



ORIGINAL ARTICLE

ALTERED AND EXPANDED STATES OF CONSCIOUSNESS IN HIGHLY CREATIVE HUMAN BEINGS. THE CALL OF VOCATION IN MEDICINE AND SCIENCE.

-from perennial philosophy to modern science, psychology, medicine and oncology-

Salvador Harguindey MD, PhD

Institute for Clinical Biology and Metabolism, 01004 Vitoria, Spain.



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ABSTRACT

This article tries to define and reach a deep understanding of the intimate nature behind the present-day situation in science and medicine, and how this affects nowadays the human crisis of the world. It also shows how at the base of all these problems rests the stagnant stage of the level of consciousness of rational thinking of the status quo: namely, modern rationality as the unique prevalent thought allowed. This level of human consciousness is not endowed to fully understanding the roots, origin and dynamic mechanisms that have led to the psychological, medical and sociopolitical nature of the crisis. Staying at that level, it will always be impossible to find real solution to the multifactorial nature and multidimensional aspects of nowadays biggest and growing problems of humankind. To overcome them, we need to activate a type of supra-paradoxical, supra-rationalistic and non-dualistic, Taoist-like thinking, that through a quantum jump in the stage of human evolution may allow to achieve a great syncretic synthesis necessary to integrate the various evolutionary perspectives at hand as peaceful, however revolutionary step to change, in the sense of improving and creating new external and inner realities.

To this end, a new type of vocational and non-dual process of creativity is proposed here. It mainly relies on the psychospiritual experiences of great creative personalities in the various areas of science, medicine, politics, but also in literature, art and the human spirit. Finally, the so-called altered - also known as expanded - states of consciousness and the deep psychological crises that these individuals must first face and then overcome, are here displayed to understand how they have dealt with the deep-seated paradoxes, as well as despairing periods of stagnation and emotional blockades that small group of these, sometimes odd, but always highly creative beings.

Introduction

Most of society feels that we live in a spiral of increasingly vertiginous and uncontrollable changes, with rapidly growing fractures and fragmentations of all kinds and at different levels: personal, familiar, medical, scientific, social, international, economic, spiritual, etc. This represents a world sunk into all kinds of conflicts because of the modern rationalistic consciousness of hyper-dualisms and confrontations of the "unique thought". Although no one knows with certainty where these changes are heading, the state of separation of human beings of their highest and deepest, most truthful inner natures, is leading societies of the entire world into a downward spiral ad inferos. This does not convey at all that humanity is now the best of all possible worlds, but more towards an apocalyptic future¹. The widespread feeling of progressive sinking down interferes with a vast majority of human beings in their search for happiness, meaning, safety and health, but increases the feeling of fear, solitude, disease and emptiness. At the most, this situation is taking us to the tedium of meaninglessness and to a silent and existential panic paving its own way to darkness and chaos. To start with, it is necessary to understand, or at least to accept, that the etiological causes of this regrettable world are psychospiritual in nature. Thus, thus the potential cure will only be possible proposing remedies at that level, to descend from there into the practical realities of daily living.

Every crisis hides deep inside its own primordial causes, reasons and dynamics that have made them possible, So, the first task to do is to discover and unveil its necessary secrets in order overcome them. Secondly, it is also necessary, but still not enough, to reach to its roots to obtain a radical diagnosis (Harguindey, 2000), because only from there, from the very same eye of the hurricane and its own violence, we will be able to reach the necessary inner insight and strength, which, paradoxically, is afforded by the bottom of that pit. Only if we can survive that psychical tsunami and

chaos, we will be able to jump back and climb to the surface, like modern Dantes ascending from hell, or like an old Moses or a new Zarathustra stepping down from their mountains to bring us tables with new commandments.

Under a wide-ranged perspective, here we first analyze and then integrate ideas from many sources of intellectual and scientific developments which are fundamental for human life, an effort that is nowadays more necessary than ever before because of the decadent times that humankind is living through.

1. A RADICAL AND NON-MAINSTREAM APPROACH TO TRUE CREATIVITY IN LIFE, SCIENCE, MEDICINE AND POLITICS FROM EXPANDED STAGES OF HUMAN CONSCIOUSNESS.

"The cosmic-religious experience is the noblest motive for scientific research".

Albert Einstein

The first question that assails the mind is: if outside the Churches there is salvation, and we are sure of it, is there still salvation within the System and the status quo? And if this is so, where is hope waiting for, or there is no hope anymore? We were taught by Einstein that no problem is solved at the same level of consciousness that originated it. So, to begin with, we need to understand or accept that it has been largely the greed, corruption and lack of empathy of that entity of bankers and professional politicians who have created the immense problem of the current world crisis. Then, they are not going to be the same entities trapped in their stage of ego consciousness that will solve the problems or find the way out of that labyrinthic maze. Because the only way out of a labyrinth is to watch the path that leads to the exit from above, this is, from a transpersonal, suprapersonal and supraegoic level of consciousness.

The entire situation reveals that a leap from the ego-stage of human consciousness to supralaberintic creativity is needed to find a real

solution to any crisis. True solutions cannot be found at the same level and awareness, thought and behavior that have caused the problem. This is not possible because at the level of such a diseased structure, there is lack of understanding, empathy and generosity, and, on the contrary, too many egotistic motivations, doubtful intentions, fear, greediness and lack of ethics. The result of all this: soulless materialism and superficiality, self-centered narcissism, the unbearable migration crisis, and finally, the blind and conflictive attitudes of the three great organized religions. Namely, the religions of the egos, personal or collective -, all of them killing and dying under the same and inexorable law for all of them: God is on our side and the Devil on the side of our enemies. In other words: ignorance, narcissism and stupidity: the three great evils of humanity that have dominated the world since Buddha announced them until these days and that have been the basis to justify all kinds of wars. The first question that assails the mind is: if outside the official Churches there is salvation, and we are sure of it, is there still salvation within the System and the status quo? And if this is so, where is hope waiting for, or there is no hope anymore?

