



Reality, Reason, Control: From Hyperconsciousness to Neurodegeneration (Psychic Evolution and System Bug)

Fulvio Marchese*

Psychologist Analyst CIPA-IAAP, Palermo, Italy

*Corresponding author: Fulvio Marchese, Psychologist Analyst CIPA-IAAP, Palermo, Italy

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Introduction

In 1921, Carl Gustav Jung, Swiss psychiatrist and father of Analytical Psychology published *Psychological Types*, his metapsychological model presented to the international scientific community. As we all know, Jung's theory is based on the contrast of two general types of attitudes, introverted and extraverted, specific to all human beings. The model is then further divided into four functional types: two irrational functions (sensation and intuition) and two rational ones (thinking and feeling). We all know how the world of analytical psychology and dynamic psychology in general, is nothing but a continuous confrontation with the unconscious. In clinical practice as in theory, the idea of the unconscious pervades our way of looking at human behaviors and our considerations on them. However, it is undeniable that each of us uses consciousness every time we come to a belief about ideas and feelings of our own or of others. Therefore, as Jung himself clarifies, a meta psychological model is a systematization operated by an individual driven by consciousness. And up to this point there is not much room for doubts. However, the following point appears much less obvious.

Despite the fact that Jungian thinking always counterposes polarized psychic instances in continuous relation, including on the consciousness-unconscious axis, Jung makes it clear that a metapsychological explanatory model, in order for it to be clear and shareable, must refer to the conscious and aware behavior of the human being. Let us use Jung's words to clarify the matter more clearly: "I, therefore, base my judgment upon what the individual

feels to be his conscious psychology... Such experience is merely one reason the more for basing my presentation upon the subjective conscious psychology of the individual, since there, at least, one has a definite objective footing, which completely [p. 454] drops away the moment we try to ground psychological principles upon the unconscious" [1]. It is therefore from the circumscription of our field of inquiry within Analytic Psychology that it was necessary to begin. In the coming pages, Jungian rational functions, thinking and feeling, understood as manifestations of consciousness, will always be at the core of our considerations, even as we move into other domains of knowledge.

On the reality principle

One of the highways to define what is meant by reality principle is offered to us by the clinic of psychotic disorders. An individual who presents beliefs or perceptions that are not shared by other individuals belonging to the same culture is considered to be in a state of altered reality principle, therefore in a state of severe mental illness (DSM 5). Therefore, reality is to be considered as a code for encoding and decoding experiences and information, shared within the same culture. The integrity of the plane of reality and related conscious beliefs are the beacon that enlightens the existential path of contemporary man. A path that evidently appears increasingly difficult. Help may come by looking outside our cultural boundaries in time and space. The neurologist Franco Fabbro, in a well-researched and argued study [2] has shown that, in the past,

through hallucinogenic substances, many cultures have pursued the alteration of consciousness as a road to a deeper understanding of both external and inner reality. A road to expanded consciousness. Fabbro tells us how wine and beer, opium, cannabis sativa, amanita muscaria, Claviceps purpurea, tobacco, coca, peyote, ayahuasca and the Mexican sacred mushrooms, have been used in the past within sacred contexts to enable humans to keep in touch with a reality not consciously perceived. This is the essence of many shamanic cultures. But these practices, however ritualized and practiced by initiated individuals, represented constituent elements of the collective plan of reality. Only a few had the experience directly, but many shared its meaning. We must therefore recognize that human beings, even at the origins of our culture as was the case in Mesopotamia and Greece, also founded their reality principle through altered states of consciousness (Smith, 2010), including delusions, as Plato taught us in the Phaedrus. But this was not only in the past. Currently, in Mexico, the use of sacred mushrooms and peyote plays an important role in many sacred rituals. Also, in many parts of South America, the Santo Daime Church uses ayahuasca as 'spirit wine'. The Santo Daime Church is legally recognized in the state of Brazil.

To what has been said so far, it could legitimately be argued that the use of psychoactive substances to broaden one's view of reality is a practice mainly related to the past and in any case to cultural minorities.

