



SchwartzReport

Consciousness, creativity, innovation, and survival

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The Schwartzreport tracks emerging trends that will affect the world, particularly the United States. For EXPLORE it focuses on matters of health in the broadest sense of that term, including medical issues, changes in the biosphere, technology, and policy considerations, all of which will shape our culture and our lives.

They come in the night, or unexpectedly in a walk across the park, with friends playing games or in the quiet of meditation. Such are the provenances of creative breakthroughs that have changed the course of human history; the intuitive insights of a single man or woman that leads to major social change. Nikola Tesla's invention of the electric motor, at the end of the 19th century, came in a vision as he walked across a city park in New York.¹ Mozart, Brahms, Beethoven, and Copeland had music come to them in an instant.² Einstein "saw" Relativity as he idled away time in a canoe after an illness. He later wrote: "I believe in intuition and inspiration. . . . Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution. It is, strictly speaking, a real factor in scientific research."³

Creativity is an individual event, but it only becomes meaningful with social acceptance, and society and our survival as a species faced with climate change will be determined by our creative solutions to problems so well-known their recitation has become cliché. Therefore, our proficiency in understanding the creative process and our success in nurturing its dynamic in our culture will also determine how we as a species navigate the cataclysmic change that is coming. One does not need to be sophisticated in historical analysis to recognize the impact a single creative individual can have in a society supportive of breakthroughs, and how harmful suppression of creative initiative because of religious or political doctrine can be on a culture, both the individuals and the commonweal.

These are issues which should be in the forefront of our awareness as we seek to push forward the frontiers of science and medical research. How great can the contribution of a single individual be? Consider this example from an earlier time, an example sufficiently removed in time for an objective analysis of its impact to be definable.

The German chemist and Nobel Laureate Paul Ehrlich is the example I have picked. This single man and the teams he led were responsible for a long list of pharmaceuticals, including the first synthesis of a quinine substitute, a cure for sleeping sickness, and the most effective pre-antibiotic cure for syphilis.⁴

Although he died in 1917, so great was the creative momentum produced by Ehrlich that, as historian Henry Hobhouse notes, "In

explosives, fertilizers, pharmaceuticals and synthetic substitutes of all kinds the German chemical industry was able to survive defeat in World War I, poor government and inflations in the 1920s, even the slump (*depression*), largely because of the technological lead derived from Ehrlich and the teams guided by his creativity."⁵

Today information is available at a rate unimaginable 20 years ago. Within another 20 years it may be possible to buy everything about a culture that can be reduced to digital data, for instance, its literature, history, social outcome statistics, and arts. All manner of technological developments that will help us to better understand or control our physical reality. But information and the power to manipulate it are not creativity, although this difference is often confused, yet easy to discern in the effects mis- and dis-information have had on American culture in 2021.

As technology increases the role of creativity will become more, not less, important. We must still confront that part of the problem-solving task which the machines cannot yet emulate, the ineffable part – creativity. But what can we say about creativity beyond the fact that it occurs? One useful perspective is to consider what people who have had creative breakthroughs acknowledged by both their peers and history to be significant say happened to them. Such a survey reveals that major creative figures describe a link between creativity and what has traditionally been known as intuition, an altered state of consciousness that today would be called nonlocal awareness. The study of nonlocal consciousness and understanding the informational interactions that result in creative insights leading to innovation, I suggest, have a particular relevance to a world facing massive alterations in its climate and ecosystems. I do not think it is an exaggeration to say it is a matter of survival.

Although the critical triumvirate of consciousness, creativity, and innovation is described over and over again in different terms, what all agree to, whether the experience is seen as merely psychophysical or genuinely nonlocal, is that those who have had the experience report a sense of unity, a sense of connection that bestows a sense of insight, the Ahha Moment.