When a model of thought or paradigm is close to exhaustion, like nowadays, is at the level of thinking and feeling of rationalistic modernism and its unique dogmatic thought, it begins to reverberate within itself in increasingly closed circles and swirls, just like a spider in a cage. Those end up by forming downward spirals of self-protective misoneism, corruption and mediocrity, conveying such a force and intensity that cannot be controlled or fought any longer. The consequences of it are that outside those premises only prevail an increasing level of poverty of the weakest, misery and helplessness, suffering and dead. As Raimon Panikkar prophesied in 1999: *"Politics, as is commonly understood, have failed, and the current situation in the world has no future. Patches no*

longer work and only a true mutation, or metanoia, can lead us back to the right path. The System and the scientific-technocratic complex no longer have a face; the metastasis is total. The System annihilates millions every year. The danger remains in the totalitarian monopoly of modern rationalism. The world must be re-armed and that can only be done by restoring the soul. The problem, at its base, is spiritual" ².

Fortunately, in between inside and outside the System, there is the margin, the *limes*, so many times unjustly despised as "marginal", because that is where it lies and waits a new, virgin and necessary original kind of creativity, *"the creativity of the margin"*. In political life, this type of creativity is neither to the right or to the left of that model that survives out of a continuous confrontation, separation, inefficiency, hypocrisy, self-serving mechanisms and narcissistic egocentrism - as also happens in every radical nationalism according to Schopenhauer, Karl Popper and Erich Fromm. Something that Einstein put in his own words: *"On political bodies, whose members, in general, in regard to intellect and morality cannot be considered a representation of the most advanced sectors of society"*. This means that *"the destiny of nations cannot be left in the hands of the irresponsible owners of political power"* ³⁻⁶.

No one at a low level of evolution of his nature and consciousness the prepersonal and the personal/egoic stages can understand the immense effort that a fully original theoretical work requires, that is, one born completely virginal in the mind of its creator, that is, without any antecedent to lean on. It demands a total immersion of the creative being in something that comes as a gift or as a curse, or both together, since it can often be preceded by what is known as a "brainstorm", which is accompanied by a state of absolute disorientation and unbearable panic attacks (Table 1).

TABLE 1

FIRST QUESTIONS THAT APPEAR IN SITUATIONS OF THE INITIAL CHAOTIC STAGE OF UNSOLVED PARADOXES
A) "Only the individual can think. Do you imagine a group of scientists making the discoveries of Charles Darwin?" (A. Einstein)
B) Failure of rationalism to find synthetic and all-comprehensive solutions to serious problems?
C) How to access those depths where rationality and the language of words, either written or spoken, cannot reach? <i>"From painful experience we have learned that reason is not enough to solve the problems of our lives (A. Einstein).</i>
D) Is it possible to understand what it is and always will be, totally incomprehensible to the linear reason of the tridimensional stage of modern rationalism?
<i>E) How to explain the ineffable? Those "places of existence" where "rational and scientific reason and words are short in their possibilities of being correctly expressed? That is the complaint of Shakespeare, when Hamlet screams: "Words, words, words!" Or when Dante, in The Divine Comedy, tries to explain the same feeling: "It is not possible to explain in human words the act of moving to a degree superior to the nature that has been given to us." 7.</i>

Something that the blind narrowmindedness of the rationalistic mind uses to crucify the great creatives taking them for pitiful victims of madness and irrationality. This is done confusing the superior - the suprarational - with the inferior - the pre or irrational - or in other more technical words, falling into the jaws of Wilber's famous *"Pre-Trans Fallacy"* ⁸⁻¹⁰. According to the same author, *"the appearance of any higher stage of human consciousness is seen by the 'status quo' as the Devil himself"* ¹¹. This makes the scientist or highly creative researcher a pioneer who is not afraid to enter the jungle of the unknown and become a true hero by being the first to try the next higher structure of consciousness, one beyond all personal security and selfishness, while being perfectly aware that he may be losing his life in effort. Perhaps the exception to this unspeakable struggle is someone like Mozart, who does not seem to need to rise to the level of the highest and more evolved structure of consciousness, or *meme*, either extra-, supra- and or transpersonal, because he probably came to this world with it all impregnated in its nature, soul or spirit. This kind of transpersonal consciousness was considered by

psychologist Carl Jung as that consciousness that enables some people to overcome problems that otherwise would have destroyed them.

Fortunately, it is from the margin that the new creativity is born and grows thanks to a more evolved psychospiritual stage and ascended nature of human consciousness. This is a Unitarian and integral state and frame of mind that lives above and beyond any dualism ¹¹. A type of individual consciousness that stimulates direct and creative intuition and genuine freedom of thought of the free man, and where the intervention of society is usually negative and see any change or improvement as coming from the devil (misonism). As Einstein also wrote: *"Not even political parties, not even scientific associations, can, in essence, think. Only the individual can think. A corporation can organize the application of a discovery already made, but not to make one. Only the free individual can make a great discovery. Can you imagine a committee of scientists making the discoveries of Charles Darwin? In addition, if we do not collide with reason, we will never get anywhere"* ³. In other words, we will never be able to be truly generous, altruistic, silent and heroic like

healthy rebellious spirits, much less to express universal compassion and unconditional love. Nowadays, this position only belongs to a few individuals living within the so-called "*cutting edge of human evolution*"^{10,12}.

2. FROM THE DARKNESS AT THE BOTTOM OF THE CRISIS TO THE LIGHT OF CREATION. THE INITIATION FLIGHT FROM CHAOS AND SUFFERING TO ECSTASY.

"The crisis, the conflict, is the king of everything and the father of everything"
Heraclitus

"Only the injured physician can heal".
Carl Jung

In his book: "Medicine and creative activity", Rof Carballo¹³, wrote: "*Before experiencing the joyful bliss of creative enlightenment, a kind of neurosis is suffered*". An experience that the author called: "*the neurosis of creation*", and defined as a sustained, painful and torturing tension that becomes unbearable, especially if the solution appears to be completely blocked. In any case, what must be understood, or at least accepted, is that true creativity in any field, medical, scientific, social, artistic, political, spiritual, etc., is something very personal, something that belongs exclusively to the soul and consciousness of an individual. It is also important to know that such creativity is born solely of anguish (Table 2).

