Of all human activities, creativity comes closest to providing the fulfillment we all hope to get in our lives. Call it full-blast living.

By Mihaly Csikszentmihalyi

Creativity is a central source of meaning in our lives. Most of the things that are interesting, important, and human are the results of creativity. What makes us different from apes—our language, values, artistic expression, scientific understanding, and technology—is the result of individual ingenuity that was recognized, rewarded, and transmitted through learning.

When we’re creative, we feel we are living more fully than during the rest of life. The excitement of the artist at the easel or the scientist in the lab comes close to the ideal fulfillment we all hope to get from life, and so rarely do. Perhaps only sex, sports, music, and religious ecstasy—even when these experiences remain fleeting and leave no trace—provide a profound sense of being part of an entity greater than ourselves. But creativity also leaves an outcome that adds to the richness and complexity of the future.

I have devoted 30 years of research to how creative people live and work, to make more understandable the mysterious process by which they come up with new ideas and new things. Creative individuals are remarkable for their ability to adapt to almost any situation and to make do with whatever is at hand to reach their goals. If I had to express in one word what makes their personalities different from others, it’s complexity. They show tendencies of thought and action that in most people are segregated. They contain contradictory extremes; instead of being an “individual,” each of them is a “multitude.”

Here are the 10 antithetical traits often present in creative people that are integrated with each other in a dialectical tension.
Painter or prankster: Salvador Dali has been labeled both. Still, his surrealist paintings are part of the permanent collections of both the Museum of Modern Art and the Metropolitan Museum of Art.
1. Creative people have a great deal of physical energy, but they’re also often quiet and at rest. They work long hours, with great concentration, while projecting an aura of freshness and enthusiasm. This suggests a superior physical endowment, a genetic advantage. Yet it is surprising how often individuals who in their seventies and eighties exude energy and health remember childhoods plagued by illness. It seems that their energy is internally generated, due more to their focused minds than to the superiority of their genes.

This does not mean that creative people are hyperactive, always “on.” In fact, they rest often and sleep a lot. The important thing is that they control their energy; it’s not ruled by the calendar, the clock, an external schedule. When necessary, they can focus it like a laser beam; when not, creative types immediately recharge their batteries. They consider the rhythm of activity followed by idleness or reflection very important for the success of their work. This is not a biorhythm inherited with their genes; it was learned by trial and error as a strategy for achieving their goals.

One manifestation of energy is sexuality. Creative people are paradoxical in this respect also. They seem to have quite a strong dose of eros, or generalized libidinal energy, which some express directly into sexuality. At the same time, a certain spartan celibacy is also a part of their makeup; continence tends to accompany superior achievement. Without eros, it would be difficult to take life on with vigor; without restraint, the energy could easily dissipate.

2. Creative people tend to be smart yet naïve at the same time. How smart they actually are is open to question. It is probably true that what psychologists call the “g factor,” meaning a core of general intelligence, is high among people who make important creative contributions.

The earliest longitudinal study of superior mental abilities, initiated at Stanford University by the psychologist Lewis Terman in 1921, shows rather conclusively that children with very high IQs do well in life, but after a certain point IQ does not seem to be correlated any longer with superior performance in real life. Later studies suggest that the cutoff point is around 120; it might be difficult to do creative work with a lower IQ, but an IQ beyond 120 does not necessarily imply higher creativity.

Another way of expressing this dialectic is the contrasting poles of wisdom and childishness. As Howard Gardner remarked in his study of the major creative geniuses of this century, a certain immaturity, both emotional and mental, can go hand in hand with deepest insights. Mozart comes immediately to mind.

Furthermore, 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. Convergent thinking is measured by IQ tests, and it involves solving well-defined, rational problems that have one correct answer. 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. These are the dimensions of thinking that most creativity tests measure and that most workshops try to enhance.

Yet there remains the nagging suspicion that at the highest levels of creative achievement the generation of novelty is not the main issue. People often claimed to have had only two or three good ideas in their entire career, but each one was so generative that it kept them busy for a lifetime of testing, filling out, elaborating, and applying.

Divergent thinking is not much use without the ability to tell a good idea from a bad one, and this selectivity involves convergent thinking.

3. Creative people combine playfulness and discipline, or responsibility and irresponsibility. There is no question that a playfully light attitude is typical of creative individuals. But this playfulness doesn’t go very far without its antithesis, a quality of doggedness, endurance, perseverance.

Nina Holton, whose playfully wild germs of ideas are the genesis of her sculpture, is very firm about the importance of hard work: “Tell anybody you’re a sculptor and they’ll say ‘Oh, how exciting, how wonderful.’ And I
tend to say, "What's so wonderful? It's like being a mason, or a carpenter, half the time. But they don't wish to hear that because they really only imagine the first part, the exciting part. But, as Khrushchev once said, that doesn't fry pancakes, you see. That germ of an idea does not make a sculpture which stands up. It just sits there. So the next stage is the hard work. Can you really translate it into a piece of sculpture?"

