

SUBJECTIVE REALITY IN THE STATE OF CLINICAL DEATH

Abstract. One can surmise that the *subjective reality* exists during the state of clinical death, and we can infer the features of the latter, from the state of *Near-Death Experience (NDE)*, the essence and content of which are manifold and diverse, since they span a wide variety of experiences – from the total absence of images, existential horror and vital depression to euphoria. *Oneiric experiences* in NDE are constituted by a number of factors, *firstly*, by the spontaneous activity of the brain capable of creating vague images and sensations; capable of partially memorizing them without fully comprehending the perceived images. *Secondly*, they are shaped by the most deeply imbedded and regular patterns and habits, attachments and impressions. *Thirdly*, there are innate psychical structures which are believed to be formed in the prenatal period. And *finally*, one may deduce that the formation of the oneiric experiences in NDE is affected by the activation of specific genetic structures, the process that is inevitable in the conditions of the most acute and severe stress, – which clinical death, ultimately, is.

The current state of research in the domain of neurobiology, clinical medicine, cognitive psychology and a number of other fields of science allows us to assert that clinical death is not death in its proper sense – neither when the process of dying is natural nor when life is terminated due to an accident or manslaughter or any other violent cause.

This stage of life is a terminal state of human existence and consciousness in which subjective reality exists as *Near-Death Experience* (or NDE for short). During clinical death, a person becomes disconnected from the natural and socio-cultural regulators of time. He or she perceives neither sunlight nor rhythmic organization of the society and remains in the state of absolute sensory and social

deprivation. The only reality available in the given state is subjective, isolated reality, which has lost contact with the “external” sequence of events.

Near-death experience is, ultimately, *subjective reality* manifest in the terminal state of consciousness. It exists in the conditions of the gradual degradation of the cerebral functions which generally spreads from the youngest structures (cerebral cortex) to more ancient basal structures such as brainstem and cerebellum, as well as disintegration of the psyche, which is characterized by the affective-protopathic shift. The psycho-physiological validation of the affective-protopathic shift occurring in the terminal state of consciousness consists in the fact that epicritical cognitive processes are the function of the cerebral cortex of the brain, whilst protopathic, affective ones are the function of the thalamus, respectively. The thalamus is a more ancient formation of cortex cerebri, hence, it dies at later stages; the functions of the thalamus deteriorate later as well, correspondingly. One of those is responsible for the formation of subjective oneiric experiences, including negative psychological phenomena and disturbing fantastical hallucinations and delirious states.

The aforementioned aspects attest to the fact that the terminal state of consciousness, typical of clinical death, is hardly a *conscious* state, to begin with. The more appropriate term, it appears, is the *flow of sensations*, which constitute NDE proper and which can hardly be rendered by means of natural languages, since the latter are innately inapplicable for the description of the “otherworldly” reality, or afterlife.

Subjective reality in NDE is constituted by a number of factors.

- *Firstly*, by the spontaneous activity of the brain capable of creating vague images and sensations; capable of partially memorizing them without fully comprehending the perceived images.
- *Secondly*, subjective reality is shaped by the most deeply imbedded and regular patterns and habits, attachments and impressions, from those earliest abilities to perceive sounds acquired during the 27th week of a foetus formation in the uterus to the awareness of self during clinical death. Another significant element to consider is that certain typical NDE scenarios of meeting one's family, loved ones – the events which never actually happened in reality but are very common in the framework of NDE – can be explained by the productive activity of consciousness creating a particular atmosphere of semblance around the object of oneiric experiences. For NDE visionaries those encounters with relatives and friends supposedly form an unforgettable and memorable fabric of impressions indeed. What should be emphasized, though, is the fact that there is no palpable difference between this type of mental experience and everyday routine recollections of past events, since human memory is radically dissimilar from that of the computer chip. In contrast to the latter, a recollection of an event is not a complete and precise automatic copy, but a re-creation of the event, its interpretation and transformation based on the remaining sensory images and feelings.

- *Thirdly*, there are innate psychical structures which are believed to be formed in the prenatal period and which were named “archetypes of collective unconscious” by C.G. Jung and “basic perinatal matrices” by S. Grof.
- And *finally*, one may surmise that the formation of the subjective reality in NDE is affected by the activation of specific genetic structures, which is inevitable in the conditions of the most acute and severe stress. The state of affect accompanying the dying process is, unquestionably, the harshest and the most powerful in the personal history of a human being, hence, it stimulates the genes which tend to be “silent” the whole preceding life. What information they contain and in what fashion they affect the subjective reality in NDE is not altogether clear at the moment.

Oneiric experiences in NDE exist in a singular temporal continuum which differs dramatically from the phenomenological temporal axis.

- *Firstly*, under NDE the duration of time radically changes: a short period of clinical death (lasting up to 3–5 minutes) tends to comprise an avalanche of events, which sometimes surpasses the longevity of the whole preceding life.
- *Secondly*, an impression of eternity manifests itself: the temporal span of events vanishes and a person is immersed into a state of being out of time where all the events exist simultaneously or nothing exists at all.