TABLE 2

NAKED AND UNPRECEDENTED CREATIVITY OF THE PRE-HEALING STAGE.
1) A new kind of more integral creativity is nowadays necessary to overcome the generalized and violent encounter with chaotic disharmony and mind-breaking contradictory paradoxes, the complex and the unsettling and an up-nerving mental disorder. First, it makes it disappear the previous sense of reality before trying to reorder the puzzle (<i>Stage of psychic dissociation and emotional roller coaster</i>) ¹⁴ .
2) Chaotic or deep crisis stage. Is there hope in chaos? Some thinkers and sages seem to say so: ^{15,16} " <i>Crises and chaos must be recognized and lived before being integrated into a new order</i> ". " <i>Goodness is in the center of Evil</i> ". " <i>Where sin abounds, even more grace abounds</i> " (Romans 5: 20). " <i>The darkest nights announce the brightest sunrises</i> " ¹⁵⁻¹⁷ .
3) <i>The stuporous situation stage</i> : Where the subject and the object merge into one to overcome unfathomable chasm - Direct contact with The Source, with The Roots, with The Origin ¹⁴ , with " <i>The World of The Mothers</i> " ¹⁸ , or " <i>descensus ad Inferos</i> " (Hades/Persephone).
4) <i>The brainstorming stage</i> . Time to imagine and fantasize alone, when these creative beings create problems with the status quo and are taken by insane minds.
5) <i>Dark Night of the Soul Stage</i> : Creation neurosis. Great chronic tension, torture and chaos, loneliness, blocked life, feeling of madness and loss of reason ^{13, 19-23} .
6) <i>Emotional stage and characteristics of the creative personality</i> : nonconformist- alienated-outcast-undisciplined. They are thought of as hyperphrenic children, irresponsible-untamed-crazy-emotional vagabonds-bohemians-eccentric, even impertinent (IN-perts)
7) <i>Stage of doubt and feeling of helplessness</i> . These highly creative human beings are fascinated by paradoxes and difficultness (Dostoievski), being dominated by the uncontrollable craving and obsession to

give chaos a new structure and a superior integral order until either reaching the Eureka Feeling¹³, or dying in the attempt (heart attack, mortal insomnia, etc.).

8) *Stage of "being pregnant" with a painful idea*, from which the obsessed mind cannot get rid of one single second because "scatological rumination") until *"the light comes as a blow to transcend the painful state"*^{13,22,23}.

A poetic summary of Table 2¹⁷:

For the genius the madman is a misunderstood person.

For the genius the madman is a brother.

For the genius the mediocre is a madman.

For the mediocre, a genius is another madman.

For the madman the mediocre is nothing.

For the madman the genius is him and only him.

Only a genius can understand a madman.

Only a madman can understand a genius.

Only a genius can understand another genius.

And only a genius can understand himself.

After all, it seems that is in the glare of the crisis where inventiveness, great discoveries and the best strategies are born. This has been called "paradoxical creativity" and even "creative psychosis"^{13,22,23}, a high-level creativity born within a state of mental splintering and emotional chaos. Or in words of Ken Wilber, *"the wise men consciously goes through the nine circles of hell, certain that nowhere else he would find the nine circles of heaven"*²⁴. In the same vein, Einstein also remind us that *"the real crisis is the crisis of incompetence, but that without crisis there are not challenges, and without challenges life is a routine that ends for becoming a slow agony"*^{13, 25}.

After those initial periods, the most spectacular and life-saving stage of a highly creative process is the moment of enlightenment, that instant in which, after a long and painful wait in search of a solution, the answer itself emerges out of the blue from the unconscious as a revelation that comes from another world. Now, the main characteristic of the creative man is his new capacity to respond after a superhuman effort of synthesis to the challenge that disorder and disequilibrium alter the human mind. The time has arrived to free oneself from all negative influences of the inner and outer environments (Table 3).^{13, 25}.

TABLE 3

STAGE OF TRANSCENDENCE, ECTASY, LIBERATION AND HEALING
A) <i>Supralabyrinthine stage: Unitive/holistic, Zen-Taoist mind, Supra-paradoxical and non-dual consciousness, transpersonal transcendence.</i> We finally have given birth to the idea. Somehow, we have managed to transmit and manifest ourselves coherently. And the best thing about it all is that we are not alone anymore (Neil Diamond). Finally, it has also been possible to respect what one felt within oneself as irrational (T. Khun). Now we are also to develop a lifesaving "witness capacity", that is, seeing oneself from the outside of oneself. And we can think: <i>"this is happening or has happened to me, I accept it, but the previous torture and chaos are no longer "all of me", just a part, which I can now analyze, tame and control"</i> ²⁵ . Finally, we find inner peace and a sense of bliss and holiness ²⁵ .
B) <i>Contact with the numinous</i> , defined as what liberates the mind and soul from the previous curse and pathological stage while we were waiting for the onset of the transpersonal perspective. Here emerges that experience that enables some people to overcome problems that otherwise would have destroyed them (Table IV) ^{26,27} .
C) <i>Stage of Illumination and spiritual awakening</i> ("Numinous/mystical experience. Total reintegration within oneself thanks to an interdimensional leap of consciousness (higher cognition). Eureka Feeling, Joy and Ecstasy, Satori, Liberation, Peace, Timelessness, Freedom. Finally meeting with "The Primordial Phenomenon of Goethe" Psychic rebirth. (Table V) ^{28,29} .
D) <i>Scientific revolution</i> : The definite and "angelical" ascent to the supraconscience allows disassembling/dismantling the previous reality and replace it with the new reality. This happens after returning from the primeval chaos with the imprinted answers. Inside Unification - Synthesis - Reconstruction - External and internal reintegration - Rerationalization - "metacosmesis" ²⁵ .
E) <i>Birth of new paradigms</i> in science (scientific revolutions), medicine, politics, philosophy and spirituality ³⁰⁻³² .

3. HIGHER STATES OF CONSCIOUSNESS AND THE CALL OF VOCATION IN SOME OF THE GREATEST GENIUSES IN SCIENCE AND MEDICINE. EXPERTS VERSUS "IN-PERTS".

"Vocation is the most paradoxical experience that can be imagined. It is a call, internal and sudden, that on the one hand it gives to a certain individual the maximum freedom, but on the other hand, being a feeling totally absorbing and demanding, it takes away all freedom to choose another destiny. Sometimes it even forces him to stop being who and what he was to forces him to become another completely different human being".