This is indeed the case. And certainly, the purpose of these pages is not to recover practices that, if they died out, had evidently ended their life cycle. Everything expressed so far serves as a premise for the reflections that will follow. On closer inspection, we can conclude that, in the contemporary Western world, conditions of altered consciousness are not accredited conditions for determining what we call reality. And this is regardless of the use of psychoactive substances. This aspect correlates with the fact that ours is the first form of conscious cultural affirmation in human history that totally disregards religious experience to define what we call reality. Yet, if we consider how extensive the use of psychoactive substances is in our world, be it cannabis, crack, synthetic drugs or alcohol, especially among younger people, then from the perspective of analytical psychology we must conclude that there is an important collective movement whose need seems to be to seek a different vision of things. As many mental health professionals know, drug use among young people can be considered not so much the cause of a condition of psychic illness, but rather a symptom of a progressively more incomprehensible and unsatisfactory belief and value system. Reality is a culturally determined construct, subject to change, both scientifically and in terms of collective beliefs. The problem of reality is not so much related to the empirical component as it is to the meaning that humans attribute to it. To understand how this happens, we must proceed further in our reflections.

Reason and consciousness

In Western culture, the elective tools for understanding and constructing reality are, as Jung himself states, rational thinking

and feelings, hence reason. Of course, Jung reminds us that there are also unconscious thoughts and feelings which, operating outside consciousness, nevertheless represent constituent elements of our reality, but we must remain focused on our goal. Recently, developments in neuroscience have enabled us to clearly define what is meant by human consciousness. According to Damasio the most evolved manifestation of consciousness is extended consciousness, which gives us an autobiographical sense of self. Damasio clarifies that the 'autobiographical self', at neurofunctional level, involves subcortical and neocortical areas. In particular, full awareness of oneself and one's history in a coherent and organized manner is related to the synthesis function of the convergence-divergence regions (CDR), located within the higher-order associative cortices [3]. As we have had the opportunity to support in other publications, we are aware of the fact that cortical activation, and particularly the frontal and prefrontal areas and posteromedial cortex, are areas that could be considered as strictly related to 'conscious mental states' [4,5].

In the same publications we used the term consciousness as a synonym for ego. It is sufficient here to conclude that the ego is equivalent to consciousness and that reason is the tool that consciousness uses to determine itself. To show an example of the impact of reason in the service of consciousness in determining reality, let us take a well-known example, Zeno's paradox of Achilles and the tortoise: following a logical mathematical reasoning, Zeno succeeds in showing that in a speed race, the tortoise, provided it had a small lead at the start, could get to the finish line first and thus beat Achilles. As we all know, Zeno's reasoning is created in a sound, consistent, and therefore sustainable way. In fact, in reality the result would be impossible. Rational and empirical reality are sometimes incompatible. Our society is full of such examples. Aristotelian logic often seems disengaged from the reality it is tasked with explaining, in favor of an autarkic and referential autonomy.

Consciousness and control: hyperconsciousness

Over the years, I have dwelt at length on the affective characteristics of people who had experienced acute psychotic episodes during their lifetime. It seemed to me that, to some extent, many of them presented a common feature: although under conditions of symptomatic remission they often appeared as 'normal', during psychotherapy sessions they showed a tendency to use the defense mechanism of ego splitting. In summary, the use of splitting can be observed whenever a patient, expressing himself or herself or others, divides the judgment into "totally positive" or "totally negative" [6]. And so far, there is nothing new: many therapists working with psychotic patients will be able to confirm the above. The problem in my opinion is that recently this kind of psychological attitude is spreading even to segments of the population with much less heavy diagnoses. Disturbingly, in my clinical practice I often perceive that many people relate to themselves on the basis of some sort of ego ideal, trying to make themselves the best human being possible. If they realize that they are inhabited by feelings with negative value, they do everything they can to suppress them only because 'they don't like being that way'.

