What Will Your Role Be?

Sharon Walsh. I will research and develop the creative products for this project. I will also be working internally with Synovate executives to get further buy-in and commitment to the project future use of the finalized Guide.

Peter Walsh: My husband. Peter will be a key support, providing advice, perspective and love.

Sylvie Gelinas: My Sounding Board Partner. Sylvie will be my support and coach to help me meet my personal and the project goals.

Janice Francisco: Janice, Sylvie and I will spend a week in Buffalo conducting research for our projects and supporting each others thinking and learning

Dr. Mary Murdock: My academic advisor for the project. Dr. Murdock will provide guidance and advice.

Russ Schoen: My friend and creativity consultant. Russ will provide additional support and guidance.

Other classmates and creativity professional: Advice and input as needed.

Others within Synovate as appropriate, such as:

- Supporters:
  - Claire Braverman: Senior VP, Synovate Americas, Financial Services Group. Claire is my boss. She has always supported my interest in pursuing creativity within Synovate.
  - Gavin Pommernelle, Global HR Director;
  - Alicia Kan, Global PR Director;
  - Jennifer Chhatlani, VP PR

When Will This Project Take Place?

The scope of the project described will primarily take place within the semester. The majority of my time will be spent researching the literature regarding curiosity and the link to deferring judgment and creativity.

Phase 1 (during semester):

- Conduct literature review on curiosity, deferring judgment and related topics (TBD)
- Outline structure and key messages to be included in the Guide
- Begin conversations with Synovate senior executives to get further buy in to the product
- Submit approximately 5 questions on Living Curiosity to be included in Synovate In:fact research for 2007 consideration

Phase 2 (early 2007):

- Further refine Guide to Living Curiosity and share outline and concept with executives to garner input in order to best meet Synovate needs.
- Work with Synovate branding and graphics standards to finalize look and feel
- Finalize and publish Guide

Phase 3 (ongoing):
- Have Guide approved for Synovate publication
- Analyze In: fact survey results
- Develop and conduct client and internal training sessions on increasing curiosity in business

Where Will This Project Occur?

The project will take place at my home and office in New York City and at the Buffalo State College International Center for Studies in Creativity and the Creative Studies Library.

Why Is It Important to Do This?

This project is important to me as a source of personal and professional growth. I want to create a solid foundation for my future as a professional in the field of creativity. The guide will provide practical tools to enhance creativity by tapping into curiosity through conscious deferring of judgment and other methods.

Through my discussions and review of the guide, the project will be instrumental in expanding the understanding of creativity principles, attitudes and behaviors among Synovate executives with whom I will be working as well as positioning me as a creative change leader. In addition, once the guide is completed, it will also be used by Synovate as a tool for clients and employees.

Personal Learning Goals:

1. *Deepen my understanding of curiosity as a key creative attitude;*

2. *Establish myself as a leader of creative thinking at Synovate;*

3. *Use creativity to overcome challenges to publishing the Guide; and*

4. *Increase personal development through deferring judgment.*

How Do You Plan to Achieve Your Goals and Outcomes?

For further detail regarding my process plan, see Project Timeline below.

1. *Deepen my understanding of curiosity as a key creative attitude*

    - I will be speaking with creativity professionals and classmates at MindCamp and through other contacts that I have in the industry.
    - I will also take a week of vacation to conduct a thorough literature review at Buffalo State College in the International Center for Creative Studies and at the E.H. Butler Creative Studies Library.

2. *Establish myself as a leader of creative thinking at Synovate*

    - I will continue to share my concept presentation to executives within the company and engage in further discussions about how creative thinking skills can be expanded within the organization.
    - I will review the draft Guide to Living Curiosity with key executives.
    - I will submit the In: fact survey questions for consideration in the 2007 schedule.

3. *Use creativity to overcome challenges to publishing the Guide*

    - I will use the principles of CPS (specifically deliberate divergent thinking, specifically deferring judgment).

