Creativity and the Scientific Method

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Introduction

It is seldom realized that the "scientific method" is as rigid an orthodoxy as ever existed. *Unlike any other ideology*, it cuts across all religious and geographical lines. Chinese or French, theist or atheist, the scientific method is the same and the striking successes of science, understandably, tend to lend credence to it. Nevertheless, I believe that something is seriously lacking in the scientific method as currently understood and applied. So what is wrong with science?

Generally speaking, we think of the scientific method as being a method for *verifying* our creative insights, but not for *arriving* at them. But does this make sense? Creativity is the heart and soul of science - its engine. How can we separate the scientific method from the process that generates the very insights that it is meant to verify? After all, is the scientific method not how we "do" science and, without detracting from the need to empirically objectify our findings, isn't the contemplation that leads to new insights the very essence of this "doing"?

This paper will show that the role and place of creativity in the scientific process must be reconsidered. A shift in emphasis towards the creative generation of ideas will call for a complete revamping of the creative motor of science. We must set the stage so that the Eureka sparks of creativity – the short bursts of inspiration that have driven science until now – will be replaced by more enduring *states* of creative consciousness of which we are, in principle, capable.

But instead of attempting to stimulate the creativity of scientists who as a rule have difficulty generating intensity, we need to empower scientists, already electrified by some new possibility, to single-mindedly pursue their vision. They will require an environment favoring their existing intensity and the states of creativity to which intensity can lead provided there are suitable safeguards. These will include psychological and spiritual cushioning techniques designed to protect these creatively inspired scientists from various forms of burnout.

It is clear that creativity is the heart and soul of science and that, without Eureka sparks of creative vision, there would be no truly original ideas to verify in the laboratory. The root of the problem is that these visions come, almost always, *as sparks* - short bursts of inspiration - rather than as extended, higher states of creative consciousness encompassing the whole body. Imagine trying to run your electronic appliances on sparks of static electricity generated from rubbing the carpet. Absurd as this might seem, I claim that this is a faithful analogy for the current inefficiency of research in science! For example, think of the countless billions of dollars that have disappeared down the black hole of cancer research. I am proposing a "Mind Tank"[1] that could establish a new standard of creativity in science swiftly producing the breakthroughs that we so urgently need.

Effort

My purpose here isn't to belittle the efforts of scientists but to remind ourselves that the effort we put out is always a function of what we believe possible - faith. Until Roger Bannister ran the four-minute mile in 1954, it was widely considered impossible. Soon after, it became commonplace. We are able to go to extraordinary lengths once we know something we want is possible to us. The pioneer, in the absence of such certainty, is acting to a great extent on faith which is why we attribute such virtue to important pioneering efforts.

All effort boils down to the intentional movement of energy within us - the energy of attention. Anyone who has studied the dynamics of attention (and few pursuits are more elusive) has come to realize that our awareness consists of micro-connections between ourselves and the objects of our attention - connections that endure for the tiniest fraction of a second. The illusion of continuous attention is analogous to that of steady illumination in light bulbs that flicker at 60 cycles per second and the continuity of action in moving pictures that flash on the cinema screen at 16 frames per second.

The act of meditation, in its many forms, is basically an effort to stabilize attention so as to allow consciousness to form, circulating in more orderly manner in conformity with the human form. It is a struggle with which humans have been engaged from the dawn of time, an attempt to bring more and better quality energy (e.g., intellectual, emotional, motor, sexual) to the point of observation in order to prolong our participation in the "eternal present" and allowing us to experience more of reality. The duration and quality of attention necessary to actually perceive the enormous number of subtle attributes inherent in any substance or phenomenon and integrate that data in our mind in order to extrapolate beyond direct perception requires a sustained level of effort quite impossible to imagine.

Is it any wonder that meditators of all ages have preferred to turn their inner gaze "upward," towards formlessness and away from the hard world of manifestation? They prefer to seek the embrace of a transcendent ocean of fine energy rather than turn "downward" and engage the world of physical matter that is coarser and immeasurably more resistant to relationship. Matter, of course, is the domain of science. One might say that, from the point of the spiritualist, "Fools rush in where wise men fear to tread" could very well describe the efforts of scientists to confront, penetrate and illuminate the obscurity of matter. It is a spiritual truism that the highest lights are revealed from the lowest place. By this definition, science is a spiritual pursuit of the highest order. But, for the most part, scientists have not yet grasped that they are involved in the highest of spiritual pursuits.