If we are to believe the words of Einstein, Mozart and others, it is this sense of intentioned consciousness, sense of linkage, that holds the key. What I see as particularly noteworthy is that, the process, and the experience that produced it seems to be the same whether the breakthrough is in the arts, sciences, or humanities

Consider the description of Brahms describing the act of composition: "... in this exalted state I see clearly what is obscure in my ordinary moods; then I feel capable of drawing inspiration from above as Beethoven did... Those vibrations assume the form of distinct mental images. . . Straightaway the ideas flow in upon me... and not only do I see distinct themes in the mind's eye, but they are clothed in the right

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forms, harmonies, and orchestration. Measure by measure the finished product is revealed to me when I am in those rare inspired moods. . . I have to be in a semi- trance condition to get such results – a condition when the conscious mind is in temporary abeyance, and the subconscious is in control, for it is through the subconscious mind, which is part of the Omnipotence that the inspiration comes.”⁶

If we can say that creativity is something other than manipulating the known elements of a problem in some new and more elegant way, and instead constitutes a leap into the unknown, as those accorded the title “creative genius” insist, then perhaps research in parapsychology, the one discipline that studies rigorously controlled intuitive events, may shed some insight.

For example, when people are asked to carry out an intuitive task, known as remote viewing, the ability to describe persons, places, objects or events from which one is physically or temporally separated, and about which one could not know through normal sensory or intellectual channels in debriefing sessions viewers frequently say about their experience that “it came in a flash.”⁷

These are exactly the words Thomas Kuhn, perhaps the leading historian of science in the 20th century, used in his historically significant book, *The Structure of Scientific Revolutions*. Kuhn notes that these experiences represent a change in gestalt, a change in “beingness.” “Normal science,” he says, “ultimately leads only to the recognition of anomalies and to crises. And these are terminated not by deliberation and interpretation, but by a relatively sudden and unstructured event like a gestalt switch. Scientists then often speak of the ‘scales falling from the eyes’ or of the ‘lightning flash’ that ‘inundates’ a previously obscure puzzle, enabling its components to be seen in a new way that for the first time permits its solution.”⁸

Research suggests that both subjectively and objectively the statement is accurate. Studies have shown that there is a short “window of intuition” which then closes down as intellectual analysis over-rides direct perception of the nonlocally sourced intuitive images – a process known as analytical overlay.⁹

The individual bits of information seem to come in a distinct pattern. The experimental data have taught us that there are also practical things to be done which can “fix” the image so that it remains available to memory – and does not vanish like a dream.¹⁰ One of the easiest and best is to make a simple drawing. This seems to allow a wide (and undefined) range of detailed information to be developed. These simple drawings look very much like the doodles made by many scientists, particularly physicists, as they attempt to translate their interior images into an expression they can share with colleagues. The sense of acquiring data via some linkage with some greater unity that scientists, artists, and composers all report suggests this a domain of information architectures outside of spacetime. This insight is reflected in Jung’s concept of the Collective Unconscious,¹¹ the Morphogenetic Field Theory most recently proposed by Rupert Sheldrake,¹² as well as various other less well-known theories and models that have been put forward.¹³ Also, I think, it is significant that this same concept of a nonlocal domain is reflected in the ethno-historical concept of the Akashic Records, a sense of a nonlocal informational domain believed by cultures across time, culture, and geography.

Further, there is clear evidence of a direct correlation between intuitive functioning and creative decision making in business. Consider this example: Douglas Dean and John Mihalasky of Newark Institute of Technology carried out a series of experiments involving 385 Chief Executive Officers of American corporations.¹⁴

The task required of the CEOs was to precognitively predict 100 randomly selected numbers. The results were then correlated with the financial report of the corporations. In every experiment a positive correlation was established between financial performance and high precognitive functioning – a correlation sufficiently strong that Dean was able to examine financial reports and predict how the CEO of that corporation would do in his number predicting experiment.¹⁵

I have explored the correlation of consciousness, creativity, and innovation for over half a century by now and both my experimental and historical work has led me to conclude that there are six major components to the pattern of these creative breakthroughs that seem to be common to all tasks and fields.