4. *Increase personal development through deferring judgment*

    - I will be more conscious of my thoughts and habits.
    - I will develop and do the exercises that I consider including in the Guide.
    - I will do things that I had previously judged or feared prior to experiencing.
    - I will continue doing Morning Pages as a morning meditation.

Evaluation:

The majority of the evaluation will be based on my personal perceptions of the experience. As part of my ongoing learning journal, I will conduct a PPCO on a bi-weekly basis regarding my progress in completing the project. I will use the outcome of these PPCOs to strengthen my use of CPS in the process of completing the project.

I will also be receiving informal feedback from Synovate executives regarding the concept and development of the Living Curiosity Guide.

As always, I expect my husband and Sounding Board Partner to be important in my feedback regarding my personal development of using CPS skills.

Prepare Project Timeline:

Overview

Activity	September	October	November	December
Finalize concept paper				
Attend MindCamp				
Literature review				
Develop in:fact survey				
Guide development				
Project write up and presentation				

Detail

Month/Activity	Estimated Hours
September	**53 hours**
• September 6th: Draft concept paper	6 hours
• September 12th: Finalize concept paper	1 hour
• September 14-17th: Attend MindCamp and discuss project with participants	30 hours
• Preliminary literature review	10 hours
• Diverge list of in:fact survey questions	3 hours

• Plan trip to Buffalo for October	3 hours
October	**55 hours**
• October 8-14th: Literature review at the Buffalo State College International Center for Studies in Creativity and E. H. Butler Creative Studies Library	40 hours
• Develop rough outline/structure of Living Curiosity Guide	3 hours
• Literature review in New York City	10 hours
• Converge on in:fact survey questions and present to Synovate	2 hours
November	**42 hours**
• Finalize literature review	5 hours
• Begin development of Guide	10 hours
• Write draft project write up	20 hours
• November 13th: Submit draft project write up to Dr. M	1 hour
• Develop project presentation	5 hours
• November 29th: Post project presentation	1 hour
December	**12 hours**
• Finalize project write up	10 hours
• December 6th: Submit electronic revisions of final write up to Dr. M and classmates	1 hour
• December 12th: Final Project write up, Concept Paper and Presentation CD in Buffalo	1 hour
January	
• January 3rd: Signed bound copy of write up in Buffalo	
TOTAL	**162**

Identify Pertinent Literature or Resources:

The first phase of this project is to identify pertinent literature and resources. I will conduct this search through speaking with my classmates, other creativity professionals (Russ Schoen, Maggie Dugan, Olwen Wolfe, Tim Hurson, David Horth, etc.), online searching in website and databases (such as ERIC), and visiting the Buffalo State E. H. Butler Creative Studies Library. Given the focus on creative person, the review will include an in-depth study of the psychological literature as well as creativity oriented sources.

While I intend to diverge on the breadth of aspects related to curiosity, my current feeling is that I will be focusing on curiosity as a dimension of the creative person (from a psychological orientation) and how to engage one's curiosity to become more creative.

I will look for both seminal and germinal works that relate curiosity as a key personality characteristic for creativity.

Key words that I will investigate are: "curiosity, encouraging curiosity, creative thinking."

Below are some resources that look promising.

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"Curiosity is about the fundamentalness of being human."
Mary Murdock

Appendix B: Curious about curiosity presentation

Curious about curiosity?

Sharon Walsh
CRS 690
November 2006

Did curiosity kill the cat?

- I think not.
- Read on and find out why…

2

Agenda

- Background & Motivation
- What is curiosity?
- Why is curiosity important?
- Why is curiosity important in business?
- Who is curious?
- How is curiosity lost?
- How can I become more curious?

Background

- Personal
  - Engaged in creativity for over 8 years
  - Undergraduate degree in psychology with a focus on child development and an interest in social psychology
- Synovate
  - Corporate strategy: Innovation, international, integration
  - Corporate DNA: Curiosity

Motivation

- Personal development
  - To connect my interest in psychology
  - To develop my own curiosity

- Professional development
  - To engage my intellectual curiosity
  - To delve into the creativity literature
- Synovate
  - To increase my visibility as a creativity professional

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What is curiosity?