Mind, Vision & Knowledge

The function of mind is to integrate outer and inner -- what we perceive in the phenomenal world and what we are in our being. This resulting state is called "knowledge," in the biblical sense, as in "And Adam *knew* his wife Eve" (Gen. 4:1). The obstacle to learning more than is already known about any given phenomenon boils down to natural limits imposed upon our efforts of observation, limits that present us from mobilizing. The fuel that drives observation is desire - desire that is strong enough to create a privileged and enduring link of attention - a mind link - between ourselves and the phenomenon studied. The quality of that link depends on the force of our attention and is derived from the strength of the intention and faith that sustains it. Thus it is force of our "desire" or its more encompassing form, "will," that determines how deeply we are able to penetrate the obscurity that hides the secrets of matter from us and hence the infinite blessings stored up for us within this obscure world of matter.

The body, in its entirety, was meant to become a coherent instrument of vision, an integrated, higher-order mind. Some call it a "bodymind" or "mindbody" - integrating inner and outer, higher and lower. Our bodies are not opaque slabs of meat even if we sometimes do feel that way. When we turn our gaze inward, as in most brands of meditation, and deploy and modulate our energy appropriately, we are able to observe that the space we normally associate with our body is alive with feelings, sensations and thoughts. We have all had moments of elation and inspiration in which we felt we could almost fly, where our bodies felt lighter than a feather, even transparent.

This inner space also lends itself to vision including structured vision corresponding to real, world phenomena. But for creative vision of some material reality to manifest within us, our inner "cyberspace" or "mind-space" has to vibrate with and become patterned and programmed with the intricacies of the phenomenon being contemplated, mimicking it in all its characteristics and properties. In a virtual sense, through its projection of the observed phenomenon within ourselves, we must "become" the phenomenon if we are to reveal the inner secrets of its makeup and be able to use it optimally for the benefit of man. This is knowledge in the fullest sense. Again, "Adam *knew* Eve.

Extrapolation

The power of this higher form of mind to make use of visions representing natural phenomena is found, most particularly, in its capacity to extrapolate and correlate. If the mind grasps, in sufficient detail and with sufficient accuracy, the revealed aspects of a phenomenon, it can, in principle, hypothesize and project estimations concerning aspects that are hidden by virtue of being beyond the range of normal human perception. Some qualities of a phenomenon will suggest possibilities and constraints in one direction while others will suggest possibilities and constraints in others. Numerous features are normally accessible to perception and each such feature, in combination with others, points to the possibility of still more features. In fact, so many hypothetical possibilities exist, that ordinary mind boggles at all the imaginable combinations and permutations. It would take endless lifetimes to mechanically program a computer with all of them in order to perform the factor analysis needed to collate all this data and zero in on the one constellation of qualities that existence allows for any given phenomenon.

So to discover, definitively, which combinations (and thus which features) are possible and how these possible ones combine to form the complete picture of a phenomenon, we ourselves have to become the computer. We must be able to see from above, as it were, the unique set of circumstances that constitute the being of the phenomenon under consideration and how it connects to other phenomena that are the adjacent components of the larger reality. The closest to this kind of seeing or "Accelerated Thought" is called, in the world of computers and, more recently in neurobiology, "massive parallel processing."

In the absence of this extraordinary effort of meditation/observation and the higher perspective it provides, we resemble rats in a maze, condemned to see tiny parts of the whole, painstakingly piecing together clues - the isolated parts of the "reality puzzle" that we stumble upon. To compensate for the poor quality of our attention, we develop extensions for our senses such as microscopes and telescopes, and for the poor quality of our thought, devices such as computers. These serve very much like crutches and, like any artificial support that helps us substitute for the effort of direct confrontation, they tend to divert us away from considering the kinds of efforts for which we were created and the discoveries to which they would lead. Extrapolative vision (Accelerated Thought), possible once intense contemplation passes into the deepest possible meditation, can be far more penetrating and revealing than any microscope, telescope or particle accelerator, strange as that may sound to ordinary mind not to mention to hard-core scientists.