Jose Luis Arranz

Today, either in the world of medicine or in many other areas, we are used to hearing that someone is "a great professional". Society, and its nowadays unique thinking model, with its increasingly impoverished and impoverishing rationalism, including academicism, is full of great professionals, many of them very respectable, despite not having to be significant creators or parents of new and wonderful original ideas and discoveries. This is the world of "the experts" in the different disciplines belonging to the official world, one embedded in linear reasoning of cause and effect. It is the material world of the "egos", either in political power, banking, academicism, medicine, science, etc.

Thomas Khun considered that the experts represent the, so-called, "normal science" and that "average scientist" so detested by Nietzsche - versus the creative scientist or genius, one that, "*engenders and gives birth to great ideas or projects*"¹⁸. Also, in "Beyond good and Evil", Nietzsche defines the average scientist with despising words and accusations, such as: "*Compared to the genius, who either procreates or gives birth, the academic or scholar, the average scientist, always resembles an old maid, as she does not relate to the highest functions of man. Moreover, one even grants both the scholarly scholar and the old maids, who are respectable. You emphasize their respectability and still feel angry at having to make such a concession*".

The world of experts (EX)

Experts usually feel comfortable within the *status quo*, dwelling at ease while installed in the low-back chairs of the System. In this regard, Kuhn pointed out that, precisely, it is "professionalization" what leads to an immense limitation of the vision of scientists and to a considerable resistance to changes in thinking and in the onset of new paradigms, and therefore, to true progress. Likewise, it is the world of ruthless competitiveness and greed, of aggressiveness, materialism, psychopathic narcissism and superficial and megalomaniac politicians, together with the absence of empathy and compassion, what leaves not much room for hope. Namely: the modern world in search of its lost soul. This also represents most of nowadays' psychosocial life, immersed in the evolutionary stage of confrontational dualism and the preponderance of the omnipotent ego, one that so easily degenerates into the diseases of that ego-latry, ego-tism ego-centrism and ego-mania, in other words, the I/Me/Mine philosophy. By definition, the experts stay out of something (ex-) that limits them and their creativity: they observe it all from outside their own nature. In this mind, the world goes on and on, unchangeable and without a sane

direction, meaningless, decadent, aggressive, neurotic and violent. Once again: a spiral increasingly swirling down towards the darkness and chaos of the bottomless pit.

The world of the "in-perts" (IN).

This is where the healing power of the "in-perts (IN) - sometimes very impertinent to the EX -, appear in the middle of the crisis. Those are the solitary dreamers, the depositories of our affection, love, compassion and sympathy (see Table II, point 6). The first thing the EX do as soon as they can emerge to the surface and breathe, is to go back to their own roots to find some strength, help and shelter. Now they begin to realize that many of the solutions we look for in the future can be hidden in the past, in the origin and in that cosmic and loud scream of vocation, a mysterious call that they can feel like thunderbolt in the middle of a brainstorm. Sometimes, that "call" is disguised as a religious experience, a "both ways now" creative process that was labeled by Salvador Paniker "*a retroprogressive essay*"³³. In our own life of grateful physicians, medical researchers and scientists, sometimes we must go back to the past to thank those old professors that instilled in us that vocation during our younger years. With them we learned that, while training to be great professionals, it was much more important to become great "vocationals".

Personal effort turns people, physicians in this case, into experts in some areas of learning. Unfortunately, time and age make passion and novelty fall victims to routine in many cases. But occasionally too, that initial flame of illusion revives from its ashes. This leads a few, usually the most rebellious and/or creative, to become "in-perts". In most cases these in-perts are taken by the rest as not much more than bothersome and unbalanced, *impertinent* beings, when not as completely crazy. And for a while, the experts can be right sometimes. This race of *rare avis* is non-dual, this is, people that form a seamless Unity between the essence of problems they are concerned with and

their own inner essence (adualism or non-dualism). Through their high sensitivity and insight, they can see the problems under study as one unit with the most holy in them. Indeed, at the beginning they do not appear rational at all, However, using their intuition, and not any external help, their learning comes from the deepest areas of their truest being. In other words, from areas of consciousness that until a certain moment have been hiding in the unconscious and in the lava from a psychic volcano ready to erupt with noise, enlightenment and numinosity (Table IV).

By merging with the same essence and nature of the problems to be investigated, our rare in-*per*t

have a direct and visionary access to the roots and sap of the tree of science, this is, to the origin, to the hidden nature of that mysterious *“organ of creative imagination”*, as it was defined by Rof Carballo¹³. That can lead to a face-to-face encounter with *“the primordial phenomenon”*, as Goethe explained it, not without difficulties (Table 4)¹⁷. Meanwhile, the branches of the tree of science, far from its deep roots, continue to be exploited by the more *“superficial”* experts. What brings to mind to the *old child* of Lao Tzu, when he said: *“Broad-minded men search for the roots. Narrow-minded men look to the branches”*. And the old sage follows: *“Hell in to try to transmit a great idea to a politician in power”*^{cited in 18}

TABLE 4

GOETHE'S PRIMORDIAL EXPERIENCE
a) It is a manifestation of the spiritual realm. <i>“A type of experience superior to what we normally achieve. It is the highest experience that a scientist can aspire to. The primordial experience has reached a limit beyond which we should not try to go. When the original phenomenon marvels us, it leaves us satisfied”</i> ³⁴ .
b) <i>“If the divine, infinite and eternal life manifests itself in the temporal and finite world, and can be perceived by human beings, then the question arises to what extent we should accept the limitations of scientific knowledge and to what extent they should be extended to the spiritual realm”</i> ³⁴

The collision among the world of the EX and the world of the IN.