Excellence: Whether it is physics or sculpture, individuals of genius are masters in their field; thinking visionaries, intellectually on the leading edge, whose analytical prowess gives them the power to define the problem to be addressed. Yet this does not mean necessarily that they are the smartest people. The late Nobel Laureate Richard Feynman, humorously recounts sneaking a look at his college file and learning that his I.Q. was 124.”¹⁶ Superior, a level attained by less than 5 per cent of the population, but hardly an indicator of an internationally recognized and historically significant career in physics. Intelligence is needed, but creativity is more a function of working at full potential than just having the highest I.Q.

One correlation that does seem to hold was described by Dr. Merwin Freedman of San Francisco State College – a conclusion reached after studying the relationship between I.Q. and creative success. Dr. Freedman wrote, “Observations indicate that the more creative individual students tend to be more troublesome to the average teacher than other students.”¹⁷ It is a finding which, by itself, urges better understanding of the creative dynamic, so that our educational system does not dismiss troublesome individuals who are simply bored.

Edwin C Land, the inventor of the Polaroid process, at the end of his career re-examined the work of hundreds of scientists and engineers in his firm and concluded and echoed the thinking of both Kuhn and Freedman. He found that most significant discoveries were made “by some individual who has freed themselves from a way of thinking that is held by friends and associates who may be more intelligent, better educated, better disciplined, but who have not mastered the art of the fresh, clean look at the old, old knowledge.”¹⁸

How does that work? Looking across data, experimental, anthropological, and historical, what stands out is that the key to creative breakthroughs is the ability to attain and sustain intentioned focused awareness, because that opens one to the nonlocal aspect of their consciousness. And there seem to be two ways this happens.

One path is neurotic obsessive focus. So strong is this iconoclastic factor that it has become part of our folklore, the eccentric genius with personal peculiarities of behavior.

Nikola Tesla, for example, was one of the towering figures of early 20th century science, yet his fear of germs led to his demand that everything on his table be sterilized, and that at least two dozen napkins be placed next to him when he sat down to eat.¹⁹ What produces such an imbalance? Why do many geniuses cling to debilitating idiosyncrasies? Perhaps, without consciously understanding the relationship, they are afraid that if they give up their obsessions they will lose their focus and thus their creative powers.

The deep knowing that a solution to the challenge does exist: Mastery of one’s field is critical for a second reason; it is a precursor to knowing (as opposed to believing) that a solution exists. As Einstein explained it, “I feel certain I am right while not knowing the reason.”²⁰ This knowingness could be described as a “leap of faith.”

Strategies of inward looking: It is essential to develop some technique of inward looking – some way of connecting with the factor that lies outside the purview of the intellect. Here again the ability to focus is a central factor. Historical accounts and laboratory research both suggest that meditation, gardening, even sports such as darts can fulfill this portion of the creative process.

Years ago, when I was covering the early phases of the Space Program for the National Geographic Society, I visited Cape Canaveral and while walking down the hall happened to see a group of scientists and engineers engaged in a dart game. Later that evening I met geologist Eugene Merle Shoemaker, one of the pioneers of planetary science, who had been one of the group I had seen, and he invited me to have dinner with him. I teased him about spending the afternoon

at darts. He responded that it was his team's secret weapon. "When we get stuck and no intellectual solution suggests itself," he said, "we begin playing. At first the conversation is about trivial things but, after a while someone is likely to offer a solution to the problem we face. A little while later someone else will add something and, suddenly, as if a spark caught fire, we will all be talking about the problem again. I can't tell you how many insoluble problems we have solved this way."²¹

That dart game is a variation of something experienced by all who strive for creative breakthroughs. It is a technique allowing the practitioner to enter into a relaxed, open-focus state. Clearly, understanding this process holds substantial promise for learning how to create these states.