I recently happened to follow a young man who was able to present the phenomenon to me in a sibylline manner. At the beginning of treatment, he presented an anxious-depressive condition that had never been treated before and, what was quite striking to me, despite his cultural level he seemed unable to find the words to express his emotional and relational condition. He had never taken any psychotropic drugs. Everyone in the family knew that he would soon be taking his final graduation examination. Shortly before graduation, he had confessed that he was behind in his studies and felt a deep inner discomfort. His malaise lay not in his cognitive abilities but in his emotional world. This young man, over time, finding the right words, told me that, for years, he dealt with evenings with friends and generally maintained relationships with other people while totally managing to conceal his inner state. He was capable of laughing at jokes, making jokes of his own, and appearing funny and purposeful while in reality hiding an unbridgeable emptiness inside. However, it was on one aspect in particular that he was able to give me a very important understanding. His description helped me understand how an evening with friends spent laughing, joking and showing positive behavior resulted in very highly energetic exertion. Sometimes, he was forced to leave his group of friends early to maintain a positive and energetic front whilst feeling depressed inside completely exhausted him. No one ever suspected his level of malaise. He himself did not realize how much of a slave he was to a hypertrophied ego and how his consciousness was constantly engaged in maintaining a high level of control over his own behavior and the image of others. There was no gesture, phrase or expression that, in some way, was not deliberately planned and kept under control. By the end, he was exhausted, and social relationships had dwindled as a result of an emerging attitude of social avoidance. This is a clear example of what I call hyperconsciousness: energy expenditure, continuous control over external and internal reality, prior inner assessment for each verbal and behavioral expression, all aimed at the best possible coping. Exaggerated control over one's behavior is the consciousness's response to the fear of the collapse of one's social image.

An over-controlling attitude is typical of anxious people. Very often, objectless anxiety is nothing more than an area of friction between an unconscious fear that tries to emerge and a repressive response of consciousness in order to avoid a psychic collapse. If we delve a little deeper into the diagnosis of such a psychopathological condition, we will realize a seemingly endless cascading process. Affective neuroscience has helped us understand that the ability to inhibit the emotional component from our behavioral manifestations is a uniquely human characteristic that has its own very clear evolutionary reason: when engaged in a highly demanding task, it is extremely important to be able to remain calm and lucid in order to achieve the best possible outcome [7]. It has also been highlighted from a functional neuroanatomical perspective that humans are capable of "recreating stress-induced analgesia" that can have a limited time duration [8]. But what happens if this state lasts for a long time, if a human becomes accustomed to inhibiting a portion of his or her emotional-affective experience and decides to show only a portion of it? For many laypersons, indeed even for

many cognitivists, this outcome might be considered a desirable existential outcome, but in reality, things are very different. The scenario then becomes extremely more complex when we consider that among the people who present this psychological characteristic there are many who have no awareness of it, just like the psychotic patients I mentioned earlier, but actually without ever having experienced any psychopathological crisis. Beyond everything, whether we are aware of it or not, the fact that a feeling is suppressed does not mean that that feeling does not continue to live within us.

From an evolutionary point of view, there was undoubtedly a phase in which the growing ability to control emotions was of great value: if we think, for example, of a man shooting an arrow with his bow while an enemy comes at him wielding an axe, it is clear that the more you can keep calm, the more likely you are to win the fight and survive. Perhaps, however, over time we have come to overdo it. Indeed, it seems that contemporary human beings live in an enduring condition of psychic activation aimed at achieving the highest possible performance, but this means living in a continuous state of vigilance, and this seems to be no longer sustainable. Very often, the condition of psychic activation aimed at enhancing performance, including social performance, is equivalent to an activation of the sympathetic nervous system [9]. The latter correlates with stress (Hendelman, 2016). If we insist on conducting life as if the goal was to produce a high level of performance, the result can be nothing but a condition of stress, fatigue and unhappiness.

We want to try to highlight a further peculiarity of human affective functioning: according to Porges, the ventral component of the myelinated vagus nerve plays a key role in the control of facial muscles involved in emotional manifestation and thus in affective and social engagement skills. The American author has shown that normal childhood development correlates with the ability to express emotions through vagal functions that originate in the brainstem (nucleus ambiguus) and have neuronal connections that also involve the motor cortex. Our question at this point is: how is it possible that a human being who exhibits adequate facial and vocal emotional expressive abilities, whose normal development we must therefore assume, could actually be simulating pro-social behaviour while inhibiting within himself feelings of frustration, depression, and anger? Many psychotherapists will be able to confirm that a great many patients have behaviour in public that betrays no inner suffering while internally they experience exposures in social interaction situations extremely poorly. Van der Kolk (2014) [10] pointed out that these are extremely common behaviours in patients who have experienced major trauma, indeed one of the characteristics of patients with dissociative functioning is precisely that they inhibit their own negative emotional manifestation, paying a very high cost in terms of expenditure of psychic and physical energy with often unsuccessful results.