- *Thirdly*, time becomes reversible: the normal sequence of events is violated so that it is not the cause that precedes the effect but the effect actually precedes the cause.

But how are these fundamental temporal deviations possible? Why is the subjective reality of near-death experience founded on other temporal laws than the subjective reality of normal everyday existence? It could be explained by the nature of NDE itself where the determinants of individual time of a person – both *biological* and *subjective* – are altered.

During clinical death a person loses all sensory contact with reality and is suspended in the condition of the absolute sensory deprivation. Almost all the natural temporal regulators including sunlight and the contraction of the cardiac muscle are excluded from the perception of the external world, and the latter “dissolves” entirely. NDE is being accompanied by the rhythms of the cerebral electric activity exclusively. Amongst those two predominate when clinical death unfolds: theta waves, typical of the state of the severe psychological stress (which is believed to be the norm for animals in their natural habitat) and delta waves, emerging during deep natural sleep, drug-induced sleep and in a coma.

Can these biological rhythms maintain the perception of time in NDE, typical of the common states? Certainly not. Total sensory deprivation and the cessation of almost all biorhythms create the state of subjective reality, characterized both by the phenomenon of the complete loss of time perception and the phenomena of the alteration in its *duration* and *vector*.

The *duration* of subjective time is defined by the quantity of acts of

consciousness performed in a unit of astronomical time. The ultimate estimate of the duration is a function of the number of changes perceived in the given situation. The atoms, the indivisible monads of the event-temporal chain of subjective reality, are images of perception, the number and intensity of which influence the perception of time: the more one perceives and the brighter those impressions, the longer the interval of subjective time.

How do features typical of the state of clinical death – the loss of the perception of one's body, absolute immobilization, sensory deprivation and the state of affect – influence the duration of subjective time? In truth, they affect it to such an extent that they virtually bring it to a standstill.

This has been verified during experiments carried out in space which were designed to assess the physical and mental condition of astronauts under weightlessness and during research of artificial sensory deprivation. In the latter case, a perfectly healthy person immersed for a period of several hours in the pool with the water the temperature of which equals that of the human body, of high salinity concentration, in total isolation loses all sense of time.

Under the state of *affect*, especially in extreme critical situations, time slows down exponentially and in the interval of several seconds extraordinarily long fragments of reminiscences are accumulated and flash before human eyes, as it were. In a mere infinitesimal moment, people literally re-live their whole life, and a second can turn into eternity for them. Under NDE, the content of intellectual operations yields to affective needs; affect undoubtedly plays an essential role in the

organization of subjective time in clinical death, thus contributing to the transformation of minutes to eternity.

The direction, or *vector*, of subjective time is determined by the fact that the division of temporal units into the past, the present and the future is not immanent in the animate nature; it is not a natural division per se, but merely a by-product of evolution, in the course of which the development of the cerebral asymmetry, abstract thinking and speech gave birth to the capacity of reflection and reflexive attitude towards the unity of human mentality and also predetermined the specific functioning of cortex cerebri in relation to the organization and functioning of the temporal chain.

Within the temporal sequence “past-present-future” *the present* appears as an uninterrupted flow of perceptions, thought-images and words. The more acute the present is for the person, the more suppressed the past, arguably, is in the human mind, which under the given circumstances manifests only chaotically and arbitrarily, and, accordingly, the more defined and palpable the image of *the future* is – which is both hypothetical and real. It is hypothetical inasmuch as it is a fruit of the productive imagination, intuition and reflection, and does not exist outside the domain of subjective reality. It is simultaneously real as it is captured by the synapses of neurons and is perceived by the subject as the organic element of his or her own existence.

If one considers that the future is for the most part the image or images of the productive imagination alongside the verbal and logical constructs, and the present, in its turn, is a flow of perceptions, thought-images and words, then *the past* is, doubtless, engrams of memory, sensory images of past perceptions of the

surrounding world and of oneself. The past is accessible, and both arbitrary and non-arbitrary.

Arbitrary recollections are reflexive, as a rule. They are, in their essence, acts of volition, aimed at extracting from memory specific images of the events past, as well as the verbalization of this imagery, which then are categorized in a specific manner – in accordance with a certain goal, which defines both the narrative behind the events, their actual essence and the correlations between the former. Insignificant details tend to be either eliminated by the subject or reduced to the essential minimum.

Non-arbitrary recollections are, in contrast, non-reflexive. The foundation for them is the preserved sensory images – organized in precisely that succession as the events captured by memory really occurred, hence, random reanimation corresponds to the actual order of events in time.

Conclusion

All the above-mentioned aspects allow us to conclude, that since Near-Death Experience states are characterized by the absence of *reflexive thinking* and *will*, they do not contain any image of the future; the reality of consciousness is constituted by the images of perception of the past, phantasms of imagination, symbolic images of the collective unconscious and other phenomena not susceptible to verbal explication, graphical description or acoustic representation.

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