Remote viewing is a task that also depends on opening awareness to the nonlocal. It is so easy to do successfully that it is the one experimental laboratory protocol that has transmuted into an avocational social movement, with all the accoutrements one would see in a sport. There is a complex of social media, books, videos, conferences, journals. Research has shown that meditators do better than non-meditators.²² Why? Because meditation, of whatever form, whether religious or secular, teaches focusing with intentioned awareness on an altered state of consciousness.

Surrender: A surcease from intellectual struggle must occur in order for the breakthrough to take place. One must reach the eye of the intellectual hurricane, a place of peace and assuredness, in order for the moment of breakthrough to occur. Surrender leads to the kind of inner-listening associated with creativity, just as intellectual command allows inner-listening to be effectively transformed into a socially useful contribution.

Darwin describes how, after years of collecting data, one day while relaxed and away from his working place, the key issues of evolution fell into place in an instant.²³

Alfred Wallace, who arrived at similar conclusions at almost the same time, had his experience of illumination when, after eight years of collecting specimens in the Malay Archipelago, he contracted a fever. After days of semi-delirium, like Einstein he experienced a breakthrough in which the basic principles of evolution's gradual change suddenly emerged in his rational mind.²⁴

The French mathematician Jules Henri Poincare reported that on two occasions major breakthroughs seemed to come "from thin air."²⁵

Frederick Nietzsche states that *Thus Sprach Zarathustra* came to him while he was walking through the woods beside Lake Silvaplana. He "saw" the story in a moment, but took months to write out his vision.²⁶

Given the commitment to do so, could we, in fact, develop training processes which would create the conditions for a creative breakthrough? Research since the mid-1970s by teams at such institutions as Harvard Medical School and Menninger Foundation, suggest a sound scientific basis for approaching this part of the process exists and is surprisingly easy to learn.^{27,28} Combined with research in meditation and Altered States of Consciousness (ASC), this surprisingly large corpus, although principally focused on stress-reduction and psycho-physiologic self-regulation strategies, clearly suggests that these same techniques could be employed in developing a personal inward looking discipline designed to enhance creativity.^{29, 30, 31, 32}

Even the sleep state has its role to play in the surrender and inward looking components of the creative process, as evidenced by both laboratory studies and autobiographical accounts. Consider just one pattern apparent from my biographical research. Robert Lewis Stevenson recounts how he would go to sleep asking, "the gremlins of my mind to write a story while I slept."³³ Physician and researcher Dr. Jonas Salk, provides this account: "Intuition is something we don't understand the biology of yet," he says, "but it is always with excitement that I wake up in the morning wondering what my intuition will toss up to me, like gifts from the sea. I work with it, and rely

upon it. It's my partner."³⁴ Salk is reported by Fortune Magazine editor Roy Rowan as crediting this technique in guiding him to make the correct leap that led to the discovery of the polio vaccine, and he told me the same during a conference at the Salk Institute.^{35,36}

Perhaps the most ironic example, however, is one given by Rene Descartes. On Saint Martin's Eve (November 10th) 1619, in Neuberg, Germany, he had an experience which led to what he called "a wonderful discovery."³⁷ It led him to formulate what he called "a marvelous science," a world view whose hallmark was its commitment to the primacy of the intellect; a view which has dominated how technological cultures have thought about the world ever since. What was this wondrous experience? It was a series of three dreams during the course of a single night.

The moment of illumination: It has been called the Ahha! experience and could be known as the moment of genius. As can be seen by the examples already cited, it is invariably wholistic. Even the most cursory analysis of either anecdotal or controlled intuitive experimentation produces numerous subjective accounts. Typically researchers hear participants say "Images are all there... as if it were a hologram hanging in my mind."³⁸ Indeed, so strong is this aspect that Arthur Koestler coined the term *holons* to deal with this inpouring of comprehension.³⁹

Intellectual explication and verification: Once the moment of illumination has taken place, the conscious, analytical, and synthesizing intellect comes back into play. Descartes gives a clear example of the process when he says that after his dream it took him the rest of his life to make that vision intelligible to others. There is also the necessity to winnow the valid inspirations from the erroneous ones. This, too, requires the special skills of the intellect.