Let us take a cue from what probably represents one of the major neuroscientific revolutions of the third millennium: according to the theory of mirror neurons, learning occurs primarily through neuronal activations that respond to exposure to certain stimuli.

Even on an emotional level, we learn to 'feel our emotions' by observing and then introjecting the emotional expressions of others [11]. It goes without saying that the greater the affective relationship with someone, the greater the introjection of that affective style. But what can the theory of mirror neurons tell us about the ability to simulate and dissimulate typical of contemporary human beings? It is one thing to be exposed, under experimental conditions, to a face smiling affably, quite another to be exposed for years to faces that strive to express feelings of positive valence while at the subliminal level emotional activations of diametrically opposite value range, as is the case with many children of anxious and depressed mothers. These children experience a sort of profound relational emotional deception, of which they are not aware, which will have a crucial role throughout their life, both on a psychological and relational level.

Hyperconsciousness and neurodegeneration

Let us now consider the most common neurodegenerative diseases. Alzheimer's disease "results from the formation of extracellular deposits of abnormal beta-amyloid (A beta), in that it is insoluble (senile plaques), and intraneuronal deposits of tau protein (neurofibrillary tangles), which then trigger a series of neurotoxic processes whose ultimate outcome is that of degeneration of cortical neurons (apoptosis)" [12]. A similar process also occurs in other neurodegenerative diseases. The pathogenic cause of this dysfunction is unclear, but some hypotheses exist in this regard. "The fact that most of the accumulations that characterize the various neurodegenerative diseases are positive for ubiquitinated proteins (beta-amyloid, tau, TDP-43, alpha-synuclein) led to the hypothesis that behind these diseases there could be an impairment of the proteolysis system carried out by the ubiquitin-proteasome system (UPS)" (ibid, p.625). Another of the pathogenic hypotheses concerns the dysfunction of autophagy activity in 'classic' neurodegenerative diseases and, in particular, in Parkinson's disease (ibid.).

Let us now deal with the neurofunctional localizations typical of Alzheimer's disease. The brain atrophies typical of Alzheimer's initially affect the hippocampal and Para hippocampal gyrus, then the frontal and parietal lobes. Let us briefly remind ourselves that, in patients with Alzheimer's disease, neurodegeneration of the hippocampus results in impaired memory, particularly the ability to store new information. Again, the frontal and parietal lobes, at high level, are related to the conscious abilities to formulate thoughts and ideas (frontal) and sensory information processing, computation, language and memory (parietal). The hypothesis proposed here, as simple as it is bold, is that neurodegeneration of the Alzheimer's type is related to wear and tear on the functions of consciousness. The intense activity of suppressing unwanted emotional activations, the overloading of information processing and, in general, the continuous energies employed in an existential attitude devoted to control over conscious activity, I believe, play an important role on some neurodegenerative forms. For many years I served in a University Hospital of Psychiatry and Neurology. I was deeply impressed to learn that many patients with Alzheimer's disease had previously been diagnosed with anxiety and mood

disorders - a further element favouring our hypothesis.

In general, neurodegenerative diseases share a destructuring of the functions of consciousness, which is equivalent to saying that they involve neurons of the neocortex, the best performing but also phylogenetically most recent part of the brain [4]. This is the central crux of the hypothesis in these pages: it is possible that the functions of consciousness do not stand up to the forms of use to which they are subjected during life: the consciousness system is too stressed. As [13] reminded us, in the past the difference between a psychiatric disorder and a neurological one was determined by the anatomical integrity of the brain. Even today we are led to think that, unlike neurologists, psychiatrists would deal with brain pathologies in the absence of anatomical damage. Yet, perhaps it is no coincidence that some symptoms of the suffering psyche, such as delusions, are present both in psychiatric disorders (e.g. schizophrenia, bipolar disorder) and in neurological disorders (different forms of dementia). In this regard, a clinical case can help to better understand our position: this is the story of an elderly woman, almost eighty years old, who since the time of the Covid pandemic had begun to live in an extremely withdrawn manner, showing an extremely worried attitude towards health. Elevated, to the limits of anguish. However, considering the historical moment and the collective atmosphere, this did not arouse particular concerns among the family members. In the spring of 2022, a domestic accident occurs. The woman falls from a ladder. He lost consciousness for about an hour, then recovered without any particular problems. He hit his head and has some bruises on his limbs but he categorically refuses to go to hospital due to fear of contracting Covid. Apparently, the fall had no particular consequences. A month and a half after the fall, within a couple of days it presents rather alarming symptoms.