The big conflict arises when the war of the IN enters with all their strength and energy into the field of the EX. In doing so, the IN are trying to communicate unprecedented solutions, amazing discoveries and, apparently, irrational ideas (Table 2). Another problem arises from the fact that the stage and level of consciousness of the science of the EX, conveying a certain mental and spiritual narrowness and intolerance typical of the rationalist thought, is not prepared to understand or accept (*misoneism*) that, in Einstein's words: *“There is never any hope for any idea that does not seem strange to start with”*. Nor can the modern-rationalist mentality of the EX accept that, when it comes to science, where *“the authority of a thousand is not superior to the humble reasoning of a man”*, according to Galileo, a position that was

also defended by Henrik Ibsen³⁵. And since for the EX the hunger is for "new" data, their production machinery does not stop, because *“data”* can always be made infinite, even uselessly infinite. What the EX do not understand or will never accept is that on many occasions the most important discoveries have not been achieved by obtaining new data, but through finding new ways of thinking about previously well-known data. This was explained by Nobel Price Albert Szent-Gyorgyi by saying that *“research is to see what everybody has seen and think what nobody has thought”*.

Once one of those infrequently genuinely creative acts appears *de novo*, it is essential to preserve a state of high energy that will make it possible a new perception through a receptive and hypersensitive mind, resisting the painful storm of inter-paradigmatic and instable periods where the future has not appeared, the past has disappeared and

the consciousness of the present is lost in the middle of inner nothingness. All this causes the solitary IN to be frontally rejected by the dominant *brave new world* and *status quo* of the powerful EX (Table 2). To make matters even worse, the EX take advantage of the unbalanced situation - this is, when the old is dead and the new has not yet emerged -, to bestow the absolute power of the times on the worlds of science, medicine, research, economics, politics, religions, spirituality, etc.

The modern rationalistic stage claims to have banned the possibility of the bursting out of "dangerous and creative leaders of change" to their concept of their world, when in many cases their misoneism induces a terror that tries to sink any change of their paradigm, and thus true progress, as Thomas Kuhn announced it in his book *"The structure of scientific revolutions"* ³³. Therefore, the EX always treat the IN as irrelevantly mad and barely tolerate them. Finally, a moment arrives where the power of the EX cannot prevent a and great idea to succeed - not an irrational one, but now one trans and suprarational) (Table 3) ³⁴⁻³⁶.

So, the brand-new idea sprouts out from the dark subsoils of the human mind and finally emerges lifting the idea up to surface to flourish. After this moment the proud EX reminds us of the three phases that every new and great idea inevitably goes through. First, it is ridiculous. In second place, it is dangerous, and then, when it finally succeeds We all knew it all beforehand! This is always like that because *"great spirits have always encountered violent opposition from mediocre minds"*. Einstein again to clarify certain things. All in all, what the mediocre mind will never understand is that rarely, if ever, the birth of a new and higher stage of consciousness is born without pain or a great idea is born without an immense sense of loneliness and suffering of the creative personality that harbors it and is usually is victimized by it ^{15,19-23}. (Table 2). Now everybody tries to forget that until that *turning point* the EX have done everything possible to keep the new ideas buried within themselves ,or at the most,

sharing them with and if possible, together with their also solitary defenders.

4. EXPANDED STATES OF CONSCIENCE IN SOME HIGHLY CREATIVE SCIENTISTS. ENLIGHTENMENT AND AWAKENING.

"To be astonished at anything is the first movement of the mind towards discovery."

Louis Pasteur

"I didn't arrive at my understanding of the basic laws of the universe through my rational mind".

Albert Einstein

All this leads us to better understand another great problem and challenge for the truly creative mind, especially for that creativity that we have called *"naked"*. That is, a discovery without any previous background on which to rely and lean on. Furthermore, the pain of the obsessive situation has the "poor victim and recipient" of that *naked* creativity tightly grasped. At this stage he does not even understand where the ideas come from and how to articulate them and give them a sense and a meaning. In part, one of the most representative IN-creatives among them all, Charles Darwin, used the following words to explain it: *"It is a curse for anyone to be as obsessed with a subject as I am with mine."*

The physicist and Nobel Laureate Wolfgang Pauli cursed his fate and confessed that he wished that he had been destined to be an actor, a musician or a waiter. The reason for such complaint is that the obsession with an idea or the inability of the person to express it becomes an insufferable torture that absorbs the poor researcher day and night, as a victim of a hidden, painful and elusive conflictive mental process. A situation that will last until an ecstatic and salvific "Eureka" feeling suddenly emerges with the answer from unknown places and intricacies of the human brain or from outside and/or above it, and provides us, in an instant, with the final solution to a problem through an immediate and transtemporal jump to a response

so hardly sought. Now the new synthetic perspective has been born (Tables 2 and 4)^{13,15,31}. This reminds us of what happens in the resolution of Zen-Buddhist koans, for which the rational and linear mind is neither qualified nor prepared to solve certain problems. Finally, the solution to the obsession of the eX comes to us, overcoming the painful previous state of a most unhealthy excitement, freeing the researcher, scientist or creative artist, from what can be interpreted, even correctly, as a neurosis of anxiety and even as an overtly paranoid and psychotic situation^{13,19-23}.

To understand the intermediate state of mental confusion that leads to obsession before reaching a solution that solves previously incomprehensible paradoxes, one can resort not only to the remote entrails of Zen Buddhism but also to some situations closer to western man, as reflected in some well-known films. For example, the state of confusion that dominates the character of the Nazi commander in Roberto Benigni's *"Life is beautiful"*, keeps him awake because he cannot mentally solve certain puns and riddles or, what is much worse, move them away from his mind. In a similar case, let's remember the state of stupor and apparent madness of the character of Roy Neary, portrayed by Richard Dreyfus, in the movie *"Close encounters in the third kind"*, by director Stephan Spielberg. There is a time when Roy/Dreyfuss knows, though unconsciously, that he is in possession of a very important truth, but from which he only has a confused mental image and about which he does not know its origin, nature, or what it means. Therefore, the only thing he can think of is to relieve himself from the anguish that dominates him, is to build a huge mountain of dirt and grass taken from his garden and take it inside the living room of his house. Logically, and *rationality, too rationally*, as Nietzsche would have said, leads his family to think that he has gone into a state of absolute madness and leave him well alone.