Candidates

If, indeed, we are cast in the image of the Creator (and this is a belief that not all men share), our creative capacity is not only of divine origin but also of divine (and thus unlimited) capacity. Since, as microcosms, it is said that we reflect the cosmos in its entirety, it stands to reason that the fullest realization of this creative capacity can embrace the finest and the coarsest of substances in the cosmos provided our effort corresponds to the biblical formula, "with all your heart and with all your being and with all your might."[2]

The question remains, what kind of people are equal to the creative effort necessary to accelerate scientific and technological development to the greatest degree possible? After all, we could not mobilize the effort to even throw a light switch if we didn't believe that there was a good chance that the light would go on. Mobilizing the will for this ultimate effort would demand an almost unlimited faith in the possible - a conviction that the infinite *is* hidden within the apparently finite and that we *are* meant to reveal it. Who among us are capable of this level of faith? For it is most likely that upon them our future depends.

There does exist a class of people who do believe in unlimited possibilities. These people are called "children." We indoctrinate small children with fairy tales - stories in which good prevails over evil and the prince and princess living "happily ever after." Until they are able to reason and question, we protect children from the sordid "facts of life" expressed as, "life is not a bed of roses," "life is not a bowl of cherries," "life is hard and then you die," "by the sweat of your brow," etc. Instinctively, we know that children must be instilled with the belief that life is good and must be sheltered from knowledge of what we believe the "real" world to be. Then, around the age of four - the age of reason - we crush them with the news that fairy tales must be put aside as irrelevant, that life and nature can be horribly cruel and unjust and that, in any event, all life ends in death.

The spirits of only a tiny remnant of children survive intact after this uncompromisingly brutal assault upon their most fundamental beliefs. In most, the resulting disillusionment amounts to the almost total destruction of their world view and an assault upon their faith in possibilities. Only an exceptional few, miraculously, find the inner resources to resist parental authority and cling to their former, utopian ideal. Accordingly, they now belong to a separate reality. Having taken this "autistic" step of backing away from conventional truth and thereby rejecting the standards by which society operates, these children, throughout their lives, will for the most part prove constitutionally unable to compromise themselves and play the games usually required for professional advancement and success.

Disillusioned, out of step and disappointed with society, these people tend to turn to the world of matter and the natural sciences for the realization of their idealistic yet childlike ambitions. Children tend to be seduced by the transformative implications of chemistry sets and magicians pulling rabbits (ex nihilo) out of hats. Usually, and only long after they have committed themselves to the pursuit of scientific vocations, do they come to realize to what extent nature resists investigation and how unlikely it is that their utopian dreams of physical transformation could be realized within the framework of academic or industrial laboratories.

Realization

Yet what makes these individuals so rare and special goes well beyond their awkwardness and unconventionality. Regardless of the compromises that life may have demanded from them and whatever corruption they may have admitted into their lives, unlike the rest of us, their capacity for psychological and spiritual connection with their core of faith in the unlimited possibilities inherent in the cosmos remains largely intact. Thus, potentially, they have the ability to mobilize effort leading to vision that is far beyond the scope and possibilities of the rest of us.

Since these have, within themselves, the key to breaking the cosmic bank and revealing the infinite in the finite, it stands to reason that everything possible should be done to furnish them with conditions of existence that will enable them to realize their special potential. First and foremost, they should be given shelter from the cynical attitudes and mundane pressures of a world that routinely and as a matter of principle crushes the spirits of its young. Beyond that, and still more important, they must be provided with the psychological and spiritual support that will allow them to function under the enormous stress generated in encountering radical states of consciousness. Moreover, these states, until they become firmly established, will for a time clash with imperfections, internal contradictions and corruption inevitably induced in their psyches and, indeed, in the psyche of anyone born into this world.

Individuals prepared to risk their sanity in this adventure in order to creatively reveal breakthrough knowledge for the rest of us will need to be surrounded by a support team able to help them handle the stress. The members of this team will need to have strengths of spirit and character complementing the weaknesses of the candidate for accelerated thought and be experienced, at least to some degree, with the kind of difficulties he is likely to encounter on his journey into expanded consciousness. He will bond with this, made-to-order, team of experts and their rapport with him will enable him to accept, with the fullest possible confidence, the advice he will receive at critical junctures of his journey when he'll be most exposed, sensitive and vulnerable.