He has difficulty expressing language and has obvious difficulties, particularly on the right side of his body. The diagnostic investigations highlight a bilateral subdural hematoma to be related to the fall of the previous month, due to which she will be operated on urgently in the neurosurgery department. The surgery will go well but from the moment of awakening, aspects of mental suffering emerge that we are interested in highlighting in these pages: the woman is convinced that her husband cheated on her during her absence, that he took advantage of her illness to establish a new romantic relationship. She is deeply angry with him and flatly refuses to see him. In reality, the woman seems to be reliving a situation that actually happened about forty years earlier, a period in which she discovered that her husband was having another affair and that he intended to leave her. It was astonishing for his family members to listen to the great detail with which she put together facts that actually happened in the past with current paranoid hypotheses. The hospital stay continued in continuous desperate crying. The anger at the betrayal she suffered was mixed with profound depressive suffering. She continued to say that she no longer wanted to see him, almost as if she wanted to anticipate with her husband's refusal the anguish of having been abandoned by him when he lost control of the situation. Within a few weeks, things settled down, at least on the surface. Unfortunately, at the

time of his resignation, his health condition seemed more severe than expected. Diagnostic imaging techniques had highlighted, in addition to the subdural hematoma, neurodegenerative suffering whose most probable hypothesis was dementia with Lewy bodies. The relationship between falls and neurodegeneration remains unclear. In fact, the latter had certainly arisen before the fall. As it is easy to imagine, the worsening process took its course and little by little the woman found herself living in a constant state of altered consciousness, in need of continuous care and assistance. Depressed mood and delusions began to be part of his daily life. One day, the woman seemed to present a particularly distressing condition.

The daughter told me that she had started to cry heartily and continued to say, "I want my mother, I want my mother...all children have a mother, only I don't have a mother...mammy, mammy, where are you?". Reconstructing the woman's story, it emerged that, at the age of two, she had been abandoned by her mother and raised by some relatives who acted as her parents. Almost eighty years later, his greatest trauma had returned to the surface. In light of this discovery, it was also possible to better understand the anguish of having been betrayed and abandoned that she had shown in the hospital after the neurosurgical operation. What we want to argue in conclusion is that deep emotional experiences leave their mark on us, sometimes indelibly. Consciousness, alone, often proves to have the strength to freeze certain contents for decades. But whether it is psychosis or a neurodegenerative disease, when the system of consciousness fails, traumatic emotional experiences re-emerge with all their devastating power. This woman had always gritted her teeth, she had learned to move forward and not listen to her inner suffering. She had always been strong, bordering on cynicism and sarcasm. In the end, the restructuring of his system of consciousness had revealed the profound suffering she had kept within himself all his life.

According to an old subdivision, mental illnesses can have a functional (psychiatric) or organic (neurological) origin. From our perspective, this difference changes things little. The failure of the system of consciousness always allows the deep problems of the human psyche to emerge. Surely, the more we have strained the engine of consciousness, the more likely it is that it will abandon us before reaching the finish line. As we know, there is an additional etiopathogenic hypothesis related to a cellular inflammatory process about the neurodegenerative illness, which for exposure limitations reasons we have chosen not to address here.

Conclusions

History teaches us that psychic evolution, for tens of thousands of years and until recently, has been characterized by the continuous confrontation between reason and religion, between the conscious ego and spiritual altered states of consciousness. Only recently, in our globalized culture, have we witnessed the assertion of consciousness as the dominant psychic instance. But everything has

a price, and perhaps the time has come to face the consequences of this dominance. For the human being real death is not physical death. Death comes when he loses his sense of conscious identity. It makes no sense to say that a man has lived to be ninety years old if he lost his sense of identity long before that. Man's aim for the future is to die once again, psychically and physically at the same time. Once again, we entrust Jung with the words to express the meaning of our reflections: "Being conscious tires one, exhausts one. It is an almost unnatural effort" [14].

Conflict of interest

No conflict of interest.

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