These scenes represent something very similar to what some of the greatest scientific creators report,

sometimes with a mixture of respect and fear for their own newly found subjectivity. Until the painful birth of an idea takes place, the IN-pert will not be able to rationalize and communicate what he has discovered to the outside world, and perhaps only partially to himself (Tables 2 and 3). We would almost dare to describe that the timeless healing moment of suprarational and synthetic creative explosion has a lot in common with mystical experiences, those that *"in the middle of no time"* shape a new aspect of reality by joining all the hitherto scattered mental splinters of the consciousness and spirit of a being submerged in a deep creative crisis. These are timeless moments of sudden inspiration, enlightenment and awakening, which recall the example of the mathematician Augustus Kekulé that while sleeping he dreamed of the shape and composition of the benzene ring. It is in the midst of an apparent timelessness, or waking up from an hypnopompic dream, that the problem is solved alone, an instant that Maslow literally described as a moment of revelation, of illumination, of total understanding, of lucidity and ecstasy, and which can also be termed as an eternal moment, apparently outside the normal concept of time²⁶ (Table 3). In the same vein, another similar experience is one of total immersion of the mind into a research problem that often makes the person completely loses track of passing time. In words of Abraham Maslow himself: *"... so that a day can pass as if it were a minute and a minute can be so intensely lived that it looks like a day or a year."* From there, the mental disintegration is reconstructed and instantly re-integrated from the instant when the final piece of a puzzle is placed in its right place and a new synthesis of a higher order and a solution at a superior level of consciousness, now supralabyrinthical and supraparadoxical, is born³² (Table 3).

Finally, the time to make known to the world something radically new, something that can be completely different to everything previously known arrives and the good news reenter physical

and rational reality, coming in and down from the suprarational and transpersonal realms. Now, our creative beings still must learn that can be a target of fierce criticism and persecution. It is even possible that all his personal, family and professional life can be completely shattered and destroyed. This is what happens to Dr. Thomas Stockmann, the wonderful character of the play *"An enemy of the people"* by Henrik Ibsen ³⁵. At the end, the whole creative process has become a step in the void that can only be taken based on faith, a faith similar to, blind or enlightened, religious faith. Something that Einstein called *"the cosmic-religious experience"*, and his fiercest critics and some blind academics nicknamed *"the comic-religious experience of Einstein"*.

Kuhn also insists that the great creatives and pioneers must be able to live for a while in a very messy world, so chaotic that some of them had to abandon their pioneering efforts because of their inability to tolerate the unbearable crisis and the tension imposed by their *"night of the soul"* ³⁵. It must be understood that it can be impossible for some of them to adjust to a situation that has never existed before and that nobody has ever experienced, like having become lonely and solitary children of a cold and unfriendly universe. In this line, it has been said that the whole creative process can become so highly self-destructive that can end up in a resounding failure due to the environmental influences around the creator and the end of his limited human resistance. Rof Carballo also described how promising professional careers in creatives of the higher order have finally failed because of the negative influence of a woman, or even her own families, which is true from the time of Socrates to the present day ¹³. Although the opposite also happens, this is, that a woman has been the necessary support to avoid the collapse of a creative man plunged into terrible blockades of expressiveness along with other insurmountable difficulties. The latter was the experience lived by Jonny Forbes Nash, the character played by Russell

Crowe in the film: *"A beautiful mind"*. Finally, Max Planck added something that life continually confirms and repeats: that a new scientific truth does not triumph through the conviction of its opponents, making them see the light, but that these opponents eventually die and a new generation that becomes familiar with it grows up.

5. NEUROSIS, PSYCHOSIS, AND TRANSCENDENTAL EXPERIENCES IN HIGHLY CREATIVES. FINAL REINTEGRATION.

"The psychotic drowns in the same waters in which the mystic swims with delight".

Joseph Campbell

In his initiation journey, the unshakable faith of our beloved IN first descends to the dark night of the soul (John of the Cross), going there before any hoped ascent -, when he will climb through all the evolutionary obstacles, overcoming the pain of the flashes of intuition that could have ended physically and mentally with him, as Einstein confessed about himself. This is what Dante meant when he wrote that *"the only way to Heaven is through Hell"*. At the end, only armored with the help of an unshakable faith in his own ideas he will be able to succeed. In the meantime, our creator can be only sustained by his own forces while dangerously walking on a tightrope located at the highest heights of consciousness, where he tries to survive for a while at a psychological and spiritual level well beyond and above himself (supra-egoic or transpersonal state). A level where it is not known what competitiveness, malice, self-interest or mere personal convenience are. Once this position has been reached, the special person manages to abandon himself, leaving his ego behind and below, where the painful negative aspects of a creative process are forgotten along the past sorrows of hell. For the rest of the mortals to be able understand the level of consciousness and creative nature that dwells beyond oneself, Abraham Maslow used the following example: *"Suppose you discovered a cure for cancer. Would*

you worry about your body, or about being in personal danger, or about your heart?" ^{15,26}.

The finish line of the entire descending and ascending process is to reach a state of bliss,

numinosity and self-realization, as it is summarized in Table 5, and as it has been defined by the different men and instances mentioned, among others.

TABLE 5

NUMINOSITY: CHARACTERISTICS AND FINAL INTEGRATIONS
- Entrance into the superhuman (Teilhard de Chardin).
- A state of consciousness that is equipped to deal with the unique emotion of direct contact with the transpersonal and eternal (Gnosis) (Carl Jung).
- Contact with the holy, tremendous and incredible (Wikipedia).
- Direct knowledge of realities or eternal truths (William James).
- "Intuitive knowledge is the very essence of God in man. This knowledge and the nature of God are the same thing (Baruch Spinoza).
- Cosmic intellect (Huxley), or Third Eye of Knowledge (San Buenaventura, Wilber).
- Clarification of intellectual adventures into fundamental truths (Plato).
- Cosmic-religious experience (Albert Einstein).
- Death/rebirth experience (New Testament).
- John of The Cross's poem: "I entered not knowing where".
- Where things cease to be as they appear and appear as they really are (Talmud).
- The night of power (Koran).
- The primal phenomenon or primordial experience of Goethe.