- Definition of curiosity
  - Dictionary: The desire to know or learn which leads to inquiry
  - Psychology: The desire to know, see or experience that which is motivated by novel, complex, or ambiguous situations/information leading to new information

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What is curiosity?

- Historical perspective
  - Plato: New experiences to gain knowledge are intrinsically satisfying
  - Aristotle: Desire for knowledge & curiosity is universal
  - William James (1890): 2 types
    - Excitement/anxiety from exploration
    - Scientific curiosity from knowledge gap
  - John Dewey (1910): physical, social and intellectual curiosity

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What is curiosity?

- Berlyne (1950, 1954, 1960)
  - Curiosity
    - Epistemic: driven by conceptual conflict (confusion, lack of/gaps in information) motivating exploration and desire for information
    - Perceptual: aroused by 'collative stimuli' and reduced by exposure
  - Exploratory behavior
    - Diversive: Novelty seeking -- Courage, sociability, not boredom
    - Specific: Increasing knowledge -- Openness to ideas, future orientation, problem solving

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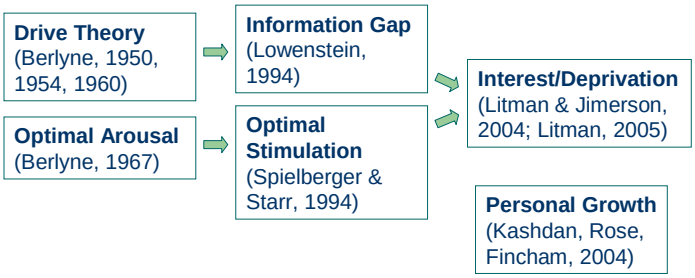
What is curiosity?

- Theoretical constructs of creativity



What is curiosity?

- Early theories
  - Drive theory
    - Curiosity rewarding reduction of uncertainty. Assumes motivation to return to prior state of comfort
  - Optimal arousal theory
    - Exploratory behavior to reach optimal arousal
  - State (curiosity in a particular situation) vs. trait (general propensity)

What is curiosity?

- Current Theories
  - Optimal stimulation model (Speilberger & Starr)
    - Based on pleasant state of curiosity balanced with aversive state of anxiety
  - Information gap theory (Loewenstein)
    - Gap between knowledge and desired knowledge
  - Interest/deprivation theory (Litman & Jimerson)
    - Information seeking & problem solving due to deprivation and uncertainty
  - Personal growth model (Kasdan, Rose, Fincham)
    - Exploration seeking new information/experiences
    - Absorption and being fully engaged

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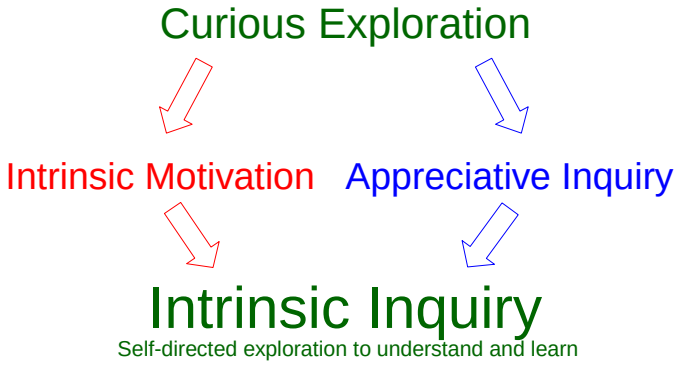
What is curiosity?