Under the auspices of the Project Mind Foundation[3], based in Jerusalem, a specialized facility has been designed for this function. This building is to serve as the center from which a new standard of creativity for science will be established. From the world over, it will draw these breakthrough-minded scientists who, as children, substantially relinquished their claim to conventional happiness remaining faithful to their vision of truth and unlimited possibilities.

The necessary elements for this major experiment in higher creativity are now being assembled but in, parallel, the forces of negativity are also growing. Each day sees a global increase in deprivation, injustice, frustration, rage and despair. And with each new day, conventional science and technology invent ever more spectacularly lethal tools that become available to fanatics committed to kill and die for some narrow ideal. The media fan the flames of this burgeoning negativity by parading the opulent lifestyles of the insular few before the destitute many and by providing terrorism access to the global stage. Yet it is becoming clearer that no political solution rooted in mundane duality will ever deal with the cosmic root of these issues that have been brewing for millennia but are only now coming to a head in a shrunken world.

Moral Force

Science is popularly accused of being amoral but, paradoxically, science will yet prove to be the most moral force in history. Yet even those who believe that science is amoral tend to also believe that evil comes primarily from the evil application of knowledge. Unfortunately, they are seeing only a small part of the picture. After all, whether a given use of technology is advisable is a subjective call and no one can foresee the consequences of pursuing any given line of research any more than one can know the future with any degree of certainty.

Nor is knowledge, itself, neutral. To the contrary, it is the key for accessing all the good that Creation has to offer, that many of us believe us an unlimited good. So when one dedicates one's life to science, one is making a moral choice. The problem is that the greater the potential for good, the greater potential there is for evil and, without fully understanding the dimensions of existence or morality, we are at a loss to know the relative implications of the research we do. So how can we guarantee that good and not evil will issue from our research?

Imagine newspaper headlines, now reserved almost exclusively for reporting catastrophes, daily announcing the good news of life saving and life enhancing scientific and medical breakthroughs. Imagine the melting away of anxieties connected with disease and, especially, currently incurable diseases. Imagine the hope generated, as matter is mastered, and all manner of lack is eliminated. Is it possible to control matter at the atomic and subatomic level? This is the explicit mission of nanotechnology that is rapidly gaining in credibility. But while nanotech accurately defines the purpose of science and provides it with the focus it needs, the issue of creative effort as the key component of the scientific method remains unaddressed. But if the Project Mind strategy works, the aim of nanotechnology (and thus that of science) will be accomplished and universal abundance will be achieved. Material possessions of all kinds, having become universally and limitlessly available to all of humanity, will be considered worthless since it is psychologically impossible to covet what anyone can attain, freely, indiscriminately and effortlessly. No bitterness or negativity can exist in such an atmosphere.

Once seawater is indifferently interchangeable with diamonds or anything else, ownership will lose all meaning. There will be no further need for cupboards, drawers or even pockets since whatever we desire will be synthesized on the spot, used and, then, recycled back into its subatomic constituents. Beyond the relief of anxiety that is at the source of all neurosis, once matter is completely mastered on all levels including the biological, real human vulnerability will also be at an end. Consequently and to most, amazingly, the only possible remaining objects of our desires will be metaphysical. Invulnerability and our resulting indifference to physical possessions, will spell the end to materialist values and our attachment to the thin, material crust of existence that, at present, renders us blind to the metaphysical.

This will free our awareness from the subjectivity and neurosis that has defined human existence until now and derives from our awareness being restricted to the physical crust of existence. Thus, paradoxically, physical mastery and abundance, will allow us all to awaken to the metaphysical and sacred nature of existence.

But first we must find those scientists in whom the child is still alive, those who, with all their hearts and souls, believe in unlimited possibilities. Only these will be willing to risk their psyches in the adventure that, through a new level of commitment and effort, will accelerate the uncovering of breakthrough knowledge and establish a new standard of creativity in science and, in the process, create a new understanding of the scientific method.

1. Phrase coined by Dr. Rae H. B. Batushansky Fishman

2. Deuteronomy 4:29, 6:5, 10:12, 11:13, 13:3, 26:16, 30:2, 30:6, 30:10 ~

3. PROJECT MIND - The Conscious Conquest of Man & Matter Through Accelerated Thought by T. Kun (Indian Rocks Beach, FL: Unimedia, 1993) available at the Project Mind Foundation website and through Amazon.com.

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