No one at a low level of evolution of his psyche and consciousness the prepersonal and/or the personal/egoic stage can understand the immense effort that a fully original theoretical work requires, that is, one born completely virginal in the mind of its creator. It demands his total immersion in something that comes as a gift or as a curse, or both together, since it can often be preceded by what is known as a "brainstorm", which is accompanied by a state of absolute disorientation and unbearable panic attacks (Table 2). Something that the blind narrowmindedness of the rationalistic mind uses to crucify the great creatives taking them for pitiful victims of irrational ideas and behaviors. This is done confusing the superior - the suprarational - with the inferior - the pre or irrational - or in other more technical words, falling into the jaws of Wilber's famous "*Pre-Trans*

Fallacy" And it is that, according to the same author, "*the appearance of any higher stage of human consciousness is seen by the 'status quo' as the Devil himself*" ⁸⁻¹⁰. This makes the scientist or highly creative researcher a pioneer who is not afraid to enter the jungle of the unknown and become a true hero by being the first to try the next higher structure of consciousness, one beyond all personal security and selfishness, while being perfectly aware that he may be losing his life in the effort. Perhaps the exception to this unspeakable struggle is someone like Mozart, who does not seem to need to rise to the level of the highest and more evolved structure of consciousness, or *meme*, either extra-, supra-personal and/or transpersonal and/or integral, because he probably came to this world with it all impregnated in its nature, soul or spirit. This kind of

transpersonal consciousness was considered by psychologist Carl Jung as that level of *consciousness "that enables some people to overcome problems that otherwise would have destroyed them"*³⁷.

6. EMOTIONAL EXPERIENCES, PARADOXES AND SERINDIPITIES IN THE PROCESSES OF SCIENTIFIC CREATIVITY. REENTERING RATIONAL REALITY AND BACK TO THE FUTURE. A PERSONAL/TRANSPERSONAL EXPLANATION.

"A great discovery needs luck, inventiveness and intellect, none of these characteristics can survive without the other".

Goethe

At this point it seems necessary to offer a brief explanation of how everything so far considered in this essay has been important for us during the last four decades. The sudden leap in our work and medical-scientific evolution date from the beginning of 1975, when we collided with an irresolvable paradox that demanded a radical change of consciousness and a instantaneous jump from normal rationality to non-dualistic and integral zen-like thought¹¹.

One unexpected day, by sheer serendipity and "apparent" chance, we learned from a single case of a patient that a high incidence of cases of colon cancer in human beings appeared after many years, even decades, following a surgical procedure known as ureterosigmoidostomy (US) - this is: the implantation of the ureters into the colonic wall. In this patient, two colon cancers were simultaneously diagnosed, each one at the site of implantation of each ureter in the colonic mucosa.

This initial observation was published as in the *Annals of Internal Medicine, USA*, occupying no more than a third of one page³⁸. On the contrary, at the same time we learned that some cases of colon cancer, even in an advanced metastatic stage, as well as other tumors in different locations

in the organism, occasionally disappeared spontaneously after the same surgical procedure of US (the so called "spontaneous regression of cancer")³⁹.

However, under these healing circumstances, it only took a few weeks to undergo an unexpected and "iatrogenic" total cure and tumor disappearance. The mind-breaking question that arose at that moment was: how can the same surgical procedure give rise to two completely opposite situations, on one hand the induction of a malignant process and, on the other hand, the complete spontaneous disappearance of malignant tumors in, sometimes, far away locations of the organism? Which were the by unknown mechanisms mediating in both opposite effects? Everything seemed irrational. Some unknown cause and mysterious mechanism induced cancer in the long term in the colon, and the same cause "cured" different cancers in the short term after a US.

After being hit by that paradox, the answer suddenly resolved in a split of a second a few nights later, creating a sudden feeling of relief and indescribable illumination. We thought that the only parameter that could explain such an absurd, mysterious and contradictory situation was the time of incubation of both processes, with the induction of colon cancer after a US usually taking more than fifteen years and the spontaneous disappearance of some malignant tumors after performing that type of surgery taking only a few weeks at the most.

At the end, the only difference we found among both situations was the opposite homeostatic deviations of the acid-base changes of certain tissues, which behaved in opposite ways in both pathologies. From there on, the initially overwhelming exhausting obsession led during the next decades to the publication of around one hundred fifty scientific articles about cancer metabolism, from basic research to clinical situations.

Furthermore, after in the decade of 2010, thousands of scientific publications, sometimes inspired in these seminal efforts, led to the onset of the new oncological "pH-Centered Anticancer Paradigm"^{40,41}. So, an apparently "casual" initial clinical observation by serendipity in one single patient, along with the pioneering work of many

investigators in the area of cancer metabolism kept growing the interest over the next years, a subject that was initiated around 1920 by the great Otto Warburg and has grown and evolved since then⁴²⁻⁴⁴. The last actualization of this hundred years old metabolic paradigm of cancer metabolism has recently been published in this journal⁴⁵ (Tabla 6).

TABLE 6.

MILESTONES OF METABOLIC CANCER RESEARCH DURING THE LAST ONE HUNDRED YEARS.
1920s. Discovery of the aerobic and fermentative glycolysis of tumors by Otto Warburg seminal and extraordinary discoveries.
1956. Heated discussions, mainly between Otto Warburg and Sidney Weinhouse, with Arthur Schade and Dean Burk as witnesses, on the meaning of tumor cells glycolysis and respiration in cancer etiology.
1960s and 1970s. Discovery of the stimulatory effects on glycolysis and carcinogenesis of different pH-elevating growth factors.
1980s and 1990s. Increasing description of different membrane-bound hydrogen ion (H ⁺) trans-porters (PTs) as well as a high pH _i in cell transformation of fibroblasts.
1990s. First demonstration that the upregulation of certain PTs induces cell transformation by increasing pH _i , while downregulating H ⁺ efflux inhibits cancer growth and facilitates the induction of cancer cell apoptosis.
2000s. (A) Increasing research on the potential importance of proton transport inhibitors (PTI) in cancer treatment and the discovery of the carcinogenic effects of different Na ⁺ /H ⁺ antiporter upregulating factors in cancer etiology, etiopathogenesis, growth and the metastatic process (virus, PTs, chemical carcinogens, etc.) (See Table 2).
(B) Description of pH-unrelated hallmarks and new pH-related hallmarks of cancer. (C) First publications of pH-related integral measures as a concerted therapeutic approach to different human malignancies.
2010s. Description of cancer proton reversal (CPR) as a selective cancer hallmark of cancer. An increasing recognition of the new pH-centric anticancer paradigm in basic and clinical oncology. Finally, the first explanations of the opposite relations between cancer and human neurodegenerative diseases (HNDDs) are described.
2020s. The Warburg effect is side extended to the pathogenesis of different human pathologies beyond cancer, including human neurodegenerative diseases (HNDDs) and infections.