These six steps describe a natural rhythm which present research suggests may be susceptible to objective quantification. We are not there yet, though now it is conceivable to structure an experiment that tracks genius moving through the brain. Scans and test procedures are guiding our way to understanding our instrument of insight.⁴⁰

But the instrument - the brain - is only the physical, not the full continuum of consciousness. A body of research of which intuition and creativity are but a part. This is an emerging paradigm, just as Kuhn described. One proposing a world view incorporating consciousness into science and recognizing that it is causal and fundamental, as Planck proposed in 1931 in his famous Observer interview. A paradigm which recognizes that all manifestations of consciousness, regardless of the complexity of their physical forms, are within the domain of nonlocal consciousness and part of the matrix of life. A network in which each component both informs and influences, as it is informed and influenced.

Why is the issue of consciousness, creativity, and innovation so very important and urgent now? Climate change. An existential threat to human culture in all its forms. It is upon us, whether we fully recognize this yet or not. As I write this I see video after video of the remnants of what until a few days ago was Mayfield, Kentucky. The tornado that destroyed it is historic and dominates the news. Less covered but no less a catastrophe in the making is what is happening to the Thwaites Glacier in Antarctica. Scientists report, "An ice shelf holding back one of Antarctica's most perilous glaciers is eroding from below due to higher ocean temperatures, prompting scientists to warn... that this key reinforcement could shatter in the next three to five years - a development that would threaten millions of people with intensifying sea level rise."⁴¹

Why do I mention this in a paper on consciousness, creativity, innovation? Because, in my opinion, it is the linkage of consciousness and creativity that gives a pathway through the climate change that is occurring and altering our planet, and all the beings on it. Incorporating consciousness, on the basis of objectively verifiable evidence, as a fundamental to be considered in science, will change the kind of research we fund, the technologies we choose to develop, the social

policies that we enact. When one thinks that all life is interconnected and interdependent, and consciousness is causal and fundamental, as Max Planck told us one's priorities change, and fostering wellbeing is seen as the optimal route. We are in desperate need of this new world view. I believe our survival depends on it. Imagine what would happen if we openly espoused training students in a no-sectarian way to develop the discipline of daily meditation and techniques that would increase their ability to focus; to become creative in whatever they do.

If we can come to better understand the relationship between creativity, intuition, and innovation, and the process that invokes moments of genius we will make ourselves better and more insightful researchers, clinicians, and business people. And here is the promise: Someone who undertakes the journey may change both themselves, and the course of history.

Author bio

Scientist, futurist, and award-winning author and novelist **Stephan A. Schwartz**, is a Distinguished Consulting Faculty of Saybrook University, and a BIAL Fellow. He is an award winning author of both fiction and non-fiction, columnist for the journal

EXPLORE, and editor of the daily web publication Schwartzreport.net in both of which he covers trends that are affecting the future. For over 40 years, as an experimentalist, he has been studying the nature of consciousness, particularly that aspect independent of space and time. Schwartz is part of the small group that founded modern Remote Viewing research, and is the principal researcher studying the use of Remote Viewing in archaeology. In addition to his own non-fiction works and novels, he is the author of more than 200 technical reports, papers, and academic book chapters. In addition to his experimental studies he has written numerous magazine articles for Smithsonian, OMNI, American History, American Heritage, The Washington Post, The New York Times, as well as other magazines and newspapers. He is the recipient of the Parapsychological Association Outstanding Contribution Award, OOOM Magazine (Germany) 100 Most Inspiring People in the World award, and the 2018 Albert Nelson Marquis Award for Outstanding Contributions.

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