Jacob Rabinow, an electrical engineer, uses an interesting mental technique to slow himself down when work on an invention requires more endurance than intuition. "When I have a job that takes a lot of effort, slowly, I pretend I'm in jail. If I'm in jail, time is of no consequence. In other words, if it takes a week to cut this, it'll take a week. What else have I got to do? I'm going to be here for twenty years. See? This is a kind of mental trick. Otherwise you say, 'My God, it's not working,' and then you make mistakes. My way, you say time is of absolutely no consequence."

Despite the carefree air that many creative people affect, most of them work late into the night and persist when less driven individuals would not. Vasari wrote in 1550 that when Renaissance painter Paolo Uccello was working out the laws of visual perspective, he would walk back and forth all night, muttering to himself. "What a beautiful thing is this perspective!" while his wife called him back to bed with no success.

4. Creative people alternate between imagination and fantasy, and a rooted sense of reality. Great art and great science involve a leap of imagination into a world that is different from the present. The rest of society often views these new ideas as fantasies without relevance to current reality. And they are right. But the whole point of art and science is to go beyond what we now consider real and create a new reality. At the same time, this "escape" is not into a never-never land. What makes a novel idea creative is that once we see it, sooner or later we recognize that, strange as it is, it is true.

Most of us assume that artists—musicians, writers, poets, painters—are strong on the fantasy side, whereas scientists, politicians, and businessmen are realists. This may be true in terms of day-to-day routine activities. But when a person begins to work creatively, all bets are off.

5. Creative people tend to be both extroverted and introverted. We're usually one or the other, either preferring to be in the thick of crowds or sitting on the sidelines and observing the passing show. In fact, in current psychological research, extroversion and introversion are considered the most stable personality traits that differentiate people from each other and that can be reliably measured. Creative individuals, on the other hand, seem to exhibit both traits simultaneously.

6. Creative people are humble and proud at the same time. It is remarkable to meet a famous person who you expect to be arrogant or supercilious, only to encounter self-deprecation and shyness instead. Yet there are good reasons why this should be so. These individuals are well aware that they stand, in Newton's words, "on the shoulders of giants." Their respect for the area in which they work makes them aware of the long line of previous contributions to it, putting their own in perspective. They're also aware of the role that luck played in their own achievements. And they're usually so focused on future projects and current challenges that past accomplishments, no matter how outstanding, are no longer very interesting to them. At the same time, they know that in comparison with others, they have accomplished a great deal. And this knowledge provides a sense of security, even pride.

7. Creative people, to an extent, escape rigid gender role stereotyping. When tests of masculinity/femininity are given to young people, over and over one finds that creative and talented girls are more dominant and tough than other girls, and creative boys are more sensitive and less aggressive than their male peers.

This tendency toward androgyny is sometimes understood in purely sexual terms, and therefore it gets confused with homosexuality. But psychological androgyny is a much wider concept referring to a person's ability to be

Without Albert Einstein's (top) theory of relativity, we might not have reached the atomic age so quickly. In 1921, Einstein was awarded the Nobel Prize. The get-rich-quick schemes Ralph Cradens continually dreamed up never failed to anger his wife, Alice. But that's how Jackie Gleason and Audrey Meadows (middle) helped make The Honeymooners a classic. Lucille Ball's (bottom) sheer inventiveness is the reason why I Love Lucy is continually rerun on television.
at the same time aggressive and nurturant, sensitive and rigid, dominant and submissive, regardless of gender. A psychologically androgynous person in effect doubles his or her repertoire of responses. Creative individuals are more likely to have not only the strengths of their own gender but those of the other one, too.

8. Creative people are both rebellious and conservative. It is impossible to be creative without having first internalized an area of culture. So it’s difficult to see how a person can be creative without being both traditional and conservative and at the same time rebellious and iconoclastic. Being only traditional leaves an area unchallenged; constantly taking chances without regard to what has been valued in the past rarely leads to novelty that is accepted as an improvement. The artist Eva Zeisel, who says that the folk tradition in which she works is “her home,” nevertheless produces ceramics that were recognized by the Museum of Modern Art as masterpieces of contemporary design. This is what she says about innovation for its own sake:

“This idea to create something is not my aim. To be different is a negative motive, and no creative thought or created thing grows out of a negative impulse. A negative impulse is always frustrating. And to be different means ‘not like this’ and ‘not like that.’ And the ‘not like’—that’s why postmodernism, with the prefix of ‘post,’ couldn’t work. No negative impulse can work, can produce any happy creation. Only a positive one.”

But the willingness to take risks, to break with the safety of tradition, is also necessary. The economist George Stigler is very emphatic in this regard: “I’d say one of the most common failures of able people is a lack of nerve. They’ll play safe games. In innovation, you have to play a less safe game, if it’s going to be interesting. It’s not predictable that it’ll go well.”

9. Most creative people are very passionate about their work, yet they can be extremely objective about it as well. Without the passion, we soon lose interest in a difficult task. Yet without being objective about it, our work is not very good and lacks credibility. Here is how the historian Natalie Davis puts it:

“I think it is very impor-