Progressively, the new idea of joining in one single concept the aerobic glycolysis of tumors and the hydrogen dynamics of cancer (H⁺ dynamics, or

pH), has given rise to at least seven main interrelated branches of cancer research, namely:

1) To show that all malignant tumors in their multiple locations have many more features to

share than differences among them and at all levels: a paradigm that allowed to integrate molecular, biochemical, metabolic, behavioral, even clinical aspects of malignant tumors and the dynamics of the metastatic process⁴⁶.

The next task was to try to integrate into one single wide-ranged theoretical concept most of the so far separated branches of cancer research in a new model and paradigm and unitary perspective. And this could only be done through the acid-base perspective of homeostasis and allostasis that were initially created by Walter Cannon and Hans Selye one hundred years ago⁴⁷.

3) Based on these premises, the next deductive leap allowed us to propose a different treatment approach for certain malignant tumors⁴⁸⁻⁵¹, a model that still is in its growing phase, but which has been accompanied during the last few years by the publication of books on the subject^{48, 52}.

4) As a beneficial "side effect" of the same homeostatic-allostatic approach, a new and integral theoretical conception has been created, transferring concepts of oncology sideways into neurology, all within a new "more transversal plus translational" integrated research model on cell survival and death mechanisms in HNDDs and in cancer, two processes that dwell on opposite sides of a metabolic and energetic spectrum^{52, 53}.

6) The previous point has made it possible to propose the use of plasma rich in growth factors (PRGF) of non-neurological origin in the treatment of HNDDs, an area that is still in its initial stages of development.

7) Finally, this new model and paradigm include a revolution in the area the resistance to antineoplastic drugs, even from the point of view of theoretical physics⁵⁴.

This long evolution spanning more than five decades devoted by us to a single idea initially born from a single clinical case, has progressively led the field into previously unexplored scientific areas⁵⁵. However, it has not been supported by the international pharmaceutical industry, a fact that

has been reflected in recent publications by a large group of researchers belonging to the International Society for the Transport of Protons in Cancer⁴⁰.

7. CONCLUSIONS

"Anyone who chooses the path traveled is as good as dead".

Carl Jung

The great American physician William Osler once wrote to a newly graduated doctor who had asked him for advice on what was the most crucial point to focus his professional future. Osler advised the following: *"Marry the right woman". And then added: "You have a career ahead of you in which a woman can either help or cause a shipwreck ...".* In a similar situation, another great advice to a young doctor about to embark on a research trip to the United States in a letter written by who was his teacher in Medical School 50 years ago: *"I know you, well, my young friend. You have original ideas, and you will have to pay dearly for them. And the better and more original the ideas, the higher the price will be that you will have to pay. We live without them, and that is what is most profitable, even if this seems a paradox. I know that no matter how much we like you, we have been too harsh to you and made you suffer too much. And I think we will continue to do it. My advice is that you do not pay attention to anyone and go your own way, no matter how difficult it appears in front of your eyes. I am sure that your young and passionate character will know where to take you. Chance only exists for the weak and blind; to the rest chance is destiny. Trust in life, and trust in your life".* That advice was given to the author of this article more than fifty years ago.

Regarding the always unpredictable future, no matter "the victim" of a creativity process and expanded state of consciousness can be a physician, scientist, researcher, an artist, etc., we must be prepared to recognize that a great creator can arise unexpectedly anywhere, and is not infrequent that he comes to life in the most unlikely and unknown places *"The big novelties always*

begin in the most unexpected corner", Espinoza *dixit*. Perhaps, it is that life insulates these most original creatives in order to protect them and let them thrive alone not to be too bothered by the noise of the outside world (Arnold Toynbee).

The "normal" human beings, the EX, are impressed of the oddities of these IN, and sometimes are even afraid of them. Their superiors in rank and curriculum many times think of them as extremely arrogant and despising their colleagues. So, it is not strange that some IN are treated as annoying and haughty beings by their peers. Sometimes, they also become victims of cruel, either personal, professional and/or social, *bullying*. Meanwhile, our pioneer and young creative hero, like a lone and Steppenwolf, must know that the more he advances into the unknown and enters his unexplored jungle, the less fellow travelers, and even friends, will have. Finally, beyond a point of no return, he will be completely alone, as the creative Hans Selye pointed out in his classic book "From Dream to Discovery" ⁵⁵. He will also have to accept that his wonderful mind will have to face all kinds of difficulties during a long initiatory journey made only for heroes and avatars of a new era. An initiatory drip that can only be started based on a strong faith. Finally, my friend, you better get ready to feel, and perhaps live, completely alone.

The entire initiation trip into the unknown is summed up in the words of an extraordinarily creative physician who reflects the drama of a pioneer of unbeatable convictions and honesty fighting the mediocrity and hypocrisies of the democratic society of his time. This is the case of another physician, an "IN" hero beyond imagination, Dr. Thomas Stockmann, the main

character of Henrik Ibsen's" play "*An enemy of the people*"³⁵. After paying the price of seeing all his personal, emotional and professional life shattered by the corruption of the democratic institutions of his country, he manages to leave a feeling of hope when, through the last words of this great and beloved being, he mysteriously whispers to his wife (and us): "*Hush! You mustn't say anything about it yet; but I have made a great discovery. It is this: The strongest man in the world is he who stands most alone!*".

Spo, not everything is hopeless and finished. After all, humanity is ONE ⁵⁶, so to some extent we are all ONE. Hyperdualistic minds and consciousnesses are the great enemy of every sane human being. The conclusion is that beyond any religious confession, the universal compassion of Buddhist extraction and/or the unconditional love and forgiveness of Christian extraction, perhaps are the only hope in this increasing decadent and soulless world.

Dedication:

This article is dedicated to the memory of Alejandra Luna, a brave young girl who died from a glioblastoma multiforme.

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