

CREATIVITY
by Mihaly Csikszentmihalyi
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- It is easier to enhance creativity by changing conditions in the environment than by trying to make people think more creatively.
- A genuinely creative accomplishment is almost never the result of a sudden insight, but comes after years of hard work.
- The analogy to genes in the evolution of culture is memes, or units of information that we must learn if culture is to continue. Languages, numbers, theories, songs, recipes, laws, and values are all memes that we pass on to our children so that they will be remembered. It is these memes that a creative person changes, and if enough of the right people see the change as an improvement, it will become part of the culture.
- Memes must be learned before they can be changed.
- Creativity is a process by which a symbolic domain in the culture is changed.
- As cultures evolve, it becomes increasingly difficult to master more than one domain of knowledge.
- Brilliant people are interesting and stimulating
- Personally creative people experience the world in novel and original ways. Their perceptions are fresh, judgments are insightful, and they may make important discoveries that only they know about.
- Creative people change our culture in some important respect.
- Talent differs from creativity in that it focuses on an innate ability to do something very well.
- The majority of creative people achieved creative results without any exceptional talent being evident.
- Creativity occurs when a person, using the symbols of a given domain has a new idea or sees a new pattern, and when this novelty is selected by the appropriate field for inclusion into the relevant domain.
- Creativity is any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one.
- A creative person is someone whose thoughts or actions change a domain, or establish a new domain.
- Today, many American corporations spend a great deal of money and time trying to increase the originality of their employees, hoping thereby to get a competitive edge in the marketplace. But such programs make no difference unless management also learns to recognize the valuable ideas among the many novel ones, and then finds ways of implementing them.
- Because we are used to thinking that creativity begins and ends with the person, it is easy to miss the fact that the greatest spur to it may come from changes outside the individual.
- Creativity must be seen not as something happening within a person but in the relationships within a system.
- The existence of domains is perhaps the best evidence of human creativity.
- For most people, domains are primarily ways to make a living. But then there are individuals - and the creative ones are usually in this group - who choose certain domains because of a powerful calling to do so. For them the match is so perfect that acting within the rules of the domain is rewarding in itself; they would keep doing what they do even if they were not paid for it, just for the sake of doing the activity.

- Motivation for creativity includes to bring order to experience, to make something that will endure after one's death, to do something that allows humankind to go beyond its present powers.
- In order to survive, cultures must eliminate most of the new ideas their members produce. Cultures are conservative, and for good reason. No culture could assimilate all the novelty people produce without dissolving into chaos.
- Interest and access to a domain early in life gives an advantage to creative people.
- Characteristics of creative individuals:
 1. Creative individuals have a great deal of physical energy, but they are also often quiet and at rest.
 2. Creative individuals tend to be smart, yet also naïve at the same time. It might be difficult to do creative work with an IQ lower than 120, but beyond 120 an increment in IQ does not necessarily imply higher creativity.
 3. Creative people are playful and disciplined, responsible and irresponsible.
 4. Creative individuals alternate between imagination and fantasy and a rooted sense of reality. Normal people are rarely original, but they are sometimes bizarre. Creative people, it seems, are original without being bizarre.
 5. Creative people seem to harbor opposite tendencies on the continuum between extroversion and introversion.
 6. Creative individuals are remarkably humble and proud at the same time.
 7. Creative individuals escape rigid gender role stereotyping. Creative girls are more dominant and tough than other girls, and creative boys are more sensitive and less aggressive than their male peers.
 8. Creative people are thought to be rebellious and independent, yet, it is impossible to be creative without having first internalized a domain of culture.
 9. Most creative persons are very passionate about their work, yet they can be extremely objective about it as well.
 10. The openness and sensitivity of creative individuals often exposes them to suffering and pain yet also a great deal of enjoyment.
- People who bring about an acceptable novelty in a domain seem able to use well two opposite ways of thinking: the convergent and the divergent.
- Divergent thinking leads to no agreed upon solution. It involves fluency, or the ability to generate a great quantity of ideas; flexibility, or the ability to switch from one perspective to another; and originality in picking unusual associations of ideas. Divergent thinking is not much use without the ability to tell a good idea from a bad one, and this selectivity involves convergent thinking.
- Only those teens who can tolerate being alone are able to master the symbolic content of a domain. Yet, the importance of seeing people, hearing people, exchanging ideas, and getting to know another person's work and mind are stressed by creative individuals.
- Creative Process:
 1. Preparation: Becoming immersed, in a set of problematic issues that are interesting and arouse curiosity.
 2. Incubation: ideas churn around below the threshold of consciousness
 3. Insight
 4. Evaluation
 5. Elaboration
- Without a burning curiosity, a lively interest, we are unlikely to persevere long enough to make a significant new contribution. This kind of interest is rarely only intellectual in nature. It is usually