- My definition:



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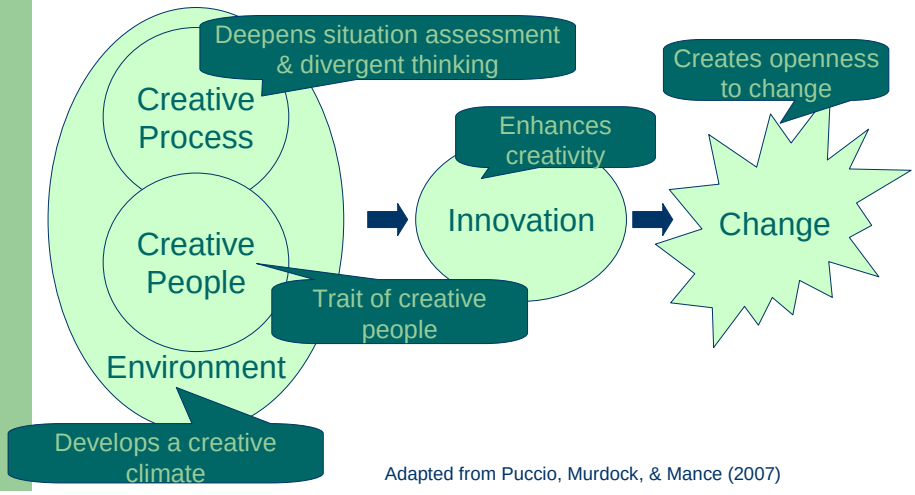
Why is curiosity important?

- Sustains life long learning
  - Key to learning:
    - TIM, Teaching strategies for thinking & feeling
  - Enhances intellectual development:
    - Overlapping definitions
    - Physiological benefits

Why is curiosity important?

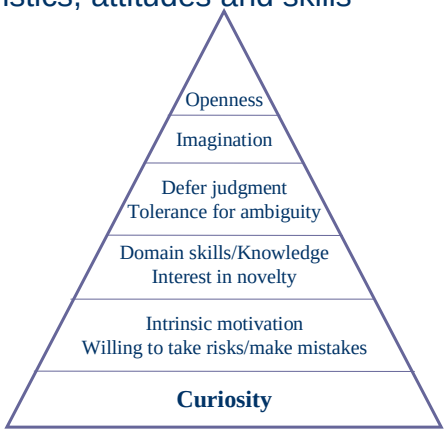
Curiosity is at the heart of creativity



Adapted from Puccio, Murdock, & Mance (2007)

Why is curiosity important?

- Curiosity is at the foundation of creativity characteristics, attitudes and skills



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Why is curiosity important?

- Cultivates personal satisfaction and empathy
  - Increases life satisfaction, personal achievement and well being
    - Influences future accomplishments
    - Increases learning, reduces defensiveness
    - Identify meaningful activities
  - Eliminates boredom/engages flow
    - Path of balance between when anxiety of challenge is greater than skill with boredom of skill greater than challenge
  - Improves relationships and enhances empathy
    - Facilitates interest in others
    - Creates community of learning
    - Encourages alternate perspectives and views and provides avenue for empathy creation

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Why is curiosity important in business?

- Root of many business successes
  - IDEO is based on engaging curiosity
  - Successful businesses driven by curiosity - Disney and Starbucks
- Business requires creativity, creativity requires curiosity
- Critical to change management (Fullan)
  - Knowledge building is facilitated
- Supports organizational learning (Senge)
  - Personal mastery and sharing of mental models requires curiosity
- Creative leadership (Palus & Horth)
  - Supports creative leadership skills serious play, collaborative inquiry, paying attention, personalizing
- Key to leadership (Mumford)
  - Enhances key skills creative problem solving, social judgment and knowledge
- Improves new product adverting

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Who is curious?

- Everyone is innately curious
  - We are born curious. That's how we learn about the world
- Creative people keep their curiosity alive
  - There is a strong link between creative people and curiosity.
- We are all curious
  - But in many it is dormant.

"Some people find their curiosity shutting down as they age, losing their taste for the new… But there's nothing necessary or inevitable about it. We can fight the lockdown of our curiosity." (Tharp, 2003)

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What are the barriers to curiosity?