rooted in deep feelings, in memorable experiences that need some sort of resolution – a resolution that can be achieved only by a new artistic expression or a new way of understanding.

- It could be argued that the breakaway from classical literary, musical and artistic styles that is so characteristic of the 20th century was an indirect reaction to the disillusion people felt at the inability of Western civilization to avoid the bloodshed of WWI. It is no coincidence that Einstein's theory of relativity, Freud's theory of the unconscious, Eliot's free form poetry, Stravinsky's twelve-tone music, Martha Graham's abstract choreography, Picasso's deformed figure, James Joyce's stream of consciousness prose were all created - and were accepted by the public – in the same period in which empires collapsed and belief systems reject old certainties.
- Some activities such as art, music, and sports are usually autotelic: There is no reason for doing them except to feel the experience they provide. Most things in life are exotelic: We do them not because we enjoy them but in order to get at some later goal. In many ways, the secret to a happy life is to learn to get flow from as many of the things we have to do as possible. If work and family life become autotelic, then there is nothing wasted in life and everything we do is worth doing for its own sake.
- Schools generally fail to teach how exciting, how mesmerizingly beautiful science or mathematics can be; they teach the routine of literature or history rather than the adventure.
- It is impossible to tell whether a child will be creative or not by basing one's judgment on his or her early talents. Some children do show signs of extraordinary precocity in a domain, but this does not always translate into creative contributions to a domain.
- Children can show tremendous talent, but they cannot be creative because creativity involves changing a way of doing things, or a way of thinking, and that in turn requires having mastered the old ways of doing or thinking.
- When we look at what is known about the childhoods of eminent creative persons, it is difficult to find any consistent pattern.
- If being a prodigy is not a requirement of later creativity, a more than usually keen curiosity about one's surroundings appears to be. Practically every individual who has made a novel contribution to a domain remembers feeling awe about the mysteries of life and has rich anecdotes to tell about efforts to solve them.
- Each child becomes interested in pursuing whatever activity gives him or her an edge in the competition for resources – the attention and admiration of significant adults being the most important resource involved. Whereas later in life creative individuals learn to love what they do for its own sake, at first this interest is often motivated by competitive advantage.
- Creative individuals seem to have had either exceptionally supportive childhoods or very deprived and challenging ones. What appears to be missing is the vast middle ground.
- It is quite strange how little effect school – even high school – seems to have had on the lives of creative people. Often one senses that, if anything, school threatened to extinguish the interest and curiosity that the child had discovered outside its walls. But if the school itself rarely gets mentioned as a source of inspiration, individual teachers often awaken, sustain or direct a child's interest.
- Two factors make teachers influential. First, the teachers noticed the student, believed in his or her abilities, and cared. Second, the teacher showed care by giving the child extra work and greater challenges than the rest of the class received.
- Talented teenagers not only are not immune but have some special obstacles to surmount. For instance, they must devote time to the development of their interests and talents, which usually means that they are alone more often than other teens – practicing their music, writing their essays, or solving their math problems. They are on the whole less happy and cheerful as a result (though

when alone they are significantly less miserable than their peers.) Loneliness, however painful, helps protect the interest of the adolescent from being diluted by the typical concerns of that stage of life.

- Performance in school matters more in some domains than in others. In mathematics and the sciences, the exposure one gets in high school is necessary for further advancement. Doing well in advanced courses is not sufficient, but it is a necessary condition for being accepted to a good college and then to a good graduate department, which in turn is a necessary step to a later career. But, performance in high school is a poor indicator of future creativity in the arts and the humanities.