- Judgment
  - *"The less judgment, the more curiosity, and the more curiosity, the more creativity."* (Ray & Myers, 1986. p. 40)
- Parents and teachers
  - Parents limit children's questions due to fatigue, not knowing the answer by scolding and ignoring
  - Teachers limit questioning to complete curriculum and they are not curious themselves
- Other barriers
  - Personal confidence or arrogance
  - Fear of the unknown leads to caution
  - Apathy and lack of interest

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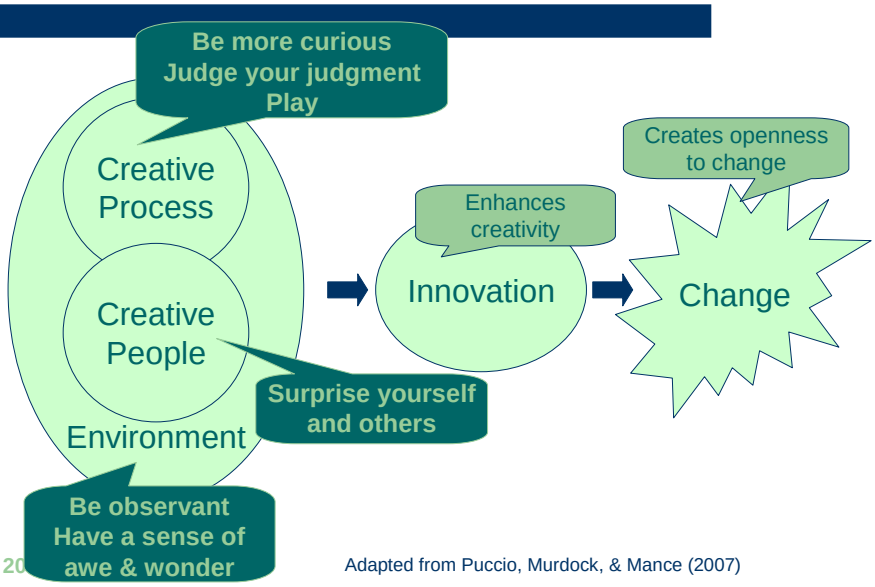
How can I become more curious?



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Adapted from Puccio, Murdock, & Mance (2007)

So, why didn't curiosity kill the cat?

Curiosity taught the cat that by taking risks and making mistakes he/she could be more creative and live happily ever after…

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A curious fact…

Although the wild types of most domestic species are extinct, the wild cat to thrives…

(Budiansky, 2002)

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What is “curiosity killed the cat” all about?

- It is not clear the first use of this American proverb.
  - Widely attributed to Eugene O’Neill in his 1920 play *Diff'rent*:

    BENNY: (with a wink) Curiosity killed a cat! Ask me no questions and I'll tell you no lies.

  - Grandpa Munster (Al Lewis) used this expression in an episode of the TV Series "The Munsters"

  - The earliest printed reference is from a horoscope printed in *The Lima News* (Lima, Ohio) from September 14, 1966 (p. 37): *YOUR BIRTHDAY by STELLA*

    LEO (July 24 - Aug. 23) — "Curiosity" Killed the cat — but Satisfaction brought it back. Let your curiosity get the best of you, find out what you want to know.

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Source: www.wikipedia.com

More about curiosity killed the cat…

- Their debut album *Keep Your Distance* entered the UK album charts at #1 in May 1987, and stayed in the top 10 for 13 weeks

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Source: www.wikipedia.com

Appendix C: Curiosity and Exploration Inventory (Kashdan, Rose & Roberts, 2004)

Using the scale below, please respond to each statement according to how you would normally describe yourself. Responses are based on a 7-point Likert scale with three descriptors: 1=strongly disagree, 4 =neither agree nor disagree, 7=strongly agree.

1. I would describe myself as someone who actively seeks as much information and I can in a new situation.

2. When I am participating in an activity, I tend to get so involved that I lose track of time.

3. I frequently find myself looking for new opportunities to grow as a person (e.g., information, people, resources).

4. I am *not* the type of person who probes deeply into new situations or things

5. When I am actively interesting in something, it takes a great deal to interrupt me

6. My friends would describe me as someone who is "extremely intense" when in the middle of doing something

7. Everywhere I go, I am out looking for new